

Ministry of Higher Education
And Scientific Research
University of Basrah



College of Pharmacy
Department:
Pharmacognosy
Stage: **First**

Course Syllabus

Name of the First Teacher of the Course: Dr. Ebtihal Handhal

Academic Rank: PhD in Medical Physics

Degree: Assist prof

Email: ebtihalatememe@gmail.com

Name of the Second Teacher of the Course:

Academic Rank:

Degree:

Email:

Name of the Third Teacher of the Course:

Academic Rank:

Degree:

Email:

Course Title	Computer Sciences				
Academic System	Semester				
Course Objective	Gives students the ability to deal with the concept of computer science, emphasizes the knowledge and skill required to efficiently discharge the duties and responsibilities of the pharmacist. The course deals with the concept of basic computer and application of it in human life and medical field. Upon completion of the course students will be able to understand the computer terminology and abbreviations used to describe the lecture, and the application programming languages.				
Textbooks	Pat Coleman and Peter Dyson, Mastering Internet Windows, 29th ed., Sybex, 1997 .				
Reference Books	Romanoff M (Ed), Microsoft 2000 complete, Sybex, 2000.				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	10	10	0	50
Additional Information	This course given in the first semester of the first year in two hours of theory and two hours practical laboratory work per week .				

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	General concept: Information technology (IT)	Microsoft Word applications	1 hours
2	Computer systems (hardware, software, user); types of computers; major parts of the computer	Microsoft Word applications (quiz)	2 hours
3		Microsoft Excel applications	
4	Memory, storage media and performance: Memory; kind of memory) RAM, ROM, cache memory, flash memory); data representation in memory; storage devices (secondary storage); kind of storage devices; computer performance.	Microsoft Excel applications (quiz)	6 hours
5		Application of programs for statistical evaluation of data.	
6		Application of programs for statistical evaluation of data. (quiz)	
7	Computer software: Software (system software, application software;(programming languages;	Basics for chemical and biological drawings.	hours ٦

	<p>generation of programming languages (machine language, assembly language, high level language, application generators, objective oriented language); compiler and interpreters; operating systems (O.S); function and type of O.S; type of software according to source; (commercial, shareware, freeware and public domain); interface, multimedia; system development.</p>		
8		Basics for chemical and biological drawings. (quiz)	
9			
10	<p>Data Communication and network: Data communication; work group computing; type of networks; local area network (LAN); wide area network (WAN); WAN Devices (HUB, router, get way, bridge, repeater); networks topologies; data communication hardware;</p>		5 hours

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College of Pharmacy
Department:
pharmacognosy
Stage: **first**

Course Syllabus

Name of the First Teacher of the Course: Saha Shayal

Academic Rank: PhD in medical Physics

Degree: Lecturer

Email:

Name of the Second Teacher of the Course: Yousif Naeem hamed

Academic Rank : PhD

Degree: prof.

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Name of the Third Teacher of the Course: Rana Hassan

Academic Rank: Master of Mathematics science

Degree: Assistant Lecturer

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Course Title	Mathematics and Biostatistics				
Academic System	Semester				
Course Objective	Gives students the ability to deal with the concept of Mathematics and Statistic, emphasizes the knowledge and skill required to efficiently discharge the duties and responsibilities of the pharmacist. The course deals with the concept of basic Mathematics and application of Biostatistics in the medical field. Upon completion of the course students will be able to understand the applications of statistics in medical field.				
Textbooks	Finny RI, Thomas GB (Eds.); Calculus and Analytical Geometry.				
Reference Books	Daniel WW (ED.), Biostatistics basic Concepts and Methodology for the Health Science, 4th ed ,.				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	30	--	--	--	70
Additional Information	This course given in the first semester of the first year in three hours of theory work per week .				

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Mathematics: General concepts; coordinate and graph in plane; inequality; absolute value or magnitude; function and their graphs; displacement function; slope and equation for lines.		6 hours
2			
3	Limits and continuity: Limits; theorem of limits; limit involving infinity; continuity; continuity conditions.		4 hours
4			
5	Derivatives: Line tangent and derivatives; differentiation rules; derivative of trigonometric function; practice exercises.		6 hours
6			
7	Integration: Indefinite integrals; rules for indefinite integrals; integration		6 hours

	formulas for basic trigonometric function; definite integrals; properties of definite integrals; practice exercises.		
8			
9	Biostatistics: General concepts of statistics; statistical methods; statistical theory; applied statistics; statistical operations.		6 hours
10			
11	Probability concepts: Properties of probability; Set theory and set notation (basic notation); counting techniques- permutations and combinations; calculating the probability of an events; probability distribution of discrete variable; binomial distribution, Poisson distribution; continues probability distribution and normal distribution, review questions and exercises.		3 hours
12	The concept of central tendency:		3 hours

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College of Pharmacy
Department:
Pharmacognocny , medical
plants and allied sciences
Stage: First

Course Syllabus

Name of the First Teacher of the Course: Suha Shayal Abdul-Hassan

Academic Rank: Lecturer

Degree: PH.D

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Name of the Second Teacher of the Course: Dr. Ebtihal Handha

Academic Rank: Assist. prof

Degree: PhD in medical Physics

Email:

Name of the Third Teacher of the Course:

Academic Rank:

Degree:

Email:

Course Title	Medical physics				
Academic System	√ Semester				
Course Objective	Gives students the ability to deal with the concepts of physics, emphasizes the knowledge and skills required to efficiently discharge the duties and responsibilities of the pharmacist. The course deals with the concept of basic physics and application of physics in the medical field. Upon completion of the course the describe the lecture, and the application in medical field.				
Textbooks	<ul style="list-style-type: none"> ❖ Medical Physics ❖ Physics for Biology and Medical Students, 2nd ed. 				
Reference Books	<ul style="list-style-type: none"> ❖ Physical Pharmacy and Pharmaceutical Sciences, 5thed 				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	20%	25%	5%	-	50%
Course Assessment for Annual System (100%)	First Term	Midterm Exam	Second Term	Lab Work	Final Examination
Additional Information	The module is given on the second semester for the first year student in two hours of theory and two hours practical laboratory work per week.				

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	General concepts: Method of physics and standards; thermodynamics system and system properties; conservation of energy principle; application of thermodynamics; the Zeroth law.	Explain how to graph and make laboratory report.	2 hours
2	Pressure; temperature and temperature scales; equation of state; ideal gas and real gas.	Measurement of viscosity of liquids.	2 hours
3	General law of gases; equilibrium and types of equilibrium; compressibility factor, coefficient of volume expansion, elastic coefficient.	Ostwald's Viscometer: find viscosity of unknown; find the molecular weight; find concentration of unknown substance.	2 hours
4	Heat and energy; work and mechanical forms of work; power; the 1 st law of thermodynamics; Boyles and Charles law.	Measuring surface tension (by capillary rise method and travelling microscope).	2 hours
5	The 2 nd law of thermodynamics; reversible and irreversible process; entropy and enthalpy.	Measuring surface tension (differential height capillary method).	2 hours
6	Heat capacity and adiabatic process; the relation between pressure, volume, and temperature in adiabatic process.	Density of liquid.	2 hours
7	امتحان نظري		
8	Fundamental of physics: Kinetic theory of a gas; electromagnetic waves; Maxwell equations.	Boyle's Law.	2 hours
9	physical optics.	Decay curve and half-life.	2 hours

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College of Pharmacy
Department:
Pharmacognosy
Stage: 2nd

Course Syllabus

Name of the First Teacher of the Course: Dr. Ula Al-Mousawi

Academic Rank: PhD. in plan Chemotaxonomy
Degree: lecturerur

Email: ulanoor@yahoo.com

Name of the Second Teacher of the Course: Sabaa Ali Mohameed

Academic Rank: MSc. in Biotechnology

Degree: lecturer

Email:

Name of the Third Teacher of the Course:

Academic Rank:

Degree:

Email:

Course Title	Pharmacognosy I				
Academic System	Semester				
Course Objective	This course is intended to study the scope of pharmacognosy, Medicinal plant nomenclature, classification of natural products, phytochemistry which include extraction and isolation of active constituents from natural sources				
Textbooks	Robbers JE, Speedie MK, Tyler VE (Eds) Trease and Evans Pharmacognosy; 15th ed., 2000				
Reference Books	Pharmacognosy and Pharmacobiotechnology; the latest edition				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	10	10	5	50
Additional Information	This course given in the second semester of the second year in three hours of theory and two hours practical laboratory work per week.				

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	General Introduction	Micro measurement and magnification	
2	Drugs from natural sources, crud drugs, official and non-official drugs	Microscopical identification of crude drugs.	
3	Classification of natural products	Microscopical identification of cell contents	
4	Plant nomenclature and taxonomy	Extraction techniques (part 1)	
5	Production of crude drugs: Cultivation, collection, drying and storage	Extraction techniques (part 2)	
6	Deterioration of crude natural products	Separation techniques (par1 1)	
7	Quality control: Evaluation of natural products; macroscopical ;evaluation	Separation techniques (part 2)	
8	Quality control: physical evaluation; chemical evaluation; biological evaluation; spectroscopical evaluation.	Chromatography (par1 1)	
9	Phytochemical investigation of herbal products:.	Chromatography (par1 2)	
10	Extraction of the plant material; Separation and isolation of constituents; characterization of the isolated compounds	Paper chromatography (circular paper chromatography)	

11	Separation technique: ;Introduction	Paper chromatography (horizontal paper chromatography)	
12	Mechanisms of separation and classification based on the type of technique; ;paper chromatography	TLC on microscope slides. (part 1)	
11	Thin layer chromatography; Ion-exchange chromatography; Gel filtration ;chromatography;	TLC on microscope slides. (part 2)	
12	Column chromatography; Gas chromatography; HPLC; Electrophoresis	Partition chromatography for the separation of volatile oils	
13	Traditional plant medicines as a source of new drugs. Bioassay-guided fractionation	Effect of activity of adsorbents on R _f values.	
14	Tissue culture of medicinal plant: Introduction and history; laboratory of the plant tissue culture; .aseptic techniques	Effect of activity of adsorbents on R _f values.	
15	Application of the plant tissue culture; environmental and biological control; plant growth regulators	Final exam	

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College of Pharmacy
Department:
Pharmacognosy
Stage: 3nd

Course Syllabus

Name of the First Teacher of the Course: Dr. Ula Al-Mousawi

Academic Rank: PhD in plant chemotaxonomy

Degree: lecturer

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Name of the Second Teacher of the Course: Sabaa Ali Mohameed

Academic Rank: MSc. in Biotechnology

Degree: lecture

Email:

Name of the Third Teacher of the Course: Zainb Tuama

Academic Rank: MSc. in Biotechnology

Degree: lecture

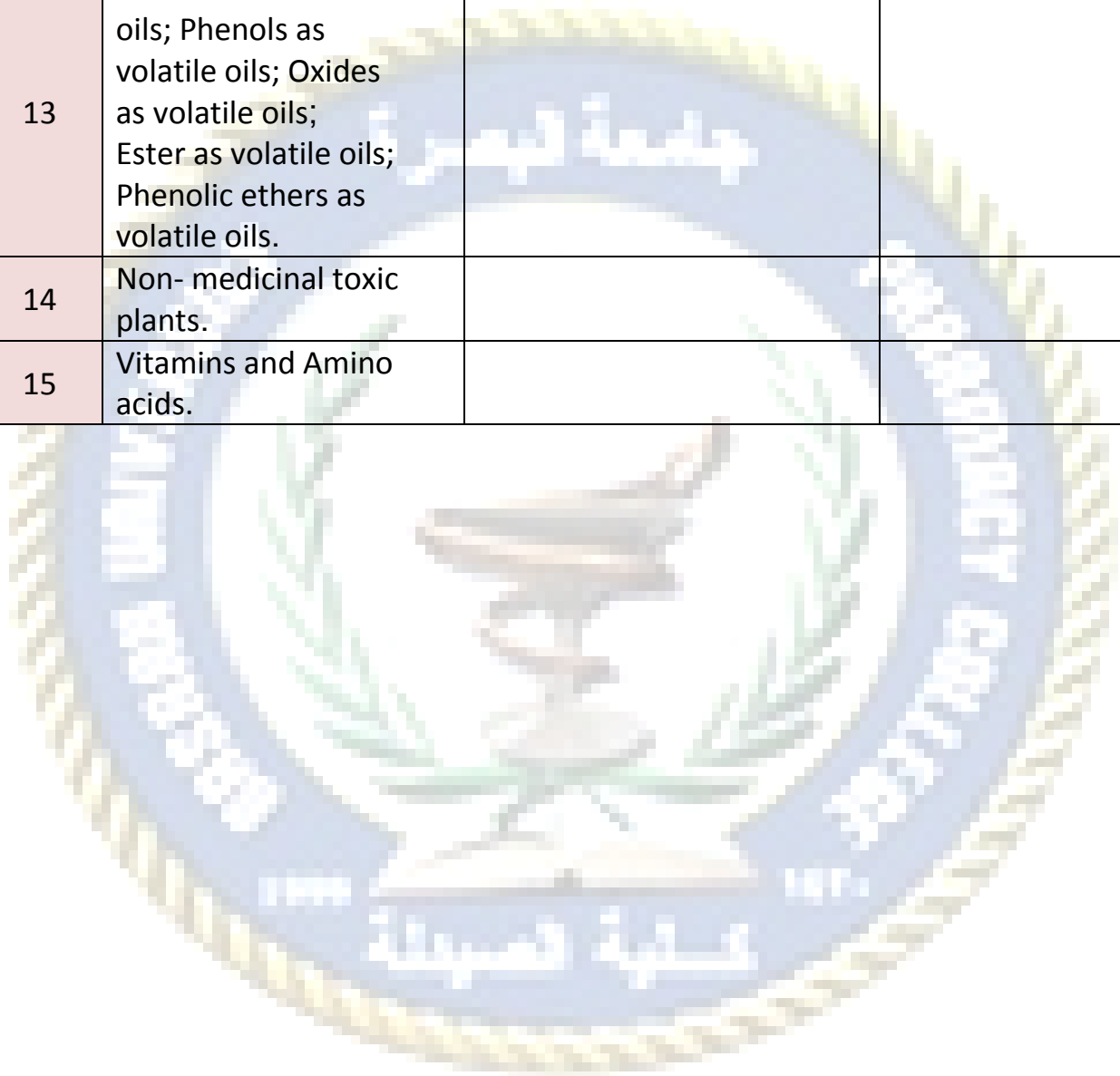
Email: z.tuma@yahoo.com

Course Title	Pharmacognosy II				
Academic System	Semester				
Course Objective	This course is intended to study chemistry of other natural products namely carbohydrates and glycosides. Also this course includes studying Resins and resin combination; tannins & Lipids: fixed oils and waxes				
Textbooks	Robbers JE, Speedie MK, Tyler VE (Eds.);				
Reference Books	Pharmacognosy and Pharmacobiotechnology; the latest edition				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	10	10	5	50
Additional Information	This course given in the first semester of the third year in two hours of theory and two hours practical laboratory work per week				

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Introduction: General biosynthesis pathways of secondary metabolites	General examination for carbohydrate	
2	Carbohydrates.	Specific examination for carbohydrate. (part 1)	
3	Glycosides: Biosynthesis, physical and chemical properties.	Specific examination for carbohydrate. (part 1)	
4	cardiac glycosides; saponin ;glycosides	Cardio-active glycosides extraction and detection	
5	anthraquinone glycosides; flavonoid glycosides; cyanophore lycosides.	Saponin glycosides extraction and detection.	
6	Glycosides: Isothiocyanate glycosides; aldehyde glycosides; alcoholic	Anthraquinone glycosides extraction and detection	
7	Glycosides; phenolic glycosides; lactone glycosides; coumarins .and chromones	Flavonoid glycosides extraction and detection	
8	Resins and resin combination	Quiz and unknown samples	
9	Tannins.	Tannins extraction and detection (part 1)	
10	Lipids: fixed oils and waxes.	Tannins extraction and detection (part 2)	
11	Volatile oils: Introduction; chemistry of volatile oils.	Lipids	

12	Biosynthesis of volatile oils; Hydrocarbons as volatile oils; alcohols as volatile oils;aldehydes as volatile oils	Volatile oils	
13	Ketones as volatile oils; Phenols as volatile oils; Oxides as volatile oils; Ester as volatile oils; Phenolic ethers as volatile oils.		
14	Non- medicinal toxic plants.		
15	Vitamins and Amino acids.		



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Pharmacognosy
Stage: 3nd

Course Syllabus

Name of the First Teacher of the Course: Dr. Ula Al-Mousawi

Academic Rank: PhD in plant chemotaxonomy

Degree: lecturer

Email: ulanoor@yahoo.com

Name of the Second Teacher of the Course: Aous Abdulhasan

Academic Rank: MSc. in Pharmacognosy

Degree: lecturer

Email:

Name of the Third Teacher of the Course: Zainb Tuama

Academic Rank: MSc. in Biotechnology

Degree: lecturer

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Course Title	Pharmacognosy III				
Academic System	Semester				
Course Objective	This course is intended to study chemistry of other natural products namely alkaloids and antibiotics. Also this course includes studying phytotherapy & tissue culture techniques utilized for production of natural products.				
Textbooks	Trease and Evans Pharmacognosy; 15th ed., 2000 Robbers JE, Speedie MK, Tyler VE (Eds)				
Reference Books	Pharmacognosy and Pharmacobiotechnology; the latest edition . Michael Heinrich, Joanne Barnes; Fundamentals of Pharmacognosy & Phytotherapy .				
Course Assessment for Semester System (100%)	Theoretical Content Exam	Laboratory Work	Quizzes	Project	End Semester Examination
	25	10	10	5	50
Additional Information	This course given in the second semester of the third year in two hours of theory and two hours practical laboratory work per week				

Weekly Schedule

Week	Theoretical Content	Laboratory Work	Notes
1	Alkaloids: Introduction; Physical and chemical properties.	General methods of extraction alkaloids	
2	pyridine, piperidine ; alkaloids;	Isolation of Peganum harmala alkaloids.	
3	Tropane alkaloids	Isolation of piperine from black pepper.(part 1)	
4	Quinoline tropan alkaloids;	Isolation of piperine from black pepper.(part 2)	
5	Iso-quinoline alkaloids;	Isolation of belladonna alkaloids and their identification. (part 1)	
6	Imidazole alkaloids;	Isolation of belladonna alkaloids and their identification. (part 2)	
7	Indole alkaloids.	Isolation of caffeine from tea.	
8	Steroidal alkaloids	Isolation of nicotine from tobacco. (part 1)	
9	lupinane alkaloids	Isolation of nicotine from tobacco. (part 2)	
10	Alkaloidal amines; purine alkaloids.	Isolation of Indole alkaloids from vinca. (part 1)	
11	Antibiotics: Natural sources; biosynthetic pathways.	Isolation of Indole alkaloids from vinca. (part 2)	
12	Antibiotics: isolation and purification.	Isolation of morphine from papaver. (part 1)	
13	Phytotherapy : Introduction	Isolation of morphine from papaver. (part 2)	
14	Principles,medicinal plants in selected health care systems.		

