



2nd Year- Course Description 2025-2026



1. Course Name:	
Organic Chemistry II	
2. Course Code:	
212ChPOc2	
3. Semester / Year:	
First semester/ Second stage	
4. Description Preparation Date:	
9-2025	
5. Available Attendance Forms:	
on campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours/week (Theory) , 2hours/ week (Practical) (75 hours) , Total units=4	
7. Course administrator's name (mention all, if more than one name)	
Theory Name: Prof. Ameen Waleed Email: ameen.waleed@bcms.edu.iq Practical: Name: Assistant lecturer Sarmad Sadi Email: sarmad@bcms.edu.iq Name: Assistant lecturer Randa Khalid Email: randakhalid@bcms.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none">• Studying the basics of organic chemistry for some chemical groups that are considered the foundations of the study of pharmacy (such as studying benzene and its derivatives, aldehydes, ketones, carboxylic acids and their derivatives, amines and their derivatives, phenols). Learn their names, properties, interactions, and methods of preparation.• Study methods for the qualitative detection of organic compounds.• Teaching students the safe and correct ways to handle chemicals and glassware.• To know how to detect chemical compound types.



2nd Year- Course Description 2025-2026



9. Teaching and Learning Strategies

Strategy	<ol style="list-style-type: none"> 1) Giving scientific lectures 2) Conduct practical experiments 3) Preparing scientific research individually or collectively 4) Assigning students to homework 5) Assigning the student to prepare seminars and discussions 6) Providing the opportunity for the student to enhance self-education
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-4	21	The economically important aromatic hydrocarbons are benzene, toluene, (ortho, para) xylene. Approximately 35 milli tons of these materials are produced annually. They are obtained from the distillation of coal tar and are used to produce many chemicals and polymers, including styrene, phenol, aniline polyester, and nylon, it is important to study them because they are the key for synthesis of different medications.	Aromatic compounds	Lectures	Quizzes
5-7	12	Many organic medications used in the medical field contain carboxyl groups.	Carboxylic acids and their derivate	Lectures	Oral exams
8-9	5	Their importance comes from their presence in the human body in plants, and nature	Amines and their derivatives	Lectures	Oral discussion
10-13	22	In the chemical industry, ketones and aldehydes find use as reagents, solvents, and starting materials to produce other items. Formaldehyde is	Aldehydes and ketones	Lectures	quizzes



2nd Year- Course Description 2025-2026



		used to preserve biological specimens and also to manufacture polymers such as Bakelite. Ketones have low toxicity and can dissolve numerous chemical substances.			
14-15	5	Plant phenolics are a vital human dietary component and exhibit tremendous antioxidant activity as well as other health benefits.	phenols	Lectures	Oral discussions
11. Course Evaluation					
<ul style="list-style-type: none"> • 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar) • 20 M practical assessment (attendance + quiz + practice+ oral-based exam) • 60 M paper-based theoretical final exam <p>_____ 100 M total</p>					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			*Organic Chemistry by Robert T. Morrison and Robert N. Boyd. *Organic Chemistry by McCurry; 5th ed. Thomason learning; CA,USA; 2000		
Main references (sources)			*Organic Chemistry by Robert T. Morrison and Robert N. Boyd. *Organic Chemistry by McCurry; 5th ed. Thomason learning; CA,USA; 2000		
Recommended books and references (scientific journals, reports...)			Organic Chemistry by Janice Gorzynski Smith, 1 st edition.		
Electronic Reference Websites			https://www.sciencedirect.com/book/9780128128381/organic-chemistry		



2nd Year- Course Description 2025-2026



1. Course Name:	
Microbiology I (Theory and Practical)	
2. Course Code:	
213 ACIMm1	
3. Semester / Year:	
First Semester / Second Year	
4. Description Preparation Date:	
9-2025	
5. Available Attendance Forms:	
On campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours/week (Theory) , 2hours/ week (Practical) (75 hours) , Total units=4	
7. Course administrator's name (mention all, if more than one name)	
Theory: Name: Dr. Zainab Jumaa Qasim, Email: Zainab.jumaa@bcms.edu.iq practical Name: Assistant lecturer Saraha Salih Ahmed Email: sara.saleh.ahmed@bcms.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none">• Understanding bacteria in terms of their presence in the environment and their nutritional requirements for growth and reproduction• Methods of transmission of bacteria and the diseases they cause• Treatments and resistance to antibiotics and environmental factors
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none">• Presentation and recitation• Interactive discussions• Brainstorming• Research and induction
10. Course Structure	



2nd Year- Course Description 2025-2026



Week	Hours	Required Learning Outcomes	Unit or Subject	Learning method	Evaluation method
1	3	The history of microbiology and its importance Anatomy of bacteria, surface appendages, capsule, Bacterial cell wall G+ve & G-ve Cytoplasmic membrane Practical: shapes of bacteria	Introduction to microbiology	Lectures, Discussions, and Reports	Exam and classroom activities
2	3	Physiology of bacterial cells, bacterial growth and bacterial requirement, bacterial growth curve Practical: staining of bacteria	Bacterial growth requirements	=	=
3	3	Genetics definition of nucleic acids. Genetic codes and types of mutations Methods of transferring genetic material, biotechnology Recombinant DNA Practical: Bacterial movement	Bacterial genetics	=	=
3	3	Genetics definition of nucleic acids. Genetic codes and types of mutations Methods of transferring genetic material, biotechnology Recombinant DNA Practical: Bacterial movement	Bacterial genetics	=	=



2nd Year- Course Description 2025-2026



4	3	Bacterial sporulation Practical: staining of spores and its position	Sporulation	=	=
5	3	Sterilization: (chemical + physical methods). Practical: preparation and sterilization of media	Sterilization	=	=
6	3	Chemotherapy (antibiotics, etc.) Practical: isolation of bacterial colonies	Antibiotics	=	=
7	Mid-term examination				
8	3	Pseudomonas and Neisseria Practical: identification of bacterial colonies	Pseudomonas and Neisseria	=	=
9	3	Staphylococcus and Streptococcus Practical: biochemical reaction; oxidase and catalase test	Staphylococcus and Streptococcus bacteria	=	=
10	3	Bacillus bacteria and Vibrio cholera Practical: biochemical reaction; urease activity	Bacillus bacteria and Vibrio cholera	=	=
11	3	Clostridium bacteria Practical: bacterial reaction to citrate	Clostridium bacteria	=	=
12	3	Diphtheria bacteria, acne bacteria, and listeria practical: IMVEC test	Diphtheria bacteria, acne bacteria, and listeria	=	=



2nd Year- Course Description 2025-2026



13	3	Enterobacteriaceae family Practical: identification of lactose fermenter and non- lactose fermenter bacteria	Enterobacteriaceae family	=	
14	3	Infectious spirochete bacteria and salmonella Practical: identification of lactose fermenter and non-lactose fermenter bacteria	Infectious spirochete bacteria and salmonella	=	
15	3	Tuberculosis and leprosy bacteria Practical: antibiotics sensitivity test	Tuberculosis and leprosy bacteria	=	

11. Course Evaluation

- 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar)
 - 20 M practical assessment (attendance + quiz + practice+ oral-based exam)
 - 60 M paper-based theoretical final exam
- _____ 100 M total

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	-A color Atlas of microbiology by Ronald John Olds -Jawetz, Melnick, & Adelberg's. Medical Microbiology 26th ed.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	-Bailey & Scott's Diagnostic Microbiology 14th ed. -Hugo and Russell's Pharmaceutical Microbiology; 8th. ed.
Electronic References, Websites	



2nd Year- Course Description 2025-2026



1. Course Name:	
Physical Pharmacy I (Theory and Practical)	
2. Course Code:	
214 PhPp1	
3. Semester / Year	
First Semester / Second year	
4. Description Preparation Date:	
9-2025	
5. Available Attendance Forms:	
On campus	
6. Number of Credit Hours (Total) / Number of Units (Total):	
3 hours/week (Theory), 2hours/ week (Practical), Total units=4	
7. Course administrator's name (mention all, if more than one name)	
Theory: Name: Assistant lecturer Zainab Abdulmuhsin Radhi Email: zainabradhi@bcms.edu.iq Practical: Name: Assistant lecturer Ruwayda Mohammed Email: ruwayda.mohamd@bcms.edu.iq Name: Assistant lecturer Hussein Ali Email: husseinali@bcms.edu.iq	
8. Course Objectives	
Course Objectives	1) Understand the states of matter, molecular interactions, and phase equilibria, including the phase rule and thermal analysis techniques. 2) Analyze the properties of non-electrolyte solutions, including colligative behavior and methods for molecular weight determination.



2nd Year- Course Description 2025-2026



	<p>3) Study the behavior of electrolyte solutions, applying theories of dissociation, ionic strength, and colligative property expressions.</p> <p>4) Explore solubility and distribution phenomena, focusing on solute-solvent interactions and partitioning between immiscible phases.</p> <p>5) Apply principles of ionic equilibria, acid-base theories, pH calculations, and the effect of ionic strength on solution behavior.</p> <p>6) Understand the formulation and function of buffered and isotonic solutions in maintaining pH and physiological compatibility.</p>
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9. Teaching and Learning Strategies

Strategy	<p>1-Lectures and Presentation</p> <p>2-Discussions</p> <p>3- Laboratory experiments</p> <p>4- Inverted classrooms</p>
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	9	<p>Understand the differences in States of matter</p> <ul style="list-style-type: none"> •Binding forces between molecules •States of matter •The gaseous state •The liquid state •Solids and crystalline state •The liquid crystalline state •The supercritical fluid state •Thermal analysis •Phase equilibria and phase rule •Solid dispersions <p>Practical:</p>	States of matter, binding forces between molecules, (Chapter 2)	<p>- Lectures</p> <p>-White board</p> <p>-Data show</p> <p>-Power point -</p> <p>Explanatory diagrams -</p> <p>Scientific YouTube videos -</p> <p>laboratory experiments</p>	<p>-Written exams</p> <p>- Oral exams -</p> <p>Laboratory reports</p>



2nd Year- Course Description 2025-2026



		<ul style="list-style-type: none"> -Introduction to physical pharmacy -Expression of concentration in pharmaceutical preparations 			
4-5	6	<ul style="list-style-type: none"> •Physical properties of substances •Types of solutions •Concentration expressions •Ideal and real solutions •Colligative properties •Molecular weight determination. <p>Practical: Two-component systems containing liquid phases</p>	Nonelectrolytes (Chapter 5)		
6-7	6	<ul style="list-style-type: none"> •Properties of solutions of electrolytes •Theory of dissociation •Theory of strong electrolytes •Ionic strength •The Debye- Hückel theory •Coefficients for expressing colligative properties <p>Practical: Three-component systems</p>	Electrolyte solutions (Chapter 6)		
8-11	12	<ul style="list-style-type: none"> •Introduction •Solvent-solute interactions •Solubility of liquids in liquids •Solubility of solids in liquids •Determining thermodynamic and kinetic solubility •Poor aqueous solubility •Measuring solubility 	Solubility and distribution phenomena (Chapter 9)		



2nd Year- Course Description 2025-2026



		<ul style="list-style-type: none"> •Distribution of solutes between immiscible solvents Practical: <ul style="list-style-type: none"> -Tie linear for three-component systems -Partition coefficient: Measurements and evaluation Solubility methods			
12-13	6	<ul style="list-style-type: none"> •Introduction •Brønsted–Lowry theory •Ionization and dissociation •Classification of solvents •Lewis electronic theory •Acid-base equilibria •Calculation of pH and acidity constants Practical: Buffer solutions	Ionic equilibria (Chapter 7)		
14-15	6	<ul style="list-style-type: none"> •The buffer equation •Buffer capacity •Buffers in pharmaceutical and biological systems Practical: Determination of solubility product constant of slightly soluble salts	Buffered and isotonic solutions (Chapter 8)		
11. Course Evaluation					
<ul style="list-style-type: none"> • 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar) • 20 M practical assessment (attendance + quiz + practice+ oral-based exam) • 60 M paper-based theoretical final exam _____ 100 M total					
12. Learning and Teaching Resources					



2nd Year- Course Description 2025-2026



Required textbooks (curricular books, if any)	1) Martin's Physical Pharmacy and Pharmaceutical Sciences; 7th edition; 2017. 2) Aulton's Pharmaceutics; The Design and Manufacture of Medicines; 6th edition, 2022.
Main references (sources)	Textbook mentioned above
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	



2nd Year- Course Description 2025-2026



1-Course Name:	
Physiology 1	
2-Course Code:	
215 ACLph1	
3-Semester / Year:	
First Semester / Second year	
4-Description Preparation Date:	
9-2025	
5-Attendance:	
In person attendance	
6-Number of Credit Hours (Total) / Number of Units (Total)	
3 hours/week (Theory) , 2hours/ week (Practical) (75 hours) , Total units=4	
7-Course administrator's name (mention all, if more than one name)	
Theory Name: Assistant prof. Dr. Ahmad Al-Saffar Email: ahmadalsaffar@bcms.edu.iq Name: Assistant lecturer Mohened Mahdi Al-Kaisey Email: mohened@bcms.edu.iq Practical: Name: Assistant lecturer Ibraheem Kais Email: ibraheem.kais0@bcms.edu.iq	
8-Course Objectives	
Course Objectives <ul style="list-style-type: none">• Study the transportation of molecules across cell membrane.• study the physiology of the renal system.• Study the physiology of respiratory system.• Study the physiology of nervous system.• Study the physiology of muscles	
9-Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none">• Using YouTube videos to show some physiological process.• Using some schemes or diagrams from the net



2nd Year- Course Description 2025-2026



	<ul style="list-style-type: none">● Frequent Examination● Using clicker device to achieve sudden exam.				
10- Course structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	Transport system	Transport system	Attendance lectures	examination
3-6	12	Physiology of renal system	Renal system		
7-9	12	Physiology of respiratory system	Respiratory system		
10-12	9	Physiology of nervous system	Nervous system		
13-15	9	Physiology of muscle contraction	Muscle contraction		
11- Course Evaluation					
<ul style="list-style-type: none">• 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar)• 20 M practical assessment (attendance + quiz + practice+ oral-based exam)• 60 M paper-based theoretical final exam <p>_____ 100 M total</p>					
12- Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Ganong's Review of Medical Physiology, 23rd Edition		
Main references (sources)			-----		
Recommended books and references (scientific journals, reports...)			research gate		
Electronic References, Websites			YouTube		



2nd Year- Course Description 2025-2026



1. Course Name:					
Computer Sciences II					
2. Course Code:					
216 PhCs					
3. Semester / Year:					
First semester /Second year					
4. Description Preparation Date:					
9-2025					
5. Available Attendance Forms:					
In-person attendance					
6. Number of Credit Hours (Total) / Number of Units (Total):					
1 hour theory-(Practical) 2hours/ week (45 hours), Total units=2					
7. Course administrator's name (mention all, if more than one name)					
Name: Assistant lecturer Dhiya Ibrahim Salman Email: dhiya.ibrahim.salman@bcms.edu.iq					
8. Course Objectives					
Course Objectives		1) Provide a thorough overview of the fundamental concepts of computer applications. 2) The course covers the use of Microsoft Excel and Google applications in detail.			
9. Teaching and Learning Strategies					
Strategy		1-Lectures and Presentation 2-Discussions 3- Laboratory application 4- Inverted classrooms			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Introduction to Excel,	Introduction to Excel	- Lectures	-Written exams
2	1	Insert tab	Insert tab	-Scientific	- Oral exams
3-4	2	Insert tab	Insert tab	YouTube	-
5	1	Page Layout and Basic Functions	Page Layout and Basic Functions	videos	Laboratory
6	1	Logical Functions	Logical Functions	-Laboratory experiment	reports=



2nd Year- Course Description 2025-2026



7-8	2	Logical Functions	Logical Functions	=	=
9-10	2	Data	Data	=	=
11-10	2	Review and view	Review and view	=	=
12-15	3	Developer	Developer	=	=
11.Course Evaluation					
<ul style="list-style-type: none"> • 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar) • 20 M practical assessment (attendance + quiz + practice+ oral-based exam) • 60 M paper-based theoretical final exam <p>_____ 100 M total</p>					
12.Learning and Teaching Resources					
Required textbooks (curricular books, if any)			1- Microsoft office Professional, BY Linda Foulkes, Senior Editor: Afshaan Khan. 2- Microsoft office Professional, BY Joyce Cox, Jo an Lambert & Curtis Frge		
Main references (sources)					
Recommended books and references (scientific journals, reports...)			Microsoft office Professional 2010, BY Joyce Cox, Jo an Lambert & Curtis Frge		
Electronic References, Websites					



2nd Year- Course Description 2025-2026



1. Course Name	
Baath Regime Crimes in Iraq	
2. Course Code	
217 PhBrc	
3. Semester / Year	
First Semester/Second Year	
4. Description Preparation Date:	
9-2025	
5. Available Attendance Forms	
On campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Two hours (30 hours) / two units	
7. Course administrator's name (if more than one name)	
Name: Assistant Lecturer Mustafa Qasim Mohamed/ Email: mustafaqasim93717@gmail.com	
8. Course Objectives	
Course Objectives	<p>Getting awareness of the crimes of Baath regime Objectives and they should not be concealed legally or legitimately for next generations.</p> <ul style="list-style-type: none">• Showing the deceit of the fallen regime and revealing its evil image and its atrocities committed against its people.• Authenticating the crimes of the Baath regime according to the law of Iraqi supreme court in 2005
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none">• Presentation and presentation• Interactive Discussions• Brainstorming• Research and extrapolation
10. Course Structure	



2nd Year- Course Description 2025-2026



The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Types of international crimes.	Definition of crime linguistically and idiomatically	Lectures and discussions	Theoretical exam and classroom activities
3-4	4	The fundamental rights and human dignity enjoyed by every human being under the provisions of international law and their violation.	Human rights violations	=	=
5-6	4	Levels of Balancing	Psychological crimes and their effects	=	=
7	Midterm Exam				
8-9	4	Human Rights Violations and Baath Party Authority Crimes	Violations of Iraqi laws	=	=
10-11	4	The accusation of planning a coup against anyone who opposes the Baathist regime to purge opponents in the army.	Decisions of political and military violations of the Baath regime	=	=
12-13	4	War and radioactive contamination and mine explosion	Environmental crimes	=	=
14-15	4	The use of internationally prohibited weapons.	Contamination with radioactive materials	=	=



2nd Year- Course Description 2025-2026



11. Course Evaluation

Midterm exam 30 marks

Final semester exam 70 Marks

12. Learning and Teaching Resources

Required textbooks (methodology) if any

Main references (sources)

United Nations reports condemning the Baath regime - human rights violations for the period 1991-2003

Dr. Raed Abis and Dr. Abbas Attia, Publisher Iraqi Center for Documenting Extremist Crimes, First Edition

Recommended books and references
(scientific journals, reports...)

Archive of the Iraqi Center for Documenting Crimes of Extremism at the Abbasid Holy Shrine.

Archive of the Foundation for Political Prisoners.

Electronic References, Websites



2nd Year- Course Description 2025-2026



1. Course Name	
Arabic Language	
2. Course Code	
218 PhArl	
3. Semester/Year	
First Semester/Second Year	
4. Date this description was prepared	
9-2025	
5. Available Forms of Attendance	
In campus	
6. Number of Hours (Total) / Number of Credits (Total)	
Two Hours (30 Hours) / Two Units	
7. Course administrator name (if more than one name mentioned)	
Name: Assistant Lecturer Mustafa Qasim Mohamed / Email: mustafaqasim93717@gmail.com	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none">• Enabling students to learn sentence formation skills and know what wrong sentences produce has an impact on meaning.• Enable students to prepare scientific reports in Arabic
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none">• Presentation and Presentation• Interactive Discussions• Brainstorming• Research and Induction
10. Course Structure	



2nd Year- Course Description 2025-2026



The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method
1	2	- From Surah Al-Baqarah, verses from (260-263) From the hadith of the Prophet: The Messenger of Allah (may Allah's peace and blessings be upon him) said: "I have been sent to perfect the noble morals."	The Qur'an and the Prophet's Hadith	Lectures and Discussions	Theoretical exam and classroom activities
2-3	4	- Poetic selections in the pre-Islamic era - The poem of Antara bin Shaddad: Oh Abel where is the smuggler from the death If God was in heaven, he spent it	Arabic Literature	=	=
4-5	4	- Balance of Accounts - Crowds in Arabic - Attribution of the verb to pronouns - Conduct of verbs in terms of: • Health and illness • Deprivation and increase • Derivatives	Al-Sarff	=	=
6	2	-Alphabets (solar and lunar) - Punctuation Provisions - Rulings on writing the Hamza (the first, the middle and the	Language Skills	=	=



2nd Year- Course Description 2025-2026



		extreme, and the two Hamzas of the connection and the cut)			
7-8	4	<ul style="list-style-type: none"> - Lexical schools The meanings of Western words in the Holy Qur'an, such as the words "Taffah", "Farsha", "Naqira", and relying on the book of vocabulary by Ragheb Al-Isfahani. - The curriculum of the schools (Al-Ain) and (Al-Aasas), and the practice on extracting words - One of the common language mistakes 	Arabic Dictionaries	=	=
6	2	<ul style="list-style-type: none"> - From Surah Al-Hajj from verse (1-5) From the hadith of the Holy Prophet: The Messenger of Allah (may Allah's peace and blessings be upon him) said: "The best of you is the one who learns the Qur'an and teaches it." 	The Holy Qur'an and the Prophet's Hadith	=	=
8	2	<ul style="list-style-type: none"> Seven verses from Ibn al-Rumi's verse: Your enemy is learned from your friend So don't have too many friends - Human values in pre-Islamic poetry - Islam and poetry 	Arabic Literature	=	=



2nd Year- Course Description 2025-2026



9-10	4	<ul style="list-style-type: none"> - Categories of speech and its expressions - The Arabized and the Built / Knowledge and the Denial - The Beginner and the News - Transcripts - Actor and Deputy 	Arabic grammar	=	=
11-15	8	<ul style="list-style-type: none"> - General Introduction to Arabic Rhetoric - Definition of language and idiom - An Introduction to the Definition of Rhetorical Sciences - Statement of its relationship with the Arabic language - Manifestology: (Definition and Types) - Simile: (Definition, Types, and Applications) - Truth and metaphor - Language metaphor (definition, its relations and applications) - Metaphor (definition, types, and applications) - Mental metaphor (its definition, relationships, and applications) - Metonymy (its definition, types, and applications) 	Arabic Rhetoric	=	=



2nd Year- Course Description 2025-2026



		- Common language mistakes			
11. Course Evaluation					
Mid-term exam 20 marks					
Dialogue and Discussion Panels 10 Degrees					
End of Semester Exam 70 Marks					
12. Learning and Teaching Resources					
Required Textbooks (Methodology) if available		1- University Arabic Book for Non-Specialists, written Dr. Abdel Rajhi. 2- Arabic Language Book for Non-Specialization Departments Written Dr. Mohya Hilal.			
Main Reference (s)		Explanation of Ibn Aqeel Part One			
Recommended books and references (scientific journals, reports...)		Dictionaries and dictionaries			
References, Websites					



2nd Year- Course Description 2025-2026



1. Course Name					
Arabic Language					
2. Course Code					
218 PhArl					
3. Semester/Year					
First Semester/Second Year					
4. Date this description was prepared					
9-2025					
5. Available Forms of Attendance					
On campus					
6. Number of Hours (Total) / Number of Credits (Total)					
Two Hours (30 Hours) / Two Units					
7. Course administrator name (if more than one name mentioned)					
Name: Mustafa Qasim Mohamed / Email: mustafaqasim93717@gmail.com					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none"> Enabling students to learn sentence formation skills and know what wrong sentences produce has an impact on meaning. Enable students to prepare scientific reports in Arabic 			
9. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> Presentation and Presentation Interactive Discussions Brainstorming Research and Induction 			
10. Course Structure					
The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method



2nd Year- Course Description 2025-2026



1	2	- From Surah Al-Baqarah, verses from (260-263) From the hadith of the Prophet: The Messenger of Allah (may Allah's peace and blessings be upon him) said: "I have been sent to perfect the noble morals."	The Qur'an and the Prophet's Hadith	Lectures and Discussions	Theoretical exam and classroom activities
2-3	4	- Poetic selections in the pre-Islamic era - The poem of Antara bin Shaddad: Oh Abel where is the smuggler from the death If God was in heaven, he spent it	Arabic Literature	=	=
4-5	4	- Balance of Accounts - Crowds in Arabic - Attribution of the verb to pronouns - Conduct of verbs in terms of: • Health and illness • Deprivation and increase • Derivatives	Al-Sarff	=	=
6	2	-Alphabets (solar and lunar) - Punctuation Provisions - Rulings on writing the Hamza (the first, the middle and the extreme, and the two Hamzas of the connection and the cut)	Language Skills	=	=



2nd Year- Course Description 2025-2026



7-8	4	<ul style="list-style-type: none"> - Lexical schools The meanings of Western words in the Holy Qur'an, such as the words "Taffah", "Farsha", "Naqira", and relying on the book of vocabulary by Ragheb Al-Isfahani. - The curriculum of the schools (Al-Ain) and (Al-Basas), and the practice on extracting words - One of the common language mistakes 	Arabic Dictionaries	=	=
6	2	<ul style="list-style-type: none"> - From Surah Al-Hajj from verse (1-5) From the hadith of the Holy Prophet: The Messenger of Allah (may Allah's peace and blessings be upon him) said: "The best of you is the one who learns the Qur'an and teaches it." 	The Holy Qur'an and the Prophet's Hadith	=	=
8	2	<p>Seven verses from Ibn al-Rumi's verse:</p> <p>Your enemy is learned from your friend</p> <p>So don't have too many friends</p> <ul style="list-style-type: none"> - Human values in pre-Islamic poetry - Islam and poetry 	Arabic Literature	=	=
9-10	4	<ul style="list-style-type: none"> - Categories of speech and its expressions 	Arabic grammar	=	=



2nd Year- Course Description 2025-2026



		<ul style="list-style-type: none"> - The Arabized and the Built / Knowledge and the Denial - The Beginner and the News - Transcripts - Actor and Deputy 			
11-15	8	<ul style="list-style-type: none"> - General Introduction to Arabic Rhetoric - Definition of language and idiom - An Introduction to the Definition of Rhetorical Sciences - Statement of its relationship with the Arabic language - Manifestology: (Definition and Types) - Simile: (Definition, Types, and Applications) - Truth and metaphor - Language metaphor (definition, its relations and applications) - Metaphor (definition, types, and applications) - Mental metaphor (its definition, relationships, and applications) - Metonymy (its definition, types, and applications) - Common language mistakes 	Arabic Rhetoric	=	=



2nd Year- Course Description 2025-2026



11. Course Evaluation

Mid-term exam 20 marks

Dialogue and Discussion Panels 10 Degrees

End of Semester Exam 70 Marks

12. Learning and Teaching Resources

Required Textbooks (Methodology) if available	1- University Arabic Book for Non-Specialists, written Dr. Abdel Rajhi. 2- Arabic Language Book for Non-Specialization Departments Written Dr. Mohya Hilal.
Main Reference (s)	Explanation of Ibn Aqeel Part One
Recommended books and references (scientific journals, reports...)	Dictionaries and dictionaries
References, Websites	



2nd Year- Course Description 2025-2026



1. Course Name:	
Organic Chemistry III	
2. Course Code:	
219 ChPOc3	
3. Semester / Year:	
Second semester/Second year	
4. Description Preparation Date:	
9-2025	
5. Available Attendance Forms:	
on campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2hours/week (Theory) , 2hours/ week (Practical) (60 hours) , Total units=3	
7. Course administrator's name (mention all, if more than one name)	
Theory Name: Prof. Ameen Waleed Email: ameen.waleed@bcms.edu.iq Practical: Name: Assistant lecturer Sarmad Sadi Email: sarmad@bcms.edu.iq Name: Assistant lecturer Randa Khalid Email: randakhalid@bcms.edu.iq	
8. Course Objectives	
Course Objectives	<p>1- Studying the basics of heterocyclic chemistry for some rings containing nitrogen, sulfur and oxygen which are considered the foundations of the study of pharmacy (like studying pyrrole, furan, thiophene, pyridine, quinoline and isoquinoline) and properties, nomenclature, reactions and preparations.</p> <p>2- Studying methods for the qualitative detection of various compounds containing heterogeneous rings, such as drugs and organic compounds.</p> <p>3- Studying the importance of heterocyclic compounds that having numerous applications in pharmaceutical chemistry and play a key role in biochemical functions. A lot of heterocycles are employed in medicine as medication to treat a variety of ailments and injuries.</p>



2nd Year- Course Description 2025-2026



9. Teaching and Learning Strategies

Strategy	<ol style="list-style-type: none">1) Giving scientific lectures2) Conduct practical experiments3) Preparing scientific research individually or collectively4) Assigning students to homework5) Assigning the student to prepare seminars and discussions6) Providing the opportunity for the student to enhance self-education
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	5	Heterocyclic organic compounds naming, classification, properties and chemical structure	Heterocyclic compounds Introduction	Lectures	quizzes
3-5	5	Five-membered heterocyclic organ compounds, sources and preparation	Five heterocyclic compounds, that containing one heteroatom, furan thiophene, and pyrrole.	Lectures	Oral discussion
6-8	5	Five-membered heterocyclic organic compounds, reactions	Five heterocyclic compounds, furan thiophen and pyrrole reactions	Lectures	quizzes
9-10	4	Six-membered heterocyclic organic compounds, naming, sources and preparation, pyridine	Six-membered heterocyclic, introduction	Lectures	Oral discussion
11-13	6	Saturated five-membered heterocyclic organic compounds, sources and preparation	Saturated five-membered heterocyclic organic compounds, introduction	Lectures	quizzes

11. Course Evaluation



2nd Year- Course Description 2025-2026



- 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar)
 - 20 M practical assessment (attendance + quiz + practice+ oral-based exam)
 - 60 M paper-based theoretical final exam
- _____ 100 M total

12. Learning and Teaching Resources

Required textbooks (curriculum books, if any)	*Organic Chemistry by Robert T. Morrison and Robert N. Boyd. *Organic Chemistry by McCurry; 5th ed. Thomson learning; CA,US 2000 *An introduction to the chemistry of heterocyclic compound by Acheson, R. M. latest ed.
Main references (sources)	*Organic Chemistry by Robert T. Morrison and Robert N. Boyd. *Organic Chemistry by McCurry; 5th ed. Thomson learning; CA,U 2000 *An introduction to the chemistry of heterocyclic compound by Aches R. M. latest ed.
Recommended books and references (scientific journals, reports...)	Organic Chemistry by Janice Gorzynski Smith, 1 st edition.
Electronic References, Websites	https://www.sciencedirect.com/topics/chemistry/heterocyclic-compound https://www.uou.ac.in/lecturenotes/science/MSCCH-17/CHEMISTRY%20LN.%203%20HETEROCYCLIC%20COMPOUN-converted%20(1).pdf



2nd Year- Course Description 2025-2026



1. Course Name:	
Microbiology II	
2. Course Code:	
220 ACIMm2	
3. Semester / Year:	
Second semester /Second year	
4. Description Preparation Date:	
9-2025	
5. Available Attendance Forms:	
On campus	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours/week (Theory) , 2hours/ week (Practical) (75 hours) , Total units=4	
7. Course administrator's name (mention all, if more than one name)	
Theory: Name: Dr. Zainab Jumaa Qasim, Email: Zainab.jumaa@bcms.edu.iq practical Name: Assistant lecturer Saraha Salih Ahmed Email: sara.saleh.ahmed@bcms.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none">• Providing students with information about parasitic and viral diseases affecting human health, their most important causes and vectors, and methods of treating and controlling them.• Providing students with basic information about the immune system, its components, and how it works, and discussing the most important disorders of the immune system and the sources of dysfunction that lead to these disorders.
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none">• Presentation and recitation• Interactive discussions• Brainstorming



2nd Year- Course Description 2025-2026



- Research and induction

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or Subject	Learning method	Evaluation method
1	2	Introduction to parasites that infect humans and their classification	Introduction to Parasitology	Lectures, Discussions, and Reports	Exam and classroom activities
	1	innate immunity and describe the most important physical and chemical immune barriers, also clarify the immediate and induced immune response	Innate immunity		
2	1	Description of the pathogenic amoeba (<i>Entamoeba histolytica</i>) practical: fixed slides for pathogenic and non-pathogenic amoeba+ presentation of photographic slides using data-show	Pathogenic amoeba		
	1	Introduction to viruses, viral shape and size	Introduction to Virology		
	1	Cytokines definition, families and function	Immunology / Cytokines		
3	2	Description of gastrointestinal and reproductive systems, tissue flagellates, and ciliates Practical: fixed slides for flagellate + presentation of photographic slides using data-show	Human parasitic flagellates		
	1	Adaptive immune response, T and B cells and their functions	Specific immune response		



2nd Year- Course Description 2025-2026



3	2	Description of gastrointestinal and reproductive systems, tissue flagellates, and ciliates Practical: fixed slides for flagellate + presentation of photographic slides using data-show	Human parasitic flagellates		
	1	Adaptive immune response, T and B cells and their functions	Specific immune response		
4	1	Malaria: life cycle and pathogenesis Practical: fixed slides for plasmodium+ presentation of photographic slides using data-show	Parasite/ malaria		
	1	Structure of viruses, including the basic unit of infection, the gene, the outer envelope, and its functions	Structure of viruses		
	1	Integration of the immune response with both non-specialized and specialized responses	Immune response		
5	2	Comparison between different types of malaria and toxoplasmosis Practical: fixed slides for plasmodium and toxoplasma + presentation of photographic slides using data-show	Blood flagellate		
	1	Basic structure of antibodies, their function and types	Antibodies		
	1	Tapeworms, their life cycle and pathogenesis Practical: fixed slides for tape worms + presentation of photographic slides using data-show	Parasite/ tapeworms		



2nd Year- Course Description 2025-2026



6	1	Describe the different stages of virus reproduction and the accompanying structures produced during replication cycle	Viral reproduction		
	1	Definition of hypersensitivity, its types, and the mechanisms that lead to type 1 and type 2 hypersensitivity	Hypersensitivity reactions		
7	Mid-term examination				
8	1	Tape worms in pigs and tape worms in cows Practical: fixed slides for tape worms: <i>T. saginata</i> (beef tapeworm), <i>T. solium</i> (pork tapeworm) and cyct + presentation of photographic slides using data-show	Parasite/ tape worms		
	1	One-step growth curve, methods of isolating viruses, and studying the most important genetic mutations	Growth curve and gene interaction in viruses		
	1	Mechanics that lead to type III and IV hypersensitivity	Hypersensitivity reactions/ continue		
9	2	Dwarf tapeworms Practical: fixed slides for dwarf worm + presentation of photographic slides using data-show	Parasite/ tape worms		
	1	Definition of tumors, their causes, and the mechanisms that contribute to the growth of tumors	Tumor immunity		
	1	Blood and urinary schistosomiasis, their classification, forms, life cycle,	Parasite/ schistosomias		



2nd Year- Course Description 2025-2026



10		pathology, diagnosis and treatment Practical: fixed slides for egg of Schistosoma and larva + presentation of photographic slides using data-show	is		
	1	A description of the most DNA viruses, important pathogenic families to humans, along with a description of the most important diseases they cause and methods of diagnosis and treatment.	DNA viruses		
	1	How the tumor evades the immune response, as well as the most important immune strategies used in treatments	Tumor immunity/ continue		
11	2	Ascaris nematodes and hookworms, their description, shapes, life cycle Practical: fixed slides for Ascaris and larva + presentation of photographic slides using data-show	Parasites/ nematodes		
	1	Tolerance and autoantigens	Autoimmunity		
12	1	Ascaris nematodes and hookworms, Diseases, diagnostic methods and treatments Practical: fixed slides for egg of Ascaris and larva + presentation of photographic slides using data-show	Parasites/ nematodes continue		
	1	Description of RNA viruses, the most important pathogenic families for humans, along with a description of	RNA viruses		



2nd Year- Course Description 2025-2026



		the most important diseases they cause and methods of diagnosing and treating them.			
	1	Mechanical damage associated with breakdown of tolerance and the presence of autoantibodies	Autoantibodies		
13	3	Pin worms and round worms, their forms, life cycle, pathology, diagnostic methods and treatments Practical: fixed slides for egg of pinworms and roundworms + presentation of photographic slides using data-show	Pin worms and roundworms	=	=
	2	Diseases caused by free- living worms Practical: presentation of photographic slides using data-show for free living worms	Parasite/free living worms		
14	1	Description of RNA viruses, the most important pathogenic families for humans, along with a description of the most important diseases they cause and methods of diagnosis and treating	RNA viruses/continue		
15	3	Elephantiasis and Trichinella worms, their forms, life cycle, pathology, diagnostic methods and treatments Practical: presentation of photographic slides using data-show for <i>Wuchereria bancrofti</i> and Trachnella worms	<i>Wuchereria bancrofti</i> and Trachnella worms	=	=
11. Course Evaluation					



2nd Year- Course Description 2025-2026



- 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar)
 - 20 M practical assessment (attendance + quiz + practice+ oral-based exam)
 - 60 M paper-based theoretical final exam
- _____ 100 M total

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	-Medical Microbiology 24th ed. 2007 by E. Jawetz - Medical parasitology, 5th ed. By Dr. D.R. Arora & Dr. Brij Bala Arora. 2018 Lab manual for practical virology and parasitology, - Atlas of Helminthes and Protozoa.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	



2nd Year- Course Description 2025-2026



1. Course Name:	
Physical Pharmacy II (Theory and Practical)	
2. Course Code:	
221 PhPp2	
3. Semester / Year:	
Second Semester /2 nd year.	
4. Description Preparation Date:	
9/2025	
5. Available Attendance Forms:	
On campus	
6. Number of Credit Hours (Total) / Number of Units (Total):	
3 hours/week (Theory) , 2hours/ week (Practical) (75 hours) , Total units=4	
7. Course administrator's name (mention all, if more than one name)	
Theory: Name: Assistant lecturer Zainab Abdulmuhsin Radhi Email: zainabradhi@bcms.edu.iq Practical: Name: Assistant lecturer Ruwayda Mohammed Email: ruwayda.mohamd@bcms.edu.iq Name: Assistant lecturer Hussein Ali Email: husseinali@bcms.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none">1) Understand complexation phenomena, classification of complexes, and methods used for their analysis.2) Explore the principles of drug diffusion, including Fick's laws, diffusion through membranes, and factors affecting permeability.3) Analyze chemical kinetics of drug degradation and perform stability studies using reaction rate laws and accelerated testing.



2nd Year- Course Description 2025-2026



		4) Study interfacial phenomena , surface tension, spreading, and the role of surfactants in wetting and formulation stability.			
		5) Examine the rheological properties of pharmaceutical systems, including thixotropy and methods of flow characterization.			
		6) Learn about colloidal systems , micromeritics , and polymer science with focus on particle behavior, formulation impact, and pharmaceutical applications.			
9. Teaching and Learning Strategies					
Strategy		1-Lectures and Presentation 2-Discussions 3- Laboratory experiments 4- Inverted classrooms			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	•Classification of complexes •Metal complexes •Organic molecular complexes •Inclusion compounds •Methods of analysis Practical: Solubilization of components of pharmaceutical preparations.	Complexation (Chapter 10)	- Lectures -White board -Data show -Power point - Explanatory diagrams	- Written exams - Oral exams -Laboratory reports
3-4	6	•Introduction •Steady state diffusion •Fick's first law of diffusion •Fick's second law •Diffusion through membranes •Permeability •Diffusion driving forces	Diffusion (Chapter 11)	-Scientific YouTube videos -laboratory experiments	



2nd Year- Course Description 2025-2026



		<ul style="list-style-type: none"> •Lag time •Apparatus and methods for assessing drug diffusion Practical: Solubilization of Aspirin.			
5-6	7	<ul style="list-style-type: none"> •Introduction •Rates, orders and molecularity of reactions •Temperature effects •Other factors effects •Stability of pharmaceuticals •Accelerated stability and stress testing Practical: Surface tension: measurements and calculations	Chemical kinetics and stability (Chapter 14)		
7-8	6	<ul style="list-style-type: none"> •Classification of interfaces •Liquid interfaces •Surface and interfacial tensions •Surface free energy •Measurement of interfacial tension •Spreading coefficient •Adsorption at liquid interfaces •Surface active agents •Systems of Hydrophile–Lipophile Classification •Adsorption at solid interfaces •The solid gas interface •The solid liquid interface •Wetting and wetting agents •Applications of surface-active agents •Foam and antifoaming agents •Electric properties of interfaces Practical:	Interfacial phenomena (Chapter 15)		



2nd Year- Course Description 2025-2026



		Rate kinetics: Application in stability of pharmaceutical stability			
9-10	6	<ul style="list-style-type: none"> •Newtonian systems •Non-Newtonian systems •Thixotropy •Determination of rheological properties •Viscoelasticity •Pharmaceutical areas in which rheology is Significant Practical: Determination of critical micelles concentration	Rheology (Chapter 16)		
11-12	6	<ul style="list-style-type: none"> •Introduction to disperse systems •Types of colloidal systems •Optical properties of colloids •Kinetic properties of colloids •Electrical properties of colloids •Solubilization using colloids •Pharmaceutical applications of colloids Practical: Viscosity: Measurements and calculations	Colloidal dispersions (Chapter 17)		
13-15	10	<ul style="list-style-type: none"> •Particle size and size distribution •Methods of determining particle size •Particle shape and surface area •Methods for determining surface area •Derived properties of powders (porosity, packing arrangements, densities of particles, bulkiness and flow properties) Pharmaceutical polymers (Chapter 21) <ul style="list-style-type: none"> •Introduction (history, general concepts, synthesis) 	Micrometrics (Chapter 19) Pharmaceutical polymers (Chapter 21)		



2nd Year- Course Description 2025-2026



		<ul style="list-style-type: none"> •Copolymers and polymer blends •Thermoplastic and thermoset polymers •Polymer properties (crystalline and amorphous polymers, thermal transitions, glass transition temperature, plasticized polymers, molecular weight, mechanical properties, •Polymers for pharmaceutical applications •Polymers in drug delivery <p>Practical: Determination of particle size by optical microscopy and Sedimentation.</p>			
11. Course Evaluation					
<ul style="list-style-type: none"> • 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar) • 20 M practical assessment (attendance + quiz + practice+ oral-based exam) • 60 M paper-based theoretical final exam <p>_____ 100 M total</p>					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)		1) Martin's Physical Pharmacy and Pharmaceutical Sciences; 7th edition; 2017. 2) Aulton's Pharmaceutics; The Design and Manufacture of Medicines; 6th edition, 2022.			
Main references (sources)		Textbook mentioned above			
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					



2nd Year- Course Description 2025-2026



1. Course Title:	
Physiology II	
2. Course Code	
222 ACIPh2	
3. Semester / Year	
Second Semester / Second Year	
4. Description Preparation Date:	
2-2025	
5. Attendance:	
In person attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours/week (Theory) , 2hours/ week (Practical) (75 hours) , Total units=4	
7. Course administrator's name (mention all, if more than one name)	
Theory Name: Assistant prof. Dr. Ahmad Al-Saffar Email: ahmadalsaffar@bcms.edu.iq Name: Assistant lecturer Mohened Mahdi Al-Kaisey Email: mohened@bcms.edu.iq Practical: Name: Assistant lecturer Ibraheem Kais Email: ibraheem.kais0@bcms.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none">• Study the mechanism of action and regulation of the digestive system• Study of blood function and the ABO system• Study of the mechanism of action and organization of the endocrine system
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none">• Using YouTube to show the functions of some members



2nd Year- Course Description 2025-2026



		<ul style="list-style-type: none">• The use of some charts from outside the prescribed curriculum to explain the mechanisms of work of some tissues• Periodic exams, which are either previously agreed or unannounced			
10. Course Structure					
week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
6-1	28	Study the mechanism of action and regulation of the digestive system	Digestive system regulation	Lectures + daily exams	Lectures + daily exams
7	3	Study of blood functions	Physiological function of Blood		
13-8	22	Study of the physiology and organization of the endocrine system	Physiological study of Endocrine system		
11. Course Evaluation					
Midterm exam 15 marks					
Quizzes and homework 5 marks					
Practical part 20 Marks					
Final semester exam 60 marks					
12. Learning and Teaching Resources					
Required textbooks (methodology, if any)			Ganong's Review of Medical Physiology, 23rd Edition		
Main references (sources)			There isn't any		
Recommended books and references (...scientific journals, reports)					
Electronic References, Websites			research gate YouTube		



2nd Year- Course Description 2025-2026



1. Course Name:	
Pharmacognosy and medicinal plants I	
2. Course Code:	
223 ChPP1	
3. Semester / Year:	
Second semester/ Second year	
4. Description Preparation Date:	
9-2025	
5. Attendance:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours/week (Theory) , 2hours/ week (Practical) (75 hours) , Total units=4	
7. Course administrator's name (mention all, if more than one name)	
Lect. Dr. Haider Mohammed Badee haider.mohammed.badee@bcms.edu.iq Lab instructors: Assist. Lect. Huda Saaran Hosny Hsaaz16@bcms.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none">• This course is intended to study the scope of pharmacognosy medicinal plant terminology,• classification of natural products, pharmacological activities of medicinal plants, quality control, and phytochemistry which include extraction & isolation of active constituents from natural sources.
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none">• Presentation and recitation• Interactive discussions• Brainstorming• Small groups• Research and induction• Flipped rows



2nd Year- Course Description 2025-2026



- Discussions
- Field visits to institutions and entities related to fishing work
- Volunteer work, seminars, workshops and exhibitions

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Pharmacognosy is described as the systematic science of morphological, chemical, and biological properties along with history, cultivation, collection, extraction, isolation, bio assaying, quality control, and preparation of crude drugs of natural origin	General introduction: the scope of pharmacognosy, definitions & basic principles, natural sources of drugs, crude drugs, official & non-official	Attendance	Exam, Oral, Test, Seminar.
2	3		Classification of natural products, plant nomenclature & taxonomy, production of crude drugs: cultivation, collection, drying, storage		
3	3		Pharmacological activities of medicinal plants, adulteration of crude drugs Deterioration of crude drugs		
4	3		Chemistry of natural products Quality control of crude drugs		



2nd Year- Course Description 2025-2026



5	3		Phytochemistry: Extraction of plant materials		
6	3		Separation techniques: introduction, mechanism		
7	3		Chromatography: Introduction, Classification, mechanism		
8	3		Thin layer chromatography		
9	3		Paper chromatography		
10	3		Column chromatography		
11	3		Gas-liquid chromatography		
12	3		Gel filtration, ion exchange, affinity chromatography		
13	3		HPLC,		
14	3		Tissue culture of medicinal plants: introduction & history		
15	3		Laboratory of the plant tissue culture, aseptic technique		
16	3		Application of plant tissue culture, environmental & biological control, plant growth regulator		
11. Course Evaluation					
• 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar)					



2nd Year- Course Description 2025-2026



- 20 M practical assessment (attendance + quiz + practice+ oral-based exam)

- 60 M paper-based theoretical final exam

_____ 100 M total

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Pharmacognosy 9 th edition Varro E.Tyler, Lynn R.Brady.
Main references (sources)	Pharmacognosy 16 th edition Trease &Evans.
Recommended books and references (scientific journals, reports...)	Phytochemical methods 3th edition A guide to modern techniques of plant analysis 1998
Electronic References, Websites	Thin layer chromatography 2 nd edition Egon stahl. 1990



2nd Year- Course Description 2025-2026



1. Course Name					
Arabic Language					
2. Course Code					
224 PhAL					
3. Semester/Year					
Second Semester/Second Year					
4. Date this description was prepared					
9-2025					
5. Available Forms of Attendance					
On campus					
6. Number of Hours (Total) / Number of Credits (Total)					
Two Hours (30 Hours) / Two Units					
7. Course administrator name (if more than one name mentioned)					
Name: Mustafa Qasim Mohamed / Email: mustafaqasim93717@gmail.com					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none"> Enabling students to learn sentence formation skills and know what wrong sentences produce has an impact on meaning. Enable students to prepare scientific reports in Arabic 			
9. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> Presentation and Presentation Interactive Discussions Brainstorming Research and Induction 			
10. Course Structure					
The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method



2nd Year- Course Description 2025-2026



1	2	- From Surah Al-Baqarah, verses from (260-263) From the hadith of the Prophet: The Messenger of Allah (may Allah's peace and blessings be upon him) said: "I have been sent to perfect the noble morals."	The Qur'an and the Prophet's Hadith	Lectures and Discussions	Theoretical exam and classroom activities
2-3	4	- Poetic selections in the pre-Islamic era - The poem of Antara bin Shaddad: Oh Abel where is the smuggler from the death If God was in heaven, he spent it	Arabic Literature	=	=
4-5	4	- Balance of Accounts - Crowds in Arabic - Attribution of the verb to pronouns - Conduct of verbs in terms of: • Health and illness • Deprivation and increase • Derivatives	Al-Sarff	=	=
6	2	-Alphabets (solar and lunar) - Punctuation Provisions - Rulings on writing the Hamza (the first, the middle and the extreme, and the two Hamzas of the connection and the cut)	Language Skills	=	=



2nd Year- Course Description 2025-2026



7-8	4	<ul style="list-style-type: none"> - Lexical schools <p>The meanings of Western words in the Holy Qur'an, such as the words "Taffah", "Farsha", "Naqira", and relying on the book of vocabulary by Ragheb Al-Isfahani.</p> <ul style="list-style-type: none"> - The curriculum of the schools (Al-Ain) and (Al-Basas), and the practice on extracting words - One of the common language mistakes 	Arabic Dictionaries	=	=
6	2	<ul style="list-style-type: none"> - From Surah Al-Hajj from verse (1-5) <p>From the hadith of the Holy Prophet: The Messenger of Allah (may Allah's peace and blessings be upon him) said: "The best of you is the one who learns the Qur'an and teaches it."</p>	The Holy Qur'an and the Prophet's Hadith	=	=
8	2	<p>Seven verses from Ibn al-Rumi's verse:</p> <p>Your enemy is learned from your friend</p> <p>So don't have too many friends</p> <ul style="list-style-type: none"> - Human values in pre-Islamic poetry - Islam and poetry 	Arabic Literature	=	=
9-10	4	<ul style="list-style-type: none"> - Categories of speech and its expressions 	Arabic grammar	=	=



2nd Year- Course Description 2025-2026



		<ul style="list-style-type: none"> - The Arabized and the Built / Knowledge and the Denial - The Beginner and the News - Transcripts - Actor and Deputy 			
11-15	8	<ul style="list-style-type: none"> - General Introduction to Arabic Rhetoric - Definition of language and idiom - An Introduction to the Definition of Rhetorical Sciences - Statement of its relationship with the Arabic language - Manifestology: (Definition and Types) - Simile: (Definition, Types, and Applications) - Truth and metaphor - Language metaphor (definition, its relations and applications) - Metaphor (definition, types, and applications) - Mental metaphor (its definition, relationships, and applications) - Metonymy (its definition, types, and applications) - Common language mistakes 	Arabic Rhetoric	=	=



2nd Year- Course Description 2025-2026



11. Course Evaluation

Mid-term exam 20 marks

Dialogue and Discussion Panels 10 Degrees

End of Semester Exam 70 Marks

12. Learning and Teaching Resources

Required Textbooks (Methodology) if available	1- University Arabic Book for Non-Specialists, written Dr. Abdel Rajhi. 2- Arabic Language Book for Non-Specialization Departments Written Dr. Mohya Hilal.
Main Reference (s)	Explanation of Ibn Aqeel Part One
Recommended books and references (scientific journals, reports...)	Dictionaries and dictionaries
References, Websites	

1. Course Name

Arabic Language

2. Course Code

224 PhAr1

3. Semester/Year

Second Semester / Second Stage

4. Date this description was prepared

9-2025

5. Available Forms of Attendance

On campus

6. Number of Hours (Total) / Number of Credits (Total)

Two Hours (30 Hours) / Two Units

7. Course administrator name (if more than one name mentioned)

Name: Mustafa Qasim Mohamed / Email: mustafaqasim93717@gmail.com

8. Course Objectives



2nd Year- Course Description 2025-2026



Course Objectives		<ul style="list-style-type: none">● Enabling students to learn sentence formation skills and know what wrong sentences produce has an impact on meaning.● Enable students to prepare scientific reports in Arabic			
9. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none">● Presentation and Presentation● Interactive Discussions● Brainstorming● Research and Induction			
10. Course Structure					
The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method
1-2	4	<p>- From Surah Al-Isra', verses from (23-29)</p> <p>From the hadith of the Prophet (peace and blessings of Allaah be upon him) said: "Allah loves if one of you does a deed that he masters it."</p> <ul style="list-style-type: none">● Verses from the poem of Al-Sharif Al-Radi in his mother's lamentation: I will cry if the clouds fall, my crying And I say if the article goes rudimentary	The Qur'an and the Prophet's Hadith	Lectures and Discussions	Theoretical exam and classroom activities
3	2	<p>Dalia Abi Alaa Al-Maari:</p> <p>غَيْرُ مُجْدٍ فِي مَلَّتِي وَاعْتِقَادٍ نَوْحُ بَالِكٍ وَلَا تَرْتُمُ شَادٍ</p> <p>Verses for each:</p> <p>Mr. Al-Jawahiri</p>	Arabic Literature	=	=



2nd Year- Course Description 2025-2026



		B. Al-Sayyab Passages from the Tune of Rain, or a Stranger on the Gulf -Prose Arts			
4-5	4	The present tense verb is his erection and his shoes - Trailers - Installations	Arabic grammar	=	=
6	2	- Provisions for writing T (open and tied) - Provisions for writing the alpha (extended and compartmental) - Writing the الضاد والطاء	Language Skills	=	=
7-8	4	- Language Collection Stages - Dictionaries of words and connotations - One of the common language mistakes.	Arabic Dictionaries	=	=
6	2	- From Surah Yusuf: (1-7) From the hadith of the Prophet: "Do not envy, do not quarrel, do not be angry, do not conspire, do not sell one another for the sale of one another, and be the servants of Allah brothers. The Muslim is the brother of the Muslim, he does not oppress him, he does not fail him, he does not lie to him, he does not despise him. Piety is here – and he points to	The Holy Qur'an and the Prophet's Hadith	=	=



2nd Year- Course Description 2025-2026



		his chest three times – according to a man who is evil to despise his Muslim brother. Every Muslim is forbidden to the Muslim: his blood, his money, and his offering."			
8	2	Verses from Mimiyyah Al- Mutanabi: واحرَّ قَلْبَاهُ مِمَّنْ قَلْبُهُ شَيْمٌ وَمَنْ بِجَسَمِي وَحَالِي عِنْدَهُ سَقَمٌ Verses from Jimiya Ibn al-Farid: مَا يَنْ مَعْتَرِكِ الْأَحْدَاقِ وَالْمُهْجِ Verses for each: A. Mustafa Gamal al-Din (his seer) بغداد ما اشتبكت عليكِ الأعصرُ B. Muhammad Mahdi Al- Jawahiri from a poem: سلامٌ على باسقات النخيل	Arabic Literature	=	=
9-10	4	- Conjugation of nouns A. Noun in terms of reminiscence and feminization B. Noun in terms of abstraction and increase C. Noun in terms of individuals, Deuteronomy, and plural Arabic grammar - Number and its provisions - dependents	Arabic morphology and grammar	=	=



2nd Year- Course Description 2025-2026



11	2	- The curriculum of the schools (AL- Maqyees) and (Al-Sahih), and the practice of extracting words	Arabic Dictionaries		
12-15	6	- The Science of Rhetorical Embellishment and Its Impact on the Eloquence of Speech A- Semantic Embellishments (pun, antithesis, correspondence, sound reasoning, emphasizing praise by juxtaposition with criticism) B- Verbal Embellishments (paronomasia, rhymed prose, quotation, inclusion) - Common Language Mistakes	Arabic Rhetoric	=	=
11. Course Evaluation					
Mid-term exam 20 marks					
Dialogue and Discussion Panels 10 Degrees					
End of Semester Exam 70 Marks					
12. Learning and Teaching Resources					
Required Textbooks (Methodology) if available			1- University Arabic Book for Non-Specialists, written Dr. Abdel Rajhi. 2- Arabic Language Book for Non-Specialization Departments Written Dr. Mohya Hilal.		
Main Reference (s)			Explanation of Ibn Aqeel Part One		
Recommended books and references (scientific journals, reports...)			Dictionaries and dictionaries		



2nd Year- Course Description 2025-2026



References, Websites	
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