Ministry of Higher
Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:Pharm.Chem.
5th Stage:

Course Syllabus

Name of the First Teacher of the Course:Dr.HatmAhmd

Academic Rank: Prof

Degree : PhD

Email:

Name of the Second Teacher of the Course:Dr.MaanAbdulrazaq

Academic Rank: Lecturer

Degree:PhD

Email:

Name of the Third Teacher of the Course:Dr.Kowlahabdulrasol

Academic Rank: Assist prof

Degree:PhD

Email:

Course Title	Advanced Pharmaceutical Analyses				
Academic System	Semester				
Course Objective	Objectives: To study spectrometric methods used for identification and characterization of organic compounds, including UV, IR, MASS and NMR spectroscopy; it enables students to understand the applications of these techniques for qualitative and quantitative analysis of organic compounds.				
Textbooks	v v v				
Reference Books	Spectrometric Identification of Organic Compounds by . Silverstein, Bassler and Morrill; 2. Applications of absorption spectroscopy of organic compounds by Dyer JR. 3. Organic .Chemistry by McMurry; 5thed; Thomason learning CA, USA 2000				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	UV / visible spectroscopy; Sample handling and ;instrumentation Characteristic absorption of organic compounds; Rules for calculation of lambda max and application; Application of UV/visible; spectroscopy; Problems .and solutions	Introduction &demonstration to visible spectrophotometry.	
2	UV / visible spectroscopy; Sample handling and ;instrumentation Characteristic absorption of organic compounds; Rules for calculation of lambda max and application; Application of UV/visible; spectroscopy; Problems and solutions	Absorption spectra of known colored solution.	
3	UV / visible spectroscopy; Sample handling and ;instrumentation Characteristic absorption of organic compounds; Rules for calculation of lambda max and application; Application of UV/visible; spectroscopy; Problems and solutions	Absorption spectra of unknown colored solution.	
4	Infra Red spectroscopy (theory and H-bonding effect; Sampling techniques and interpretation of spectra; Characteristic group frequencies of	Beer's law plot of known solution.	

	organic compounds; Application of IR spectroscopy; Problems .and solutions		
5	Infra Red spectroscopy (theory and H-bonding effect; Sampling techniques and interpretation of spectra; Characteristic group frequencies of organic compounds; Application of IR spectroscopy; Problems and solutions	Beer's law plot of unknown solution.	
6	Infra Red spectroscopy (theory and H-bonding effect; Sampling techniques and interpretation of spectra; Characteristic group frequencies of organic compounds; Application of IR spectroscopy; Problems and solutions	Colorimetric assay of tetracycline (FeCl3), known sample.	
7	H^1 –Nucleomagnetic Resonance (NMR) and C^{13}-NMR spectroscopy; Introduction, the nature of NMR absorption, chemical shifts and factors affecting them, information obtained from NMR spectra, more complex spin-spin splitting patterns, application of H1-NMR spectroscopy; C13-NMR spectroscopy: introduction and characteristics, DEPT C^{13}-NMR spectroscopy.	Colorimetric assay of tetracycline (FeCl3), unknown sample	
8	H^1 –Nucleomagnetic Resonance (NMR) and C^{13}-NMR spectroscopy; Introduction, the nature of NMR absorption, chemical shifts and factors affecting them, information obtained from NMR spectra, more	Colorimetric assay of tetracycline (acid), known sample.	

	complex spin-spin splitting patterns, application of H1-NMR spectroscopy; C13-NMR spectroscopy: introduction and characteristics, DEPT C^{13}-NMR spectroscopy.		
9	H^1 –Nucleomagnetic Resonance (NMR) and C^{13}-NMR spectroscopy; Introduction, the nature of NMR absorption, chemical shifts and factors affecting them, information obtained from NMR spectra, more complex spin-spin splitting patterns, application of H1-NMR spectroscopy; C13-NMR spectroscopy: introduction and characteristics, DEPT C^{13}-NMR spectroscopy.	Colorimetric assay of tetracycline (acid), unknown sample.	
10	H^1 –Nucleomagnetic Resonance (NMR) and C^{13}-NMR spectroscopy; Introduction, the nature of NMR absorption, chemical shifts and factors affecting them, information obtained from NMR spectra, more complex spin-spin splitting patterns, application of H1-NMR spectroscopy; C13-NMR spectroscopy: introduction and characteristics, DEPT C^{13}-NMR spectroscopy.	Colorimetric assay of streptomycin (maltol, known sample).	
11	Mass spectroscopy: Introduction and interpreting Mass spectra; interpreting Mass spectra fragmentation patterns, Mass behavior of some common functional groups.	Colorimetric assay of streptomycin (maltol, unknown sample).	
12	Mass spectroscopy: Introduction and	Colorimetric assay of streptomycin (oxidized, known	

	interpreting Mass spectra; interpreting Mass spectra fragmentation patterns, Mass behavior of some common functional groups.	sample).	
13	elemental microanalysis CHNSO	Colorimetric assay of streptomycin (oxidized, unknown sample).	
14	elemental microanalysis CHNSO	Colorimetric assay of tetracycline (basic, known sample).	
15	elemental microanalysis CHNSO	Colorimetric assay of tetracycline (basic unknown sample).	

Ministry of Higher
Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:Pharm.Chem.
1st Stage:

Course Syllabus

Name of the First Teacher of the Course : Dr.husenhasenhusen

Academic Rank: prof

Degree : PhD

Email:

Name of the Second Teacher of the Course:Dr. kowlaabdalrasol

Academic Rank: Assist Prof

Degree:PhD

Email:

Name of the Third Teacher of the Course: Dr. husennaser

Academic Rank: lecturer

Degree : PhD

Email:

Course Title	*Analytical Chemistry*				
Academic System	Semester				
Course Objective	To provide students with a sound theoretical back ground in chemical principles that is essential to practice chemical analysis. It enables students to understand the importance of judging the accuracy and precision of experimental data and techniques of quantitative analysis, and also to show that theory frequently serves as a useful guide to the solution of analytical problems.				
Textbooks	*Fundamentals of Analytical Chemistry by Stook and West* v				
Reference Books	v *Fundamentals of Analytical Chemistry by Stook and West.* v v				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units.	Demonstration of some laboratory equipments.	
2	The evaluation of analytical data: Definition of terms.	Separation and identification of group 1 cations (individual test).	
3	An introduction to gravimetric analysis: Statistical analysis of data; rejection of data; precipitation methods; gravimetric factor.	Analysis of group 1 cataions mixture.	
4	Buffer solutions: Theory of neutralization titrations of simple system.	Preparation and standardization of an acid.	
5	Theory of neutralization titrations of complex system; Precipitation titrations.	Determination of the percentage of acetic acid.	
6	Calculation of pH in complex system; Volumetric methods based on complex system.	Analysis of sodium carbonate and sodium hydroxide mixture.	
7	Equilibria in oxidation-reduction system; theory of oxidation-reduction titrations.	Determination of chloride by the Mohr method.	
8	Spectrophotometric analysis: An introduction to optical methods of analysis; Methods based on absorption of radiation.	Determination of chloride by the Volhard method.	
9	The scope of applications of gravimetric analysis: Inorganic precipitating agents; organic precipitating agents	Preparation and standardization of 0.1N $KMnO_4$.	
10	An introduction to volumetric methods of analysis:	Determination of ferrous form of iron in Mohr's salt	

	Volumetric calculations; acid-base equilibria and pH calculations.		
11	complex system	Determination of total hardness in tab water.	
12	complex system	Gravimetric determination of Nickel.	
13	complex system	Gravimetric determination of Nickel.	
14	complex system	Gravimetric determination of Mg.	
15	complex system	Gravimetric determination of Ca.	

Ministry of Higher Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:
3th Stage:

Course Syllabus

Name of the First Teacher of the Course: Dr. retasabah

Academic Rank: Assist prof

Degree: PhD

Email:

Name of the Second Teacher of the Course: mazennadem

Academic Rank: lecturer

Degree : MSc

Email:

Name of the Third Teacher of the Course: Dr. raheemjamail

Academic Rank: Assist prof

Degree: PhD

Email:

Course Title	*Inorganic Pharmaceutical Chemistry*				
Academic System	Semester				
Course Objective	To present a review of the principles of inorganic chemistry that applied to medicinal and /or pharmaceutical chemistry. It includes understanding atomic and molecular structures, and explanation of atomic structures and the relationship with binding forces and complexation. It also describes inorganic products used as pharmaceutical preparations or diagnostic tools.				
Textbooks	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA* v				
Reference Books	v *Inorganic Medicinal and Pharmaceutical Chemistry by Block, Roche Soine and Wilson, Latest edition* v				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Atomic and molecular structure/Complexation.	Preparation and standardization of 1N HCl (known sample).	
2	Major intra and extra cellular electrolytes.	Preparation and standardization of 1N HCl (quiz and unknown).	
3	Major physiological ions.	Preparation and standardization of 1N 1NaOH (known sample).	
4	Dentals product	Preparation and standardization of 1N NaOH (quiz and unknown).	
5	Electrolytes used in acid- base balance.	Assay of NaOH solution (known sample).	
6	Physiological acid- base balance.	Assay of NaOH solution (unknown sample).	
7	Essential and trace ions: Iron, copper, sulfur, iodine.	Assay of sodium benzoate (known sample).	
8	Non essential ions: Fluoride, bromide, lithium, gold, silver and mercury.	Assay of sodium benzoate (quiz and unknown).	
9	Gastrointestinal agents.	Assay of Borax (explanation of basic concepts).	
10	Acidifying agents.	Assay of Borax (quiz and unknown).	
12	Antacids.	Assay of citric acid (known sample).	
13	Protective adsorbents.	Assay of citric acid (unknown sample).	
14	Radiopharmaceutical preparations.	Assay of magnesium hydroxide (known sample).	
15	Radio opaque and contrast media.	Assay of magnesium hydroxide (quiz and unknown).	

Ministry of Higher
Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:Pharm.Chem.
2nd Stage:

Course Syllabus

Name of the First Teacher of the Course: Dr. shaker abdalsalumnamaa

Academic Rank: prof

Degree: PhD

Email:

Name of the Second Teacher of the Course: Dr. husamhamza

Academic Rank: Assist. prof

Degree : PhD

Email:

Name of the Third Teacher of the Course: Dr.Huda Salah

Academic Rank: lecturer

Degree: PhD

Email:

Course Title	*Organic Chemistry* II				
Academic System	Semester				
Course Objective	To enable students to understand the chemistry of carbon, and the classification, properties and reactions of organic compounds. It includes understanding the basic structure and properties of organic halides, carboxylic acids, aldehydes, ketones and amines, in addition to the principles and application of stereochemistry on these compounds.				
Textbooks	*1- Organic Chemistry by Robert T. Morrison and Robert N. Boyd.(Latest edition).* *2- Organic Chemistry by Mc Murry; Thomason learning; CA, USA; (Lates*				
Reference Books	*1- Organic Chemistry by Robert T. Morrison and Robert N. Boyd.(Latest edition).* *2- Organic Chemistry by Mc Murry; Thomason learning; CA, USA; (Latest* V				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Aromatic Hydrocarbons (includes benzene, electrophilic aromatic substitution, arenas and their derivatives).	Determination of melting point (Known sample).	
2	Carboxylic acids: properties and reactions.	Determination of melting point (quiz and unknown).	
3	Functional derivatives of carboxylic acids.	Determination of boiling point (known sample).	
4		Determination of boiling point (quiz and unknown).	
5	Amines I and II.	Elemental analysis (explanation of basic concepts).	
6	Aldehydes and ketones (include also aldol and Claisen condensation); Classification, reactions and properties.	Elemental analysis (known quantity and quality sample).	
7	Phenols.	Solution and filtration techniques (explanation of basic concepts).	
8	Aromatic Hydrocarbons (includes benzene, electrophilic aromatic substitution, arenas and their derivatives).	Re-crystallization (known sample).	
9	Carboxylic acids: properties and reactions.	Re-crystallization (quiz and unknown sample).	
10	Functional derivatives of carboxylic acids.	Extraction technique (known sample).	
11		Extraction technique (quiz and unknown).	
12	Amines I and II.	Distillation techniques (known samples).	
13	Aldehydes and ketones (include also aldol and	Distillation techniques (quiz and unknown).	

	Claisen condensation); Classification, reactions and properties.		
14	Phenols.	Sublimation technique (known sample).	
15	Aromatic Hydrocarbons (includes benzene, electrophilic aromatic substitution, arenas and their derivatives).	Sublimation technique (quiz and unknown).	

Ministry of Higher Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:Pharm.Chem.
5th Stage:

Course Syllabus

Name of the First Teacher of the Course: Dr.raheemjameel

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Second Teacher of the Course: Dr. leaqaaabdulratha

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Third Teacher of the Course: Dr. mazanNadm

Academic Rank: Lecturer

Degree: MSc

Email:

Course Title	*Organic Pharmaceutical Chemistry* IV				
Academic System	Semester				
Course Objective					
Textbooks	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA*				
Reference Books	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA* v v v v v				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs.		
2	Types of prodrugs.		
3	Types of prodrugs.		
4	Project.		
5	Chemical delivery systems; Polymeric prodrugs; Types and structure of polymers; Cross-linking reagents		
6	Types of prodrugs.		
7	Types of prodrugs.		
8	Drug targeting		
9	Drug delivery system		
10	Drug delivery system		
11	Drug delivery system		
12	Combinatorial chemistry; Peptides and other linear structures; Drug like molecules; Support and linker; Solution-phase combinatorial chemistry.		
13	Solid support		
14	Detection, purification and analgesics; Encoding combinatorial libraries; High-throughput screening; Virtual screening; Chemical diversity and library design.		
15	Solid support		

Ministry of Higher
Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:Pharm.Chem
4Th Stage:

Course Syllabus

Name of the First Teacher of the Course: Dr. Leaqaaabdurathraheem

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Second Teacher of the Course: Dr. raheemjameel

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Third Teacher of the Course: Mazannadeam

Academic Rank: lecturer

Degree: MSc

Email:

Course Title	*organic Pharmaceutical Chemistry* II				
Academic System	Semester				
Course Objective	The course is devoted to the discovery and development of new agents for treating diseases, and enables translating the drug structural formula into therapeutic effect. Additionally, it focuses on the methods of preparation for some pharmaceutical agents				
Textbooks	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA*				
Reference Books	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA*				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Cholinergic agonists;	Preparation of salicylic acid.	
2	Cholinergic agonists; stereochemistry and structure-activity relationships (SAR); products; cholinesterase inhibitors.	Re-crystallization of salicylic acid.	
3	Cholinergic blocking agent; structure-activity relationships (SAR); Solanaceous alkaloid and analogues; synthetic cholinergic blocking agents and products; ganglionicblocking agents (neuromuscular blocking agents).	Synthesis of aspirin.	
4	Analgesic agents (SAR of morphine, SAR of meperidine type molecules; SAR of methadone type compounds; N-methylbezomorphans, antagonist type analgesics in benzomorphans).	Re-crystallization of aspirin.	
5	Cholinergic blocking agent; structure-activity relationships (SAR); Solanaceous alkaloid and analogues; synthetic cholinergic blocking agents and products; ganglionicblocking agents (neuromuscular blocking agents	Assay of aspirin (known sample).	
6	Analgesic agents (SAR of morphine, SAR of meperidine type molecules; SAR of methadone type compounds; N-methylbezomorphans, antagonist type analgesics in benzomorphans	Assay of aspirin (unknown sample).	
7	Analgesic receptors, endogenous opioids; Products; Antitusive agents; Anti-inflammatory analgesics.	Preparation of nitrobenzene.	
8		Preparation of aniline.	
9		Preparation of acetanilide.	
10	Adrenergic agents (Adrenergic neurotransmitters); Adrenergic	Re-crystallization of acetanilide.	

	receptors; Drugs affecting Adrenergic neurotransmission; Sympathomimetic agents; Adrenergic receptor antagonists.		
11		Chlorosulfonation of acetanilide.	
12	CNS depressant; Benzodiazepines and related compounds; Barbiturates; CNS depressant with skeletal muscle relaxant properties; Antipsycotics; Anticonvulsants.	Amination of *p*-chlorobenzene sulfonyl chloride.	
13	CNS depressant; Benzodiazepines and related compounds; Barbiturates; CNS depressant with skeletal muscle relaxant properties; Antipsycotics; Anticonvulsants.	Hydrolysis of *p*-chlorobenzene sulfonyl chloride to sulfanilamide.	
14	Steroid hormones	Assay of sulfa drugs (known sample).	
15	Steroid hormones	Assay of sulfa drugs (unknown sample).	

Ministry of Higher Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:Pharma.Chem.
Stage: 4th

Course Syllabus

Name of the First Teacher of the Course: Dr. Raheem Jameel

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Second Teacher of the Course: Dr. retasabah

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Third Teacher of the Course: Dr. Leaqaaabduratha

Academic Rank: Assist. prof

Degree: PhD

Email:

Course Title	Organic Pharmaceutical Chemistry III				
Academic System	Semester				
Course Objective	To enable understanding mechanisms of drug action, including antibacterial, antifungal and antiviral agents, at molecular level, and the role of medicinal chemistry in the discovery and development of synthetic therapeutic agents. It also enables students to understand the concept of structure-activity relationship and its application in design and synthesis of new chemotherapeutic agents and hormone derivatives with potential biological activity.				
Textbooks	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA* v				
Reference Books	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA* v				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	β-Lactam antibiotics (Penicillins); β-Lactamase inhibitors; Cephalosporins and Monobactams.	Cannizaro reaction (part I).	
2	Aminoglycosides and Chloramphenicol; Tetracylines; Macrolides; Lincomycins and Polypeptides; Antiviral agents (properties of viruses, viral classification, products).	Cannizaro reaction (part II).	
3	Sulfonamides (chemistry, nomenclature, mechanism of action, resistance, toxicity, side effects, metabolism, protein binding, distribution and SAR); products; Sulfones.	Re-crystallization of benzoic acid.	
4	Anti-neoplastic agents: Alkylating agents; Antimetabolites; Antibiotics; Plant products; Miscellaneous compounds.	Assay of ascorbic acid (known sample).	
5	Hormones and related compounds; Future anti-neoplastic agents; Monoclonal antibodies; Gene therapy of cancer.	Assay of ascorbic acid (unknown sample).	
6	β-Lactam antibiotics (Penicillins); β-Lactamase inhibitors; Cephalosporins and Monobactams.	Synthesis of Phenol.	
7	Aminoglycosides and Chloramphenicol; Tetracylines; Macrolides; Lincomycins and Polypeptides; Antiviral agents (properties of viruses, viral classification, products).	Assay of phenol (known sample).	
8	Sulfonamides (chemistry, nomenclature, mechanism of action, resistance, toxicity, side effects, metabolism, protein binding, distribution and SAR); products; Sulfones.	Assay of phenol (unknown sample).	

9	Anti-neoplastic agents: Alkylating agents; Antimetabolites; Antibiotics; Plant products; Miscellaneous compounds.	Synthesis of chlorbutanol.	
10	Hormones and related compounds; Future anti-neoplastic agents; Monoclonal antibodies; Gene therapy of cancer.	Synthesis of paracetamol.	
11	β-Lactam antibiotics (Penicillins); β-Lactamase inhibitors; Cephalosporins and Monobactams.	Cannizaro reaction (part I).	
12	Aminoglycosides and Chloramphenicol; Tetracylines; Macrolides; Lincomycins and Polypeptides; Antiviral agents (properties of viruses, viral classification, products).	Cannizaro reaction (part II).	
13	Sulfonamides (chemistry, nomenclature, mechanism of action, resistance, toxicity, side effects, metabolism, protein binding, distribution and SAR); products; Sulfones.	Re-crystallization of benzoic acid.	
14	Anti-neoplastic agents: Alkylating agents; Antimetabolites; Antibiotics; Plant products; Miscellaneous compounds.	Assay of ascorbic acid (known sample).	
15	Hormones and related compounds; Future anti-neoplastic agents; Monoclonal antibodies; Gene therapy of cancer.	Assay of ascorbic acid (unknown sample).	

Ministry of Higher
Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:Pharm.Chem
1st Stage:

Course Syllabus

Name of the First Teacher of the Course: Dr. MontherAbduljalel

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Second Teacher of the Course: Dr. HusamHmzah

Academic Rank: Assist. Prof

Degree: PhD

Email:

Name of the Third Teacher of the Course: Dr. Huda Salah

Academic Rank: lecturer

Degree: PhD

Email:

Course Title	Organic Chemistry I				
Academic System	Semester				
Course Objective	To enable students to understand the chemistry of carbon, and the classification, properties and reactions of organic compounds. It includes understanding the basic structure and properties of alkanes, alkenes and alkynes, in addition to the principles of stereochemistry and features of aromatic compounds.				
Textbooks					
Reference Books	.Organic Chemistry by Robert T. Morrison and Robert N. Boyd Organic Chemistry by McCurry; 5th ed. Thomason learning; .CA,USA; 2000				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Introduction.	Determination of melting point (Known sample).	
2	Alkanes and methane.	Determination of melting point (quiz and unknown).	
3	Alkenes I and II	Determination of boiling point (known sample).	
4	Alkynes and dienes.	Determination of boiling point (quiz and unknown).	
5	Stereochemistry I & II	Elemental analysis (explanation of basic concepts).	
6	Alcohols and ethers.	Elemental analysis (known quantity and quality sample).	
7	Alkyl halides.	Solution and filtration techniques (explanation of basic concepts).	
8	Cycloalkanes.	Re-crystallization (known sample).	
9	Introduction.	Re-crystallization (quiz and unknown sample).	
10	Alkanes and methane.	Extraction technique (known sample).	
11	Alkenes I and II	Extraction technique (quiz and unknown).	
12	Alkynes and dienes.	Distillation techniques (known samples).	
13	Stereochemistry I & II	Distillation techniques (quiz and unknown).	
14	Alcohols and ethers.	Sublimation technique (known sample).	
15	Alkyl halides.		

Ministry of Higher Education
And Scientific Research
University of Basrah

College of Pharmacy
Department:Pharm.Chem
2nd Stage:

Course Syllabus

Name of the First Teacher of the Course: Dr. Shaker Abdulsalm

Academic Rank: Prof

Degree: PhD

Email:

Name of the Second Teacher of the Course: Dr. husamhamza

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Third Teacher of the Course: Dr. montherabduljalel

Academic Rank: Assist. Prof

Degree:PhD

Email:

Course Title	Organic Chemistry III				
Academic System	Semester				
Course Objective	To teach students the principles of heterocyclic chemistry including the fundamental principles and the features, classes and reactions of heterocyclic compounds; it enable students to apply these principles in complicated reactions that involve heteroatoms.				
Textbooks					
Reference Books					
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Heterocyclic system: Classes of heterocyclic systems; general structures; properties; Occurrence in nature and in medicinal products.	Determination of solubility class (known sample).	
2	Five-membered ring heterocyclic compounds: pyrrole; furan and thiophen.	Determination of solubility class (quiz and unknown).	
3	Source of pyrrole, furan and thiophen.	Identification of alcohols (known sample, quiz and unknown).	
4	Electrophilic substitution in pyrrole, furan and thiophen: Reactivity and orientation.	Identification of phenols (known samples).	
5	Six-membered ring heterocyclic compounds: Structure & reactions of pyridine.	Identification of phenols (quiz and unknown).	
6	Saturated five-membered heterocyclic compounds.	Identification of aldehydes and ketons (explanation of concepts and quiz).	
7	Heterocyclic of five & six member rings with two & three heteroatoms.	Identification of aldehydes and ketons (known sample).	
8	Heterocyclic system: Classes of heterocyclic systems; general structures; properties; Occurrence in nature and in medicinal products.	Identification of aldehydes and ketons (quiz and unknown).	

9	Five-membered ring heterocyclic compounds: pyrrole; furan and thiophen.	Identification of carboxylic acid (explanation of concepts).	
10	Source of pyrrole, furan and thiophen.	Identification of carboxylic acid (known sample).	
11	Electrophilic substitution in pyrrole, furan and thiophen: Reactivity and orientation.	Identification of carboxylic acid (quiz and unknown).	
12	Six-membered ring heterocyclic compounds: Structure & reactions of pyridine.	Salts of carboxylic acids (known sample).	
13	Saturated five-membered heterocyclic compounds.	Salts of carboxylic acids (quiz and unknown).	
14	Heterocyclic of five & six member rings with two & three heteroatoms.	Classification of reactions of amines (known sample).	
15	Heterocyclic system: Classes of heterocyclic systems; general structures; properties; Occurrence in nature and in medicinal products.	Classification of reactions of amines (quiz and unknown).	

Ministry of Higher Education
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University of Basrah

College of Pharmacy
Department:Pharm.Chem
3rd Stage:

Course Syllabus

Name of the First Teacher of the Course: Dr. Reta Sabah

Academic Rank: Assist. Prof

Degree: PhD

Email:

Name of the Second Teacher of the Course: Dr. Raheem Jameel

Academic Rank: Assist. prof

Degree: PhD

Email:

Name of the Third Teacher of the Course: MazenNAdam

Academic Rank: lecturer

Degree: MSc

Email:

Course Title	*organic Pharmaceutical Chemistry* I				
Academic System	Semester				
Course Objective	To enable understanding mechanisms of drug action at molecular level, and the role of medicinal chemistry in the discovery and development of synthetic therapeutic agents. It also enables students to understand the concept of structure-activity relationship and its application in design and synthesis of new .compounds or derivatives				
Textbooks	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA*				
Reference Books	*Wilson and Gisvold; Textbook of Organic medicinal and Pharmaceutical chemistry; Delgado JN, Remers WA*				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	15	5	5	50
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information					

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Drug distribution.	Preparation and standardization of 0.1N KMnO4 (known sample).	
2	Acid- base properties.	Preparation and standardization of 0.1N KMno4 (quiz and unknown).	
3	Statistical prediction of pharmacological activity.	Assay of hydrogen peroxide solution (known sample).	
4	QSAR models.	Assay of hydrogen peroxide solution (quiz and unknown sample).	
5	Molecular modeling (Computer aided drug design).	Assay of ferrous sulfate (known sample).	
6	Drug receptor interaction: force involved.	Assay of ferrous sulfate (unknown sample).	
7	Steric features of drugs.	Preparation and standardization of 0.1Na2S2O4 solution (known sample).	
8	Optical isomerism and biological activity.	Preparation and standardization of 0.1Na2S2O4 solution (quiz and unknown sample).	
9	Calculated conformation.	Assay of copper sulfate (known sample).	
10	Three- dimensional quantitative structure activity relationships and databases.	Assay of copper sulfate (unknown sample).	
11	Isosterism.	Assay of Chlorinated Lime (known sample).	
12	Drug-receptor interaction and subsequent events.	Assay of Chlorinated Lime (quiz and unknown).	
13	General pathways of drug metabolism: Sites of drug biotransformation; Role of cytochrome P450 mono-oxygenases in oxidative biotransformation; Oxidative reactions; Reductive reactions; Hydrolytic reactions; Phase II reactions.	Preparation and assay of Lugol's Solution (known sample).	

14	Factors affecting drug metabolism.	Preparation and assay of Lugol's Solution (quiz and unknown).	
15	Drug distribution.	Assay of Alum (unknown sample).	