



Fourth Year- Course Description 2026-2027



1. Course Name					
Pharmacology II					
2. Course Code					
437 ACIPha2					
3. Semester / Year					
First Semester / Fourth Stage					
4. Description Preparation Date:					
9-2026					
5. Attendance					
On campus					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hours theory+2 hours practical (75) / 4 units					
7. Course administrator's name (if more than one name)					
Theory:					
Name: Assist. Prof. Dr. Mohammed Abdulmutalib Email: mohamed.abdulmutalib@bcms.edu.iq					
Practical:					
Name: Assistant Lecturer Muhee Nimma Email: muhee.nimma.salman@bcms.edu.iq					
8. Course Objectives					
Course Objectives		Introducing pharmacy students to the general pharmacology of the central nervous system and the different groups of drugs used in the treatment of diseases of the central nervous system or drugs that alter its function. The student will be introduced to the different drugs used in the treatment of cardiovascular diseases. Furthermore, the course will cover medications that affect the digestive and respiratory systems.			
9. Teaching and Learning Strategies					
Strategy		Types of teaching methods include lecture-based teaching, group and individual learning, and interactive/participatory methods using point solutions devices.			
10. Course Structure					
Weeks	Hours	Required Learning Outcomes	Unit or Subject Name	Learning method	Evaluation method
1	3	Introducing pharmacy students to the general pharmacology of the central nervous system and the	Introduction to central nervous system pharmacology.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		different groups of drugs used in the treatment of diseases of the central nervous system or drugs that alter its function.			
2	3	Introducing pharmacy students to the different drug groups used as stimulants for the central nervous system.	CNS stimulants.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
3	3	Introducing pharmacy students to the different groups of drugs used as anxiolytic and hypnotic drugs.	Anxiolytic and hypnotic drugs.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
4	3	Introducing pharmacy students to the different drug groups used for general and local anesthesia.	General and local anesthetic.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
5	2	Introduce pharmacy students to the different groups of drugs used as antidepressants.	Antidepressant medications.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
5	1	Introduce pharmacy students to the different groups of drugs used as	Antipsychotic medications (antipsychotics).	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		antipsychotic drugs.			
6	3	Introducing pharmacy students to the different groups of drugs used as analgesics and opioids.	Analgesics and opioid antagonists.	Lectures and practical laboratories interactive/participatory methods using point solution devices.	Daily, midterm and final exams, practical exam, reports
7	3	Introducing pharmacy students to the different groups of drugs used in the treatment of neurological diseases.	Treatment of neurodegenerative diseases.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
8	2	Introducing pharmacy students to the different groups of drugs used as anti-epileptic drugs.	Antiepileptic drugs.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
8	1	Introducing pharmacy students to the different drug groups used as diuretics.	Diuretics.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
10	3	Introducing pharmacy students to the different groups of drugs used in the treatment of heart failure.	Treatment of heart failure (HF).	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
11	3	Introducing	Antiarrhythmic	Lectures and	Daily, midterm and



Fourth Year- Course Description 2026-2027



		pharmacy students to the different drug groups used as anti-arrhythmic drugs.	drugs.	practical laboratories	final exams, practical exam, reports
12	3	Introducing pharmacy students to the different groups of drugs used in the treatment of heart failure.	Antihypertensive drugs.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
13	1	Introducing pharmacy students to the different groups of drugs used as antianginal drugs.	Antianginal drugs.	Lectures and practical laboratories interactive/participatory methods using point solution devices.	Daily, midterm and final exams, practical exam, reports
14	2	Introducing pharmacy students to the different drug groups that affect the blood.	Drugs that affect the blood.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
15	2	Introducing pharmacy students to the different groups of drugs used as anti-hyperlipidemic drugs.	Lipid-lowering drugs.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
16	1	Introducing pharmacy students to the different drug groups used in	Gastrointestinal drugs and antiemetics.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam,



Fourth Year- Course Description 2026-2027



		gastrointestinal drugs and antiemetics.			reports
17	3	Introducing pharmacy students to the different drug groups used in the treatment of respiratory diseases.	Drugs that act on the respiratory system.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports

11. Course Evaluation

15 marks depending on the Med Term exam score
 5 Marks Daily preparation and Daily exams
 20 marks Practical Laboratory

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Pharmacology Lippincott Latest Edition
Main references (sources)	Pharmacology by rang latest edition
Recommended books and references (scientific journals, reports...)	British Pharmacopoeia Pharmacopoeia in the United States European Pharmacopoeia
Electronic References, Websites	Internet and PowerPoint



Fourth Year- Course Description 2026-2027



1. Course Name					
Organic Pharmaceutical Chemistry II					
2. Course Code					
438 ChPOp2					
3. Semester / Year					
First Semester / Fourth Stage					
4. Description Preparation Date:					
9-2026					
5. Available Attendance Forms					
On campus					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hours theoretical + 2 hours practical (75) / 4 units					
7. Course administrator's name (if more than one name)					
Theory:					
Name: Lecturer Dr. Farah Abdulhaleem Email: farah.abdulhaleem@bcms.edu.iq					
Practical:					
Name: Lecturer Salsal Kamal Abdulrahman Email: salsal.kamal.abdulrahman@bcms.edu.iq					
8. Course Objectives					
Course Objectives		1) This course offers an in-depth exploration of the pharmaceutical chemistry and pharmacology of major drug classes that target key physiological systems. The curriculum focuses on the relationship between chemical structure and biological activity (SAR), the mechanism of action at specific receptors, and the therapeutic applications of these agents in treating various diseases.			
9. Teaching and Learning Strategies					
Strategy		• Theoretical lectures with teaching aids such as videos and diagrams • Practical laboratories where students conduct experiments effectively			
10. Course Structure					
Weeks	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-4	12+8	• Cholinergic agents, cholinergic receptors and their subtype • Cholinergic agonists; stereochemistry and SAR; products;	Cholinergic agents	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		cholinesterase inhibitors • Cholinergic blocking agents; SAR; solanaceous alkaloid and analogues; synthetic cholinergic blocking agents and products; ganglionic blocking agents (neuromuscular blocking agents). Practical: • Preparation for salicylic acid. • Re-crystallization of salicylic acid. • Synthesis of aspirin. • Re-crystallization of aspirin.			
5-7	9+6	Adrenergic agents (adrenergic neurotransmitters), adrenergic receptor; drugs affecting adrenergic neurotransmission; sympathomimetic agents, adrenergic receptor antagonists Practical: • Assay of aspirin (known sample). • Assay of aspirin (unknown	Adrenergic agents	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		sample). • Preparation of nitrobenzene.			
8-9	7	• CNS depressant; benzodiazepines and related compounds; barbiturate; CNS depressant with skeletal muscle relaxant properties; antipsychotics; anticonvulsants • CNS stimulants Practical: Preparation of aniline. Preparation for acetanilide.	CNS drugs	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
10-11	5	Drugs affecting the Renin Angiotensin pathway and calcium blockers, vasodilators. Practical: Re-crystallization of acetanilide. Chlorosulfonation of acetanilide.	Drugs affecting cardiovascular system	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
12-13	7	Structure-activity relationships at H1-receptors; first-generation antihistamine classes; second-generation antihistamines; recent antihistamine developments: the	Histamine and anti-histaminic agents	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		“dual-acting” antihistamines; histamine H₂-antagonists: structural derivation of the “H₂-antagonists” Practical: Amination of p-chlorobenzene sulfonyl chloride. Hydrolysis of p-chlorobenzene sulfonyl chloride to sulfanilamide.			
14-15	5	Cyclooxygenases; Therapeutic Classifications; SAR. Practical: Synthesis of paracetamol.	NSAIDs	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
11. Course Evaluation					
20 Marks Lab Practical					
20 theoretical grades including midterm exam, quizzes and attendance					
60 Final Exam Marks					



Fourth Year- Course Description 2026-2027



12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1) Foye's Principles of Medicinal Chemistry Roche PhD (Author), S. William PhD Zito 7 th Edition PhD by Victoria PhD F. , College of Pharmacy, Houston Uni, Texas, USA. 2) Wilson and Gisvolds textbook of organic medicinal and pharmaceutical chemistry, John M. B.; John H.B. (twelfth edition). 3) An Introduction to Medicinal Chemistry 7th Edition by Graham L. Patrick, University of the West of Scotland, UK
Main references (sources)	1) Lab Handbook for Practical Organic Pharmaceutical Chemistry Adopted by the Department
Recommended books and References (scientific journals, reports...	
Electronic references, websites	



Fourth Year- Course Description 2026-2027



1. Course Name	
Clinical Pharmacy I	
2. Course Code	
439 ACICp1	
3. Semester / Year	
First Semester / Fourth Stage	
4. Description Preparation Date:	
9-2026	
5. Available Attendance Forms	
On campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours theoretical + 2 hours practical (60) / 3 units	
7. Course administrator's name (if more than one name)	
Theory: Name: Assistant Lecturer Yasser Sabah Email: yassir.sabah@bcms.edu.iq Practical: Name: Lecturer Dr. Humam Tawfiq Hadi Email: humam.hadi@bcms.edu.iq Name: Assistant Lecturer Ameer Ali Kazal Email: ameerali@bcms.edu.iq	
8. Course Objectives	
Course Objectives	The course equips students with basic knowledge and skills in community pharmacy in terms of management and practice.
9. Teaching and Learning Strategies	
Strategy	Lectures Seminars Simple Quizzes Brainstorming questions
10. Course Structure	



Fourth Year- Course Description 2026-2027



Weeks	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	This topic explains: 1. The difference between prescription and over-the-counter medications. 2- Symptom response in the community pharmacy 3- General rules for referring patients	Introduction to Community Pharmacy	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
2	3	This topic explains: 1. Causes and symptoms of common minor respiratory problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for common minor respiratory problems 4. Over-the-counter drug treatments for common minor respiratory problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.	Respiratory problems: cough, colds, allergic rhinitis, otitis media, laryngitis, pharyngitis	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports

3	4	This topic explains: 1-Causes and symptoms of common minor digestive problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for common minor digestive problems 4-Over-the-counter drug treatments for common minor gastrointestinal problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.	Digestive problems: diarrhea, constipation, heartburn, indigestion, irritable bowel syndrome and hemorrhoids	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
4	2	This topic explains: 1-Causes and symptoms of common minor children's problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for common minor children's problems 4-Over-the-counter	Childcare practice: oral thrush, pinworms, head lice	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		drug treatments for common minor children's problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.			
5	6	This topic explains: 1-Causes and symptoms of common minor skin problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for common minor skin problems 4-Over-the-counter drug treatments for common minor skin problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.	Skin diseases: acne, scabies, psoriasis, hair loss, fungal infections, eczema and dermatitis, dandruff, cold sores, corns, keratosis.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
6	2	This topic explains: 1-Causes and symptoms of common minor gynecological problems 2- Symptoms that require a visit to doctors	Women's health care: cystitis, vaginal thrush, primary dysmenorrhea, premenstrual syndrome.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		3-Non-pharmacological treatments for common minor gynecological problems 4-Over-the-counter drug treatments for common minor gynecological problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.			
7	3	This topic explains: 1. Causes and symptoms of common minor central nervous system problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for common minor central nervous system problems 4-Over-the-counter drug treatments for common minor central nervous system problems 5- Provide appropriate advice to the patient regarding over-the-counter drug	Problems related to the central nervous system: headache, insomnia, motion sickness, nausea and vomiting	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports

		treatments.			
8	1	This topic explains: 1-Causes and symptoms of common minor eye problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for common minor eye problems 4- Over-the-counter drug treatments for common minor eye problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.	Eye problems	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
9	1	This topic explains: 1-Causes and symptoms of common simple ear, nose and throat problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for common simple ear, nose and throat problems 4-Over-the-counter drug treatments	ENT problems	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		for common simple ear, nose and throat problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.			
10	1	This topic explains: 1-Causes and symptoms of common minor oral problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for common minor oral problems 4- Over-the-counter drug treatments for common minor oral problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.	Oral hygiene, mouth sores	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
11	1	This topic explains: 1-Causes of obesity 2-Complications of obesity 3- Benefits of weight loss 4-Non-pharmacological treatments for	Obesity and body weight control.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		obesity 4-Pharmacological treatments for obesity without a prescription 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.			
12	1	This topic explains: 1. Causes and symptoms of pain and musculoskeletal problems 2- Symptoms that require a visit to doctors 3-Non-pharmacological treatments for pain and musculoskeletal problems 4-Over-the-counter drug treatments for pain and musculoskeletal problems 5- Provide appropriate advice to the patient regarding over-the-counter drug treatments.	- Musculoskeletal pain and disorders	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



13	1	This topic explains: 1- Health risks from smoking 2- Facts about the benefits of quitting smoking 3- The theoretical model of smoking cessation 4- Guidelines for the use of nicotine replacement therapy	Nicotine replacement therapy	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
14	1	This topic explains: 1- Dietary supplements market 2- Dietary supplement controls 3- Risks of dietary supplements 4. Quality and effectiveness of supplements	Dietary supplements	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
15	2	This topic explains: 1- Update in the reclassification of over-the-counter drugs 2. Guidelines for the use of new over-the-counter drugs	Update in reclassification of over-the-counter drugs	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
11. Course Evaluation					
Midterm Exam + 20 Labs + 60 Final Exams20					



Fourth Year- Course Description 2026-2027



12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1-Symptoms in the pharmacy: a guide to the management of common illness. 2-Community pharmacy: symptoms, diagnosis and treatment.
Main References (sources)	Symptoms in the pharmacy: a guide to the management of common illness
Recommended books and references (scientific journals, reports...)	Handbook of Nonprescription Drugs: An Interactive Approach to Self-Care,
Electronic References, Websites	E-books and review articles



Fourth Year- Course Description 2026-2027



1. Course Name	
Biopharmaceutics (Lab + Theoretical)	
2. Course Code	
440 PhBp	
3. Academic Year/ Semester	
First Semester / Fourth Stage	
4. Date of preparation of the description	
9-2026	
5. Available Attendance Forms	
Students' signatures on the attendance sheet	
6. Number of hours and units of study	
2 Theoretical Hours + 2 Practical Hours (60) / 3 Units	
7. Course administrator's name (if more than one name)	
Theory: Name: Lecturer Dr. Mohammed Jassim Email: mohammed-jassim-neamah@bcms.edu.iq Practical: Name: Assistant Lecturer Rana Kadum Email: ranakadum@bcms.edu.iq Name: Assistant Lecturer Hussein Ali Email: husseinali@bcms.edu.iq	
8. Course Objectives	
1. The concept of biopharmaceutics. 2. Identifying factors that are influencing the bioavailability of a drug; these include a. GIT Physiological factors affecting oral drug absorption (oral drugs) b. Physicochemical properties of drug itself (solubility and dissolution rate) c. The type of dosage form and choice of excipients. 3. Bioavailability and bioequivalence studies 4. Pharmacokinetics of drug absorption including a. One compartment open model. b. Multiple compartment models.	
9. Teaching and Learning Strategies	
Strategy	Lectures Seminars Simple Quizzes Brainstorming questions
10. Course Structure	



Fourth Year- Course Description 2026-2027



Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+2	Concept of biopharmaceutics, bioavailability and pharmacokinetics	Introduction to Biopharmaceutics	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
2	2+2	GIT Physiological factors influencing gastrointestinal dr absorption: Gastric emptying time, pH and food	GIT Physiological factors influencing gastrointestinal drug absorption	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
3	2+2	GIT Physiological factors influencing gastrointestinal dr absorption: Mechanisms of dr absorption	GIT Physiological factors influencing gastrointestinal drug absorption	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
4	2+2	Drug physicochemical factors influencing drug absorption: Solubility and dissolution	Drug physicochemical factors influencing drug absorption	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
5	2+2	pH- partitioning hypothesis of drug absorption: pKa and dissociation and lipid solubility	pH- partitioning hypothesis of drug absorption	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
6	2+2	Dosage form factors influence drug absorption: type of the dosage form	Dosage form factors influencing drug absorption	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



7	2+2	Dosage form factors influence drug absorption: Excipients	Dosage form factors influencing drug absorption	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
8	Midterm Exam				
9	2+2	Bioavailability and Bioequivalence: Types of bioavailability studies	Bioavailability and Bioequivalence	Theoretical lectures Practical laboratories	Paper exam
10	2+2	Pharmacokinetics: One compartment open model	Pharmacokinetics	Theoretical lectures Practical laboratories	Paper exam
11	2+2	Pharmacokinetics: multiple compartment model	Pharmacokinetics	Theoretical lectures Practical laboratories	Paper exam
12	2+2	Pharmacokinetics: Intra-venous infusion	Pharmacokinetics	Theoretical lectures Practical laboratories	Paper exam
13	2+2	Pharmacokinetics: Protein binding	Pharmacokinetics	Theoretical lectures Practical laboratories	Paper exam
14	2+2	Pharmacokinetics: Dosage regimen	Pharmacokinetics	Theoretical lectures Practical laboratories	Paper exam
15	Student Seminar				
11. Course Evaluation					
15 marks depending on the midterm exam score 5 Marks Daily preparation and Daily exams 20 Marks Practical Laboratory Final Exam 60 Marks Final score 100 marks					



Fourth Year- Course Description 2026-2027



12. Learning and Teaching Resources	
Pharmaceutics The Science of Dosage Fo Design 2Ed M.E.Aulton v	Required textbooks (curricular books, if any)
Shargel L, Yu AB, (Eds.), Appl Biopharmaceutics and Pharmacokinetics; edition,2012.	Main references (sources)
	Recommended books and references (scientific journals, reports...)
	Electronic references Websites



Fourth Year- Course Description 2026-2027



1. Course Name					
Public Health					
2. Course Code					
441 ACIPuh					
3. Semester / Year					
First Semester / Fourth Stage					
4. Description Preparation Date:					
9-2026					
5. Available Attendance Forms					
on campus					
6. Number of Credit Hours (Total) / Number of Units (Total)					
Two theoretical hours per week (30) / two units					
7. Course administrator's name (if more than one name)					
Theory:					
Name: Prof. Dr. Hayder Al-Tukmagi Email: Tukmagi@bcms.edu.iq					
8. Course Objectives					
Course Objectives		• Definition of public health science, its objectives and fields in society and health levels, as well as infectious diseases, their causes, methods of prevention, and related nutrition with immunity. • Provide students with theoretical knowledge and skills, where the student learns to apply the basic theories of biostatistics in the sciences of health, epidemiology, and public health. It also includes focusing on important analysis processes such as measures of central tendency, measures of dispersion, and other various statistical methods for analyzing and describing data. • Improving students' ability to self-learning, using the Internet and accessing accurate scientific information. • Preparing students to be an efficient source with a solid scientific basis for community counseling.			
9. Teaching and Learning Strategies					
Strategy		Lectures Discussions Simple Quizzes Reporting			
10. Course Structure					
The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	* Explain the history	Introduction to	Lectures and	Daily, midterm



Fourth Year- Course Description 2026-2027



		and philosophy of public health as well as its core values, concepts and functions around the world and in society. * Identify the determinants of health. How disparities in neighborhood conditions, education, income, wealth, and social and political climate affect health outcomes and health inequalities	Public Health	seminars	and final exams, reports and seminars
	2	*To highlight milestones in the development of the pharmacy profession * Estimating drug development timelines and setting milestones in drug discovery	History reference	Lectures and seminars	Daily, midterm and final exams, reports and seminars
2	1	* Definition of epidemiology * Describe the basic terms and concepts of epidemiology * Identify the types of data sources	epidemiology	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



	2	* Discuss concepts and terminology involving drug safety * Describe the types of medication errors Addressing the link between drug errors and adverse drug events * Give practical examples of medication errors and possible solutions	Medication Safety and Medication Errors	Lectures and seminars	Daily, midterm and final exams, reports and seminars
3	1	* Identify basic methods of data collection and interpretation * Describe the public health problem in terms of time, place and person	epidemiology	Lectures and seminars	Daily, midterm and final exams, reports and seminars
	2	* Introduction to COVID-19 and how it combines spread, misconception and myth, disease control and treatments.	Infectious diseases	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



4	1	* Population growth analysis * Identify the basic concepts used in the study of population	Demographics	Lectures and seminars	Daily, midterm and final exams, reports and seminars
	2	* Explore some of the tools used to identify inappropriate prescriptions or side effects of medications * Introduction of characterization and reconciliation of drugs * Provide practical case studies and address key issues with possible interventions	Incorrect medication prescription and cancellation of medication prescription	Lectures and seminars	Daily, midterm and final exams, reports and seminars
5	1	* Distinguish between the demographic patterns of industrialized and non-industrialized countries. * Analysis of factors affecting population composition. * Study the results of progress in population age	Demographics	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



	2	* Transmission of viruses from cattle to humans * Causing Disease * Risk Factors * Signs and symptoms of an infected patient and how the spread of the disease can be prevented	Infectious diseases	Lectures and seminars	Daily, midterm and final exams, reports and seminars
6	1	* Define the concepts of demographics and population mobility and identify the influencing factors	Measures of disease recurrence	Lectures and seminars	Daily, midterm and final exams, reports and seminars
	2	* Determine the preparation of the community pharmacy * Understand the role of community pharmacists and their challenges. * Highlight the process of opening a community pharmacy	Community Pharmacies Department	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



7	1	* Describe and calculate measures that characterize population dynamics, including birth and death rates, fertility rates, sex ratios, and dependency ratios that affect them	Measures of disease recurrence	Lectures and seminars	Daily, midterm and final exams, reports and seminars
	2	* Estimation of factors that increase the risk of a patient's inability to follow up drug therapy and recommendations made by health professionals * Develop the skills necessary for pharmacists' procedures in promoting commitment.	Skills for pharmacists to enhance commitment.	Lectures and seminars	Daily, midterm and final exams, reports and seminars
8	1	* Explain the relationship between immunization and immunization * Comparison of the main modes of transmission of infectious diseases of public health importance	Infectious diseases	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		* Apply the principles of public health surveillance and epidemiology in relation to the investigation of infectious disease outbreaks			
	2	* Definition of the term "biosafety" * Understand the principles and practices used to protect people and the environment from: 1- Exposure while working with living organisms, substances or biological agents 2- Exposure to Active Pharmaceutical Ingredients (APIs)	Biosafety in pharmacy practice	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



9	1	Explain the legislative frameworks for the prevention and control of infectious diseases in Iraq. * Analysis of human and environmental factors that contribute to the emergence of new infectious diseases	Infectious diseases	Lectures and seminars	Daily, midterm and final exams, reports and seminars
	2	* Medications suitable for their clinical needs, in doses that meet their individual requirements * Medicines for a sufficient period, and less expensive for them and society.	The pharmacist's skill in using the appropriate dose for each individual case	Lectures and seminars	Daily, midterm and final exams, reports and seminars
10	1	* Describe the public health burden caused by non-communicable diseases. * Explain the disproportionate burden of these diseases in low- and middle-income countries.	Non-communicable diseases	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



	2	* Review current travel advice and immunizations based on travel locations * Identify possible infections in returning travelers * Better identify the need for referrals to travel medicine experts	Travel Medications	Lectures and seminars	Daily, midterm and final exams, reports and seminars
11	1	* Identify behavioral risk factors for non-communicable diseases * Understand the role of tobacco use and harmful alcohol use as risk factors for non-communicable diseases	Non-communicable diseases	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



	2	* Describe and demonstrate the use of "best evidence" in pharmacy practice. * Describe and demonstrate the use of pharmaceutical economic analysis in pharmacy practice	Evidence-based medicine	Lectures and seminars	Daily, midterm and final exams, reports and seminars
12	1	* Identify epidemics that occurred during the last century * Ability to discuss epidemiological issues using basic terminology * Understand the factors involved in the persistence of the disease * Ensure to know more about viruses and their treatment/prevention * Estimate that events around the world affect them [students]	Some important epidemics	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



	2	* Understand the different definitions of Polypharmacology * Identify the types of Polypharmacology and highlight their consequences.	Polypharmacology	Lectures and seminars	Daily, midterm and final exams, reports and seminars
13	1	Define the following terms: tolerance, abuse/abuse, Psychological and physical dependence * Describe patterns of abuse of certain medications * Describe the factors that affect the desired effects ("high") and the addictive potential associated with abuse commonly - describe the differences between the main classes of misused drugs * Describe how drugs at risk of abuse are legally	Misuse of medicines	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		classified			
	2	* Estimate aspects of research studies to determine the processes involved in planning a research study * Develop skills for oral communication and poster preparation during project deployment.	Principles of research study	Lectures and seminars	Daily, midterm and final exams, reports and seminars
14	1	* Understand how vaccines work and their types * Describe how to increase cooperation between public and private institutions to increase vaccination rates * Raise awareness of vaccine-preventable diseases and/or vaccination rates Describe how local advocacy efforts to promote and develop vaccination can be nurtured and leveraged to include activities at the provincial,	National Immunization Plan in Iraq	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		national and international levels			
	2	* Understand the term pharmaceutical care plan and its relationship to the patient in the hospital, clinical pharmacist. * Identify the role of the clinical pharmacist in the development of the care plan. * Give practical cases and develop a care plan for each case.	Introduction to Pharmaceutical Care Plan	Lectures and seminars	Daily, midterm and final exams, reports and seminars
15	1	Definition of terms of bacterial resistance, Explain methods of monitoring bacterial resistance globally and in Iraq	Bacterial resistance - Part One	Lectures and seminars	Daily, midterm and final exams, reports and seminars
16	2	Summarizing the National Report on Bacterial Resistance in Iraq Understand the methods used by the Ministry of Health to control bacterial resistance.	Bacterial Resistance - Part Two	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		Summarizing the published national research on bacterial resistance in Iraq			
11. Course Evaluation					
Midterm Exam Score: 25%					
Tasks and tests: 5%					
Final Exam Score: 70%					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)		1- Adetokunbo O. Lucas, Herbert M. Gilles. Short textbook of public health medicine for the tropics. Latest edition. 2-Roger Detels, Martin Gulliford, Quarraisha Abdool Karim, et al. Oxford Textbook of Global Public Health. Latest edition. 3-Theodore H. Tulchinsky, Elena A. Varavikova, The New Public Health Latest edition. 4-Aliso Blenkinsopp, Rhona Panton, Claire Anderson. Health promotion for pharmacists. Latest edition.			
Main References (sources)		1- Adetokunbo O. Lucas, Herbert M. Gilles. Short textbook of public health medicine for the tropics. Latest edition.			
Recommended books and References (scientific journals, reports...)		1-Roger Detels, Martin Gulliford, Quarraisha Abdool Karim, et al. Oxford Textbook of Global Public Health. Latest edition. 2-Theodore H. Tulchinsky, Elena A. Varavikova, The New Public Health Latest edition. 3-Aliso Blenkinsopp, Rhona Panton, Claire Anderson. Health promotion for pharmacist. Latest edition.			
Electronic References, Websites		Annual Antimicrobial Resistant Report, The Ministry of Health, Antimicrobial Unit, 2022 Annual Statistical Report by Iraqi Ministry of Health, 2022			



Fourth Year- Course Description 2026-2027



1. Course Name:	
Pharmacology III	
2. Course Code:	
442 ACIPha3	
3. Semester / Year:	
Fourth Year/Second Semester	
4. Date of preparation of the description	
9-2026	
5. Available Forms of Attendance:	
On campus	
6. Number of credit hours (total) / number of units (total):	
2 hours theoretical per week (30) / 2 units	
7. Course administrator name	
Theory:	
Name: Assist. Prof. Dr. Mohammed Abdulmutalib Email: mohamed.abdulmutalib@bcms.edu.iq	
8. Course Objectives	
Course Objectives	• Study the pathophysiology of inflammation and clarify anti-inflammatory drugs and drugs used in inflammatory conditions with important details about biological drugs. • Study of drugs used in the treatment of gout • Study of anti-diabetic drugs, whether insulin or other drugs used in the treatment of diabetes. • Apply pharmacological concepts about hormones of the hypothalamus and pituitary gland, as well as thyroid hormones including drugs used in hypothyroidism and hyperthyroidism. • The study of reproductive hormones and their inhibitors as well as contraceptives. • Give important information about the drugs used in the treatment of obesity, drugs used in the treatment of osteoporosis, and drugs used in the treatment of erectile dysfunction. • Application of pharmacological concepts about anticancer drugs
9. Teaching and Learning Strategies	
Strategy	• Lectures and interactive presentations • Learning based on examples of common clinical conditions Self-directed learning • Interactive workshops and seminars • Different assessment strategies



Fourth Year- Course Description 2026-2027



10. Course Structure

Weeks	Hours	Required Learning Outcomes	Unit or subject name	Learning method	method Evaluation
1	2	Acquired Pharmacological Knowledge	Hypothalamic and pituitary hormones	Lectures and seminars	Daily, midterm and final exams, reports and seminars
2	2	Acquired Pharmacological Knowledge	Thyroid and Antithyroid drugs	Lectures and seminars	Daily, midterm and final exams, reports and seminars
3	2	Acquired Pharmacological Knowledge	Estrogens	Lectures and seminars	Daily, midterm and final exams, reports and seminars
4	2	Acquired Pharmacological Knowledge	progestins, and androgens	Lectures and seminars	Daily, midterm and final exams, reports and seminars
5	2	Acquired Pharmacological Knowledge	Contraceptives	Lectures and seminars	Daily, midterm and final exams, reports and seminars
6	2	Acquired Pharmacological Knowledge	The adrenal hormones	Lectures and seminars	Daily, midterm and final exams, reports and seminars
7	2	Acquired Pharmacological Knowledge	Drugs affecting bone metabolism	Lectures and seminars	Daily, midterm and final exams, reports and seminars
8	2	Acquired Pharmacological Knowledge	Drugs for diabetes (insulin)	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



9	2	Acquired Pharmacological Knowledge	Oral hypoglycemic agents	Lectures and seminars	Daily, midterm and final exams, reports and seminars
10	2	Acquired Pharmacological Knowledge	Anti-inflammatory drugs	Lectures and seminars	Daily, midterm and final exams, reports and seminars
11	2	Acquired Pharmacological Knowledge	Drugs for RA	Lectures and seminars	Daily, midterm and final exams, reports and seminars
12	2	Acquired Pharmacological Knowledge	Drugs for Gout	Lectures and seminars	Daily, midterm and final exams, reports and seminars
13	2	Acquired Pharmacological Knowledge	Cancer chemotherapy	Lectures and seminars	Daily, midterm and final exams, reports and seminars
14	2	Acquired Pharmacological Knowledge	Cancer chemotherapy	Lectures and seminars	Daily, midterm and final exams, reports and seminars
15	2	Acquired Pharmacological Knowledge	Cancer chemotherapy	Lectures and seminars	Daily, midterm and final exams, reports and seminars

11. Course Evaluation

- 30 marks midterm semester: 5% Daily exams + 25 % paper exam
- 70 final marks: paper-based exam
- Total 100 degrees



Fourth Year- Course Description 2026-2027



12. Learning and Teaching Resources

Lippincott Illustrated Reviews Pharmacology, Six th edition (2015)	Required textbooks (curricular books, if any)
Basic and Clinical Pharmacology 15th edition (2021)	Main references (sources)
Crash Course Pharmacology, Pharmacology of Essential Medicines	Recommended books and references (scientific journals, reports...)
PubMed (https://pubmed.ncbi.nlm.nih.gov/) Medscape (https://www.medscape.com/) Drugs.com, DrugBank, The world's pharmaceuticals	Electronic References, Websites



Fourth Year- Course Description 2026-2027



1. Course Name					
Organic Pharmaceutical Chemistry III					
2. Course Code					
443 ChPOp3					
3. Semester / Year					
Second Semester / Fourth Stage					
4. Description Preparation Date:					
9-2026					
5. Available Attendance Forms					
On campus					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hours theoretical + 2 hours practical (75) / 4 units					
7. Course administrator's name (if more than one name)					
Theory: Name: Lecturer Dr. Farah Abdulhaleem Email: farah.abdulhaleem@bcms.edu.iq Practical: Name: Lecturer Salsal Kamal Abdulrahman Email: salsal.kamal.abdulrahman@bcms.edu.iq					
8. Course Objectives					
Course Objectives		1) This course covers the medicinal chemistry and pharmacology of chemotherapeutic drugs. It details the mechanisms of anticancer agents, from traditional antineoplastics to modern biotherapeutics. 2) The curriculum also provides an in-depth analysis of major antibacterial classes (including β-lactams and sulfonamides) and concludes with an overview of antiviral and antifungal agents.			
9. Teaching and Learning Strategies					
Strategy		• Theoretical lectures with teaching aids such as videos and diagrams • Practical laboratories where students conduct experiments effectively			
10. Course Structure					
Weeks	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-6	20	Antineoplastic agents: alkylating agents; antimetabolites; antibiotics; plants products;	Anticancer agents	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		miscellaneous compounds Hormones and related compounds; Future anti-neoplastic agents; Monoclonal antibodies; Gene therapy for cancer. Practical: Hydrolytic Degradation of Ceftriaxone and Detection of β-Lactam Ring Cleavage Demonstration of Acidic Instability of Benzylpenicillin (Penicillin G) Comparative Stability Study of Azithromycin and Erythromycin Comparing the acid stability of Azithromycin and Erythromycin			
7-12	18	β-lactam antibiotics (penicillins); β-lactamase inhibitors; cephalosporins and monobactams Aminoglycosides and chloramphenicol; tetracyclines; macrolides; Lincomycin and	Antibacterials	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		polypeptides Sulfonamide: chemistry, nomenclature, mechanism of action, resistance, toxicity, side effects, metabolism protein binding, distribution and SAR) products, sulfones Practical: Comparative In Vitro Evaluation of Oral Absorption Potential of Tetracycline Class Antibiotics Demonstration of the Amphoteric Nature of Tetracyclines Simulation of Tetracycline Inactivation by Calcium from Milk and Antacids			
13-14	5	Agents Inhibiting Virus Attachment, Penetration, and Early; Agents Interfering with Viral Nucleic Acid Replication; HIV Protease Inhibitors; HIV Reverse Transcriptase Inhibitors; HIV Integrase	Antivirals	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		Inhibitors; Investigational Antiviral Agents Practical: Effect of pH on the Solubility of Ciprofloxacin and its Clinical Relevance to Crystalluria			
15	2	Biochemical targets for antifungal chemotherapy; Polyene Membrane Disruptors; Ergosterol Biosynthesis Inhibitors; Inhibitors of Cell Wall Biosynthesis —Echinocandins; miscellaneous drugs. Practical: Demonstration of Metal Ion Chelation by Quinolones (e.g., Ciprofloxacin)	Antifungals	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
11. Course Evaluation					
20 Marks Lab Practical					
20 theoretical grades including midterm exam, quizzes and attendance					
60 Final Exam Marks					



Fourth Year- Course Description 2026-2027



12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1) Foye's Principles of Medicinal Chemistry Roche PhD (Author), S. William PhD Zito 7 th Edition PhD by Victoria PhD F., College of Pharmacy, Houston Uni, Texas, USA. 2) Wilson and Gisvolds textbook of organic medicinal and pharmaceutical chemistry, John M. B.; John H.B. (twelfth edition). 3) An Introduction to Medicinal Chemistry 7th Edition by Graham L. Patrick, University of the West of Scotland, UK
Main references (sources)	1) Handbook for Practical Pharmaceutical Chemistry Adopted by the Department
Recommended books and References (scientific journals, reports...)	
Electronic references, websites	



Fourth Year- Course Description 2026-2027



1. Course Name	
Clinical Pharmacy II	
2. Course Code	
444 ACICp2	
3. Semester / Year	
Second Semester / Fourth Stage	
4. Description Preparation Date:	
9-2026	
5. Available Attendance Forms	
On campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theoretical Hours+2 Hours Practical (60) / 3 Units 2	
7. Course administrator's name (if more than one name)	
Theory: Name: Assistant Lecturer Yasser Sabah Email: yassir.sabah@bcms.edu.iq Practical: Name: Lecturer Dr. Humam Tawfiq Hadi Email: humam.hadi@bcms.edu.iq Name: Assistant Lecturer Ameer Ali Kazal Email: ameerali@bcms.edu.iq	
8. Course Objectives	
Course Objectives	• The course provides students with basic knowledge about pathophysiology, symptoms, and treatment goals. In addition to basic knowledge about drug use, pharmacokinetics of drug interactions, dosage calculations, side effects, treatment algorithms and patient awareness. • The following diseases will be addressed: some of (cardiovascular disorders, respiratory disorders, digestive disorders, infectious disorders, rheumatic disorders, endocrine disorders).
9. Teaching and Learning Strategies	
Strategy	Lectures Seminars Simple Quizzes Brainstorming questions
10. Course Structure	



Fourth Year- Course Description 2026-2027



Weeks	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	- Knowledge of the principle of clinical pharmacy and its fields of specialization	Introduction to the concept of clinical pharmacy, its professional activities and responsibilities (including the status of clinical pharmacy in Iraq)	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
2	3	Identify the concept of pharmaceutical care and the procedures necessary to achieve the goals of the therapeutic process	Overview of Pharmaceutical Care Practice (Patient Care Process)	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
3	4	1. Discuss common causes of anemia. 2. Recognize the common signs and symptoms of anemia. 3. Describe the diagnostic assessment required to identify the causes of anemia. 4- Develop a treatment regimen that considers the underlying cause and variables of the patient. 5. Compare and compare oral and	Blood disorders: anemia and sickle cell disease	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		parenteral iron preparations. 6- Explain the optimal use of folic acid and vitamin B12 in patients with large cell anemia. 7. Evaluation of proper use of ibutin and darbebutin in patients with chemotherapy-induced anemia for cancer or chronic kidney disease. 8. Develop a plan to monitor the results of drug therapy for the treatment of anemia. 9. Recognize the common signs and symptoms of sickle cell disease 10. Develop a treatment regimen for sickle cell disease and its complications.			
4	2	1. Setting therapeutic goals based on guidelines for patients with high blood pressure. 2- Identify the underlying causes and factors contributing to the	Hypertension	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		development of hypertension. 3. Describe the appropriate measurement of blood pressure 4- Classification of pressure levels after measurement. 5- Recommending lifestyle modifications. 6- Determine patient-centered drug therapy for individuals with high blood pressure. 7. Identify specific conditions and population groups that require special attention when designing a treatment plan for high blood pressure. 8. Build an appropriate monitoring plan to evaluate the treatment of hypertension			
5	5	1. Identify risk factors for ischemic heart disease 2. Differentiate the pathophysiology of chronic stable angina pectoris	Ischemic heart disease	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		and acute coronary syndrome 3. Identify the symptoms and diagnostic criteria for ischemic heart disease in a particular patient. 4. Compare the diagnostic criteria for ischemic heart disease and acute coronary syndrome. 5. Setting therapeutic goals for stable ischemic heart disease 6. Identify appropriate lifestyle modifications and drug therapy to address each therapeutic goal. 7. Design an appropriate treatment regimen for the management of stable ischemic heart disease based on patient information. Formulate a control plan to evaluate the efficacy and adverse effects of the stable ischemic heart disease drug regimen			
--	--	--	--	--	--



Fourth Year- Course Description 2026-2027



6	2	1. Classification of types of heart failure syndrome Heart failure with low ejection fraction, heart failure with preserved ejection fraction, heart failure with medium-term ejection fracture and heart failure with recovered ejection fraction 2. Differentiate between common underlying causes of heart failure, including ischemic, nonischemic and idiopathic causes. 3. Describe the pathophysiology of heart failure as it relates to neurohormonal activation of the renin-angiotensin-aldosterone system, sympathetic nervous system, and endogenous peptide antivasular systems. 4. Identify signs and symptoms of heart failure and classify a specific patient according	Heart failure	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
---	---	---	---------------	-------------------------------------	---



Fourth Year- Course Description 2026-2027



		to the functional classification of the New York Heart Association and the American College of Cardiology/Heart Failure Stage of the American Heart Association. 5. Discuss and modify treatment goals for patients with acute and/or chronic heart failure. 6. Establish a strategy for the non-pharmacological management of a patient with heart failure that includes patient education. 7. Develop an Evidence-based drug treatment and follow-up plan for patients with chronic heart failure. 8. Design a drug treatment and monitoring plan for a patient with acute heart failure. 9. Formulate a treatment plan for a heart failure patient with preserved ejection			
--	--	---	--	--	--

		fracture			
7	3	1. Identify risk factors for peripheral arterial disease. 2- Explain the role of atherosclerosis in the pathophysiology of peripheral arterial disease. 3- Designing a suitable treatment system for the treatment of peripheral arterial disease.	Peripheral vascular diseases.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
8	1	1. Describe the pathophysiology and clinical symptoms of acute and chronic asthma. 2. Make a list of asthma treatment goals. 3. Identify environmental factors associated with worsening asthma control. 4. Discuss the factors to consider when choosing a patient inhalation delivery device. 5. Recommend an asthma treatment regimen for an adult patient based on symptoms. 6. Compare	Asthma.	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		preferred asthma relief regimens with control systems in children, adolescents and adults. 7- Describe the purpose of an individual asthma action plan.			
9	1	Describe the purpose of an individual asthma action plan. 1- Describe the pathophysiology of COPD. 2- Evaluate the patient for signs and symptoms of COPD. 3- Determine the therapeutic goals for the COPD patient. 4- Designing a suitable maintenance treatment system for COPD based on patient data. 5. Design an appropriate system for the treatment of COPD exacerbation based on patient data. 6. Develop a monitoring plan to evaluate the effectiveness of	Chronic obstructive pulmonary disease	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		drug therapy and the adverse effects of COPD. 7- Formulate an appropriate educational plan for COPD patients			
10	1	1-Discuss the incidence of diabetes. 2- Distinguish between clinical differences in type 1, autoimmune diabetes underlying in adulthood, type 2, and gestational diabetes. 3. List of screening and diagnostic criteria for diabetes. 4. Discuss the therapeutic goals of blood sugar level and blood pressure for diabetics. 5. Recommend non-pharmacological treatments, including meal planning and physical activity, for people with diabetes. 6. Compare oral medications used in the treatment of diabetes by their	Diabetes and diabetic ketoacidosis	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		mechanism of action, time of action, side effects, contraindications and effectiveness. 7. Choose the right insulin therapy based on the onset, peak and duration of the effect. 8. Discuss the signs, symptoms and treatment of hypoglycemia. 9. Define diabetic ketoacidosis and discuss treatment goals. 10- Develop a comprehensive treatment monitoring plan for the diabetic patient based on the patient's factors.			
11	1	1. Recognize the differences between Helicobacter pylori ulcers and nonsteroidal anti-inflammatory drugs, stress-related mucosa damage in terms of risk factors, disease pathogenesis, signs and symptoms, clinical course, and prognosis.	Peptic ulcer disease	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		2. Determine the desired therapeutic outcomes for patients with Helicobacter pylori ulcers causing NSAIDs. 3. Identify an appropriate Helicobacterectomy regimen that considers patient-specific factors and methods to improve adherence to the regimen. 4. Determine the appropriate management of a patient who is taking NSAIDs and at high risk of developing ulcer-related gastrointestinal complications (e.g., gastrointestinal bleeding) or who develops ulcers. 5. Use an algorithm to evaluate and treat a patient with signs and symptoms that indicate an ulcer associated with H. pylori or caused by NSAIDs. Give patient information and the prescribed			
--	--	--	--	--	--



Fourth Year- Course Description 2026-2027



		treatment regimen, develop a control plan for drug therapy to eliminate H. pylori or treat active ulcers caused by NSAIDs or gastrointestinal complications			
12	1	1. Assess risk factors for active tuberculosis infection. 2- Design antimicrobial systems suitable for the treatment of latent tuberculosis infection. 3- Designing an appropriate treatment plan for the active tuberculosis patient. 4- Distinguishing between diagnostic tests used for patients with potential tuberculosis. 5. Determine appropriate surveillance criteria to assess the efficacy and safety of an effective drug regimen for active TB. 6. Describe	Tuberculosis	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		possible adverse reactions associated with TB medications. 7. Identify patients for whom therapeutic drug monitoring may be of value and determine the necessary laboratory monitoring criteria for patients taking anti-TB drugs.			
13	1	1. Discuss the pathophysiology of central nervous system infection and its effect on antimicrobial treatment regimens. 2. Describe the clinical signs, symptoms and symptoms of CNS infection. 3. List the most common pathogens that cause central nervous system infections and identify risk factors for each pathogen. 4. Determine the therapeutic goals of central nervous system infections. 5. Identify primary management	Infectious meningitis	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		strategies for central nervous system infection			
14	1	Lower respiratory tract infection 1-List common pathogens that cause community-acquired pneumonia, ventilator-related pneumonia and hospital-acquired pneumonia 2. Explain the pathophysiology of pneumonia and associated host defenses. 3. List the signs and symptoms associated with community-acquired pneumonia, hospital-acquired pneumonia, and ventilator-related pneumonia. 4. Identify the patient-organism factors required to guide the choice of a specific antimicrobial regimen for the patient individually. 5- Design an appropriate experimental antimicrobial	Respiratory tract infections	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		system based on patient-specific data for an individual with community-acquired pneumonia, hospital-acquired pneumonia, and ventilator-related pneumonia 6- Design an appropriate antimicrobial system based on the data of the patient and the organism. 7- Develop a monitoring plan based on patient information for the patient with one of the three categories of pneumonia. 8. Apply a complete patient care process to care for patients suffering from any type of pneumonia. 9- Formulate appropriate educational information that must be provided to the pneumonia patient. 10- Explain ways to prevent			
--	--	---	--	--	--



Fourth Year- Course Description 2026-2027



		pneumonia by immunization and identify groups of patients suitable to receive different vaccines.			
15	2	1. Describe the epidemiological situation and clinical symptoms of common gastrointestinal infections. 2. Summarize common risk factors associated with the development of gastrointestinal infections. 3. If a patient has a gastrointestinal infection, develop an individualized treatment plan. 4. Determine the effect of widespread antimicrobial resistance on current treatment recommendations for gastrointestinal infections. 5. Discuss the effect of host immunosuppression on the risk of disease complications and treatment strategies	Gastrointestinal infections	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports

		associated with gastrointestinal infections. 6. Educate patients about appropriate prevention measures against gastrointestinal infections, including vaccinations.			
16	1	. Identify the main risk factors for gout in a particular person. 2. Develop a pharmacological treatment plan for patients with acute gouty arthritis or uric acid nephropathy, which includes individual selection of drugs and monitoring their effectiveness and safety. 3. Identify patients who require maintenance treatment for gout and hyperuricemia. 4. Choose the appropriate medication to reduce uric acid levels in the blood in gout patients and develop a plan to monitor efficacy and toxicity.	Gout and hyperuricemia	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		5. Educate patients about appropriate lifestyle modifications to help prevent gouty arthritis attacks. 6. Identify patients at risk of developing tumor lysis syndrome and develop a rational plan for the prevention of this syndrome			
17		Sophan joints 1- Identification of pathophysiological mechanisms and risk factors associated with osteoarthritis. 2. Recognize the clinical manifestations of osteoarthritis. 3. Determine treatment goals for individuals with osteoarthritis. 4. Formulate a rational non-pharmacological plan for patients with osteoarthritis. 5. Recommend a medication plan for the treatment of osteoarthritis, considering the patient's specific factors. 6. Modify the	Arthritis and suppur joints	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		unsuccessful treatment strategy for osteoarthritis. 7. Develop monitoring standards to evaluate the effectiveness of drug therapy and the adverse effects of organic farming. Rheumatoid arthritis 1. Describe the pathophysiology of rheumatoid arthritis, focusing on specific immune components. 2. Discuss comorbidities associated with Rheumatoid arthritis 3. Recognize the typical clinical symptoms of rheumatoid arthritis. 4. Create therapeutic goals for the patient with rheumatoid arthritis. 5. Compare the available drug treatment options and choose the most appropriate regimen for the patient. 6. Propose a			
--	--	--	--	--	--



Fourth Year- Course Description 2026-2027



		patient education plan that includes drug and non-drug therapy Sizes.			
18		1. Identify risk factors that expose patients to osteoporosis. 2. Describe the pathogenesis of fractures. 3. Develop a list of criteria for diagnosing osteoporosis. 4. Recommend appropriate lifestyle adjustments to prevent bone loss. 5. Compare the impact of available treatment options on reducing the risk of fractures. 6. Recommend an appropriate treatment regimen for the osteoporosis patient and develop a monitoring plan for the chosen system.	Osteoporosis and other metabolic bone diseases	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
19		1. Differentiate between the causes and development of infectious endocarditis 2. Determination	Infectious endocarditis	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		of clinical presentation and laboratory evaluation of infectious endocarditis disease 3. Evaluate the diagnostic criteria used to evaluate a patient suspected of having infectious endocarditis. 4. Describe the most likely causative organisms of IE, especially in specific groups of patients. 5. Develop appropriate drug therapy recommendations for patients with infectious endocarditis. 6. Identify appropriate patient groups that require preventive treatment and distinguish between appropriate drug regimens.			
20		1. Make recommendations on antimicrobials for surgical prevention of patients	Surgical antibiotic prophylaxis	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		undergoing surgery considering the type of surgery and the most common organisms involved. 2- Improving the use of antimicrobials and patient outcomes in preventing surgical site infections and preventing the emergence of resistance among bacteria.			
21		1. Determine the diagnostic criteria for macroflora. 2. Interpret the signs and symptoms of urinary tract infections and distinguish between signs and symptoms of upper and lower urinary tract diseases. 3. Identify the organism responsible for most uncomplicated urinary tract infections. 4. Evaluate laboratory tests that help diagnose urinary tract infection patients.	Urinary tract infection	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



		5. Recommend medications, dosage and duration for the prevention of uncomplicated and complex urinary tract infections and experimental treatment. 6. Evaluation and selection of treatment for uncomplicated and complex urinary tract infections based on specific urine culture results and patient characteristics			
11. Course Evaluation					
Midterm Exam + 20 Labs + 60 Final Exams20					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)		Pharmacotherapy: A pathophysiologic approach. Pharmacotherapy: principles and practice. Applied therapeutics. Clinical pharmacy and therapeutics. Pharmacotherapy handbook. ACCP updates in therapeutics.			
Main references (sources)		Pharmacotherapy: A pathophysiologic approach. Pharmacotherapy: principles and practice. Applied therapeutics. ACCP updates in therapeutics.			
Recommended books and references (scientific journals, reports...)		Pharmacotherapy: A pathophysiologic approach. Pharmacotherapy: principles and practice.			
Electronic References, Websites		E-books and review articles			



Fourth Year- Course Description 2026-2027



1. Course Name	
General Toxicology	
2. Course Code	
445 ACIGt	
3. Semester / Year	
2nd semester/ 4th year	
4. Description Preparation Date:	
9-2026	
5. Attendance	
on campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours theoretical + 2 hours practical (60) / 3 units	
7. Course administrator's name (if more than one name)	
Theory: Name: Lecturer Dr. Humam Tawfiq Hadi Email: humam.hadi@bcms.edu.iq Practical: Name: Assistant Lecturer Muhee Nimma Email: muhee.nimma.salman@bcms.edu.iq	
8. Course Objectives	
Course Objectives	1) Explain the concepts and materials of toxicology 2) Explain the mechanism of poisoning 3) Explain signs and symptoms 4) Management and chelating used 5) determine how toxic agents are classified, 6) Exposure characteristics (route, location, duration and frequency)
9. Teaching and Learning Strategies	
Strategy	• Distinguish common concepts in toxicology. • Encourage students to understand the mechanism of toxicity. • Help students diagnose the material and condition. • Carrying out first aid to patients. • Determine how toxic agents are classified.
10. Course Structure	



Fourth Year- Course Description 2026-2027



weeks	Hours	Required Learning Outcomes	Chapter/Unit	Learning method	Evaluation method
1	1	Understand the toxicity of heavy elements,	Heavy metals	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
2	1	Carcinogenic chemicals and their toxicity mechanism	Chemical Carcinogenesis	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
3	1	Nervous system poisoning	CNS toxicity	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
4	1	Clarification of immune system intoxication	Immune toxicity	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
5	1	Clarification of blood toxicity	Blood toxicity	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
6	1	Understand and explain toxicology and how to assess the patient's condition	Introduction to toxicology Evaluation of poisoned patients	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
7	1	Absorption and spread of toxic substances through the intestines and skin and clarify their effects	Absorption and distribution of toxicants through skin and GIT	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
8	1	The role of the pharmacist in Toxicology centers	The role of pharmacists in Toxicology centers	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
9	1	Carcinogens that affect genes and their toxicity	Classes of genotoxic carcinogens	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



10	1	Explanation and clarification of the toxicity of nephron in the kidneys	Specific nephrotoxicant	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
11	1	explain the distribution and elimination of toxic substances by the body,	distribution and elimination	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
12	1	Clarify liver and kidney toxicity	toxic response of kidney toxic response of liver	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports

11. Course Evaluation

20 Marks Lab Practical

20 theoretical grades including midterm exam, quizzes and attendance

60 Final Exam Marks

12. Learning and Teaching Resources

Casarett and Doulls toxicology 8th edition	Required textbooks (curricular books, if any)
Casarett and Doull, Toxicology, the Basic Science of Poisons; Fourth edition. (2021)	Main references (sources)
	Recommended books and references (scientific journals, reports...)
	Electronic references, websites



Fourth Year- Course Description 2026-2027



1. Course Name:	
Industrial Pharmacy I	
2. Course Code:	
446 Phlp1	
3. Semester / Year:	
2nd Semester/4th year	
4. Description Preparation Date:	
9-2026	
5. Available Attendance Forms:	
In-Campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours Theoretical + 2 hours Practical (75) /4 units	
7. Course administrator's name	
Theory: Name: Prof. Dr. Alaa Abdul Hussein Email: alaa.abdulhussein@bcms.edu.iq Practical: Name: Assistant Lecturer Ahmed Abdulameer Email: ahmed_abdulameer.abed@bcms.edu.iq	
8. Course Objectives	
Course Objectives	The course introduces the essential unit operations used in the manufacture of pharmaceutical products. Unit operations including blending, milling, drying, clarification and sterilization will be addressed. Students learn to recognize how the output of one process is the input to the next process, and how deviations can cascade along the production sequence until they cause process failures. The course emphasizes design, scale-up, troubleshooting, and optimization of pharmaceutical unit operations.
9. Teaching and Learning Strategies	
Strategy	Lecturing Homework Quiz Practical laboratory demonstrations, oral exam and practical tests
10. Course Structure	



Fourth Year- Course Description 2026-2027



Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3+2	Introduction to the pharmaceutical process Introduction in industrial pharmacy and pre-formulation	Principles of pharmaceutical processing	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
2	3+2	Principles and importance of fluid mixing in pharmaceutical manufacturing	Fluid mixing. Flow characteristics; mechanisms of mixing; mixing equipment	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
3	3+2	Understanding the parameters that control solid mixing process	Solid mixing theory and particulate solid variables; forces and mechanisms	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
4	3+2	Introduction into milling as a main pharmaceutical unit operation	Milling; pharmaceutical application; size measurement methods; theory and energy of comminution	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
5	3+2	Describing the main equipment; Discussing the main parameters that control this process	Types of mills; factors influencing milling; selection of mill techniques;	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
6	3+2	Introduction into drying as a main pharmaceutical unit operation	Drying: definition purpose Psychrometry (humidity measurement)	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports



Fourth Year- Course Description 2026-2027



7	3+2	Understanding the main theory of drying; Describing the main equipment; Discussing the main parameters that control this process	theory of drying of solids, classification of dryer specialized drying methods	Lectures and practical laboratories	Daily, midterm and final exams, practical exam, reports
8	Mid-term exam				
9	3+2	Introduction into clarification as a main pharmaceutical unit operation	Clarification and filtration: Theory filter media filter aids	Theoretical lectures. Laboratory demonstration .	Paper-based exams
10	3+2	Describing the main equipment; Discussing the main parameters that control this process, addressing the essential needed tests for evaluating the filtration process.	filter selection sterile operations integrity testing equipment and systems (commercial and laboratory)	Theoretical lectures. Laboratory demonstration .	Paper-based exams
11	3+2	Introduction into sterilization as an important pharmaceutical unit operation	Sterilization; validation methods; microbial death kinetics	Theoretical lectures. Laboratory demonstration .	Paper-based exams
12	3+2	Investigating the different sterilization methods	methods of sterilization (thermal and non-thermal mechanisms; evaluation	Theoretical lectures. Laboratory demonstration .	Paper-based exams
13	3+2	Comprehending the main properties and requirements of sterile products	Pharmaceutical dosage forms; sterile products	Theoretical lectures. Laboratory demonstration .	Paper-based exams



Fourth Year- Course Description 2026-2027



14	3+2	Understanding the formulation requirements and quality control testing of sterile products	development; formulation; production; processing; quality control	Theoretical lectures. Laboratory demonstration .	Paper-based exams
15	Course Review				
10. Course Evaluation					
20 M Theoretical assessment. (paper-based mid-term exam + quiz + attendance) 20 M practical assessment (attendance + quiz + practice+ reports) 60 M <u>paper-based theoretical final exam</u> 100 M total					
11. Learning and Teaching Resources					
Required textbooks		Lachman L., Liberman H. and Kanig J.; The Theory and Practice of Industrial Pharmacy; Third Edition			
Main references (sources)		Lachman L., Liberman L. and Schwartz J. Pharmaceutical Dosage Forms: Tablets; Second Edition : Volume I.			
Electronic References, Websites					



Fourth Year- Course Description 2026-2027



1. Course Name					
Communication skills					
2. Course Code					
447 ACICs					
3. Semester / Year					
2nd semester/ 4th year					
4. Description Preparation Date:					
9-2026					
5. Available Attendance Forms					
On campus					
6. Number of Credit Hours (Total) / Number of Units (Total)					
Two theoretical hours (30) / two units					
7. Course administrator's name (if more than one name)					
Name: Prof. Dr. Haydar Al-Tukmagi					
Email: Tukmagi@bcms.edu.iq					
8. Course Objectives					
Course Objectives		Communication skills are one of the tasks of pharmacy care practice and aims to develop a traditional relationship between pharmacists and patients, where information is exchanged, maintained and used to improve patient care during appropriate drug therapy. This course aims to provide the pharmacist with better patient care, focusing on the communication skills needed to build the type of relationship that leads to improved therapeutic outcomes.			
9. Teaching and Learning Strategies					
Strategy		Lectures Seminars Simple quizzes Brainstorming questions Real-time discussions during lectures			
10. Course Structure					
Weeks	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2	1	1- Pharmacists' responsibility in patient care 2. The importance of communication in meeting the	Patient-Centered Communication in Pharmacy Practice	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		responsibilities of caring for your patients 2-What is patient-centered care? 4. Understand the use of the drug from the patient's point of view 5. Encourage a more active role for the patient in therapeutic monitoring 6. Patient-centric view of the medication use process			
2	2	1. Components of the interpersonal communication model 2. Personal responsibilities in the contact form 3. Find the meaning of the message 4. The importance of perception in communication	Principles and elements of interpersonal communication	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



3	2	1. Nonverbal vs. verbal communication 2. Elements of non-verbal communication 3- Distracting non-verbal communication 4. Detecting non-verbal cues in others 5. Dealing with sensitive issues 6. Overcoming non-verbal distractions	Type of non-verbal communication.	Lectures and seminars	Daily, midterm and final exams, reports and seminars
4	2	1- Environmental barriers 2- Personal barriers 3. Administrative constraints 4. Time Barriers	Communication barriers	Lectures and seminars	Daily, midterm and final exams, reports and seminars
5	2	1- Good listening 2. Empathic response 3. Attitudes Behind Empathy 4. Non-verbal aspects of empathy 5. Problems in establishing assistive relationships	Listening and empathic response while communicating.	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



6	2	1. Definition of packages 2- Theoretical foundations 3. Packing Techniques 4. Firmness and patience 5. Packages and other healthcare professionals 6- Firmness and personnel 7. Assertiveness and Employers 8- Assertiveness and colleagues	Emphasis and firmness	Lectures and seminars	Daily, midterm and final exams, reports and seminars
7	2	1. Effective Interview Components 2- Interview as a process 3-Interview in pharmacy practice 4. Conducting interviews and results reported by the patient 5. Documenting interview information 6- Meet him using the phone	Interview & Evaluation	Lectures and seminars	Daily, midterm and final exams, reports and seminars
8	2	1. Misconceptions about the patient's understanding and adherence to medication 2. Techniques to improve patient understanding 3. Techniques for	Helping patients manage therapeutic regimens	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		establishing new behaviors 4. Techniques to facilitate behavior change 5- Theoretical foundations supporting behavior change 6- Apply the principles and strategies of the motivational interview			
9	2	An essential element in providing effective patient counseling and how to provide this counseling	Patient guidance; consultation checklist; point-by-point discussion. Consultation scenario	Lectures and seminars	Daily, midterm and final exams, reports and seminars
10	2	1-Introduction to Drug Safety Issues 2. Types of errors: possible causes and possible solutions 3. General strategies to enhance patient safety when errors occur	Drug safety and communication skills.	Lectures and seminars	Daily, midterm and final exams, reports and seminars
11	2	Communicate with A- Senior Housing B- Weak connector C- Patients with disabilities D. Terminally ill patients E HIV or AIDS patients F. Patients with mental health problems	Strategies to meet specific needs.	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		G- Suicidal patients H-Patients with Reduced Health Knowledge I. Cultural competence J-Carers			
12	2	1- The need to educate children and their parents about medicines 2- The importance of using a patient-centered interaction method 3- Understand the level of cognitive development of the child 4. General principles for communicating with children, infants and pre-school children and empowering them 6. School-age children and adolescents	Communicating with children and the elderly about medications	Lectures and seminars	Daily, midterm and final exams, reports and seminars
13	2	1- Pharmacist roles in cooperative drug therapy management 2. Barriers and facilitators to collaborative partnerships 3. Initial steps to develop cooperative arrangements 4. Building Trust:	Interprofessional communication and collaboration skills	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		The Cornerstone of Successful Collaborative Arrangements 5. Use communication skills to enhance collaboration Relations 6. Six critical behaviors within collaborative partnerships			
14	2	1- Use the Internet 2. Use email in the community 3. Patient Use - Electronic Communication Service Provider 4- Professional use of electronic communications 5. Patient Privacy and System Security Issues 6. Responsibilities and therapeutic relationships 7- Establishing pharmaceutical care services using electronic means of communication 8. Create email message management	Electronic communication in healthcare.	Lectures and seminars	Daily, midterm and final exams, reports and seminars
15	2	This topic explains: 1. Definitions 2- The occurrence of non-compliance and lack of health	Ethical behavior when communicating with patients	Lectures and seminars	Daily, midterm and final exams, reports and seminars



Fourth Year- Course Description 2026-2027



		awareness 3- Consequences of non-compliance and lack of health awareness 4- Reasons for non-compliance with medicines and lack of health awareness 5- Measuring adherence to medicines and health awareness 6- Techniques to help patients improve medication adherence and increase health awareness			
--	--	--	--	--	--

11. Course Evaluation

25 midterm exams + 5 seminars + 70 final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Communication Skills in Pharmacy Practice
Main references (sources)	A Handbook for Teaching Courses in Pharmacy Communications.
Recommended books and references (scientific journals, reports...)	Skills for Communicating with Patients.
Electronic References, Websites	Review Articles