COURSE SPECIFICATIONS

Faculty of Pharmacy

First level – Semester 1

Bachelor of Pharmacy

(Clinical Pharmacy)

2019-2020

CONTENTS:

COURSE SPECIFICATION

Physical and Inorganic Chemistry
First level –Semester 1

2019-2020

Course Specification of Physical and Inorganic Chemistry

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of Pharmacy (clinical pharmacy)

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Analytical Chemistry

Academic year / Level: First level/ Semester 1

Date of specification approval: 2019-9

B- Basic information:

Title: Physical and inorganic Chemistry Code: PC 101

Credit hours:

- Lectures: 2 hrs/week
- Tutorials: ---
- Practical: 1 hrs/week
- Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course

On completion of the course, students will be able to illustrate the necessary basis of physical inorganic chemistry and reactions chemical kinetics.

2-Intended Learning Outcomes of General and Physical chemistry (ILOs):

A- Knowledge and Understanding	
a1	Describe the physical properties of matter and units of measurement.
a2	Explain gas laws and their applications
a3	Identify the properties of solutions and expression of concentration
a4	Outline the kinetic and thermodynamics concepts driving chemical processes
a5	Illustrate fundamentals of chemical and ionic equilibria.
a6	Illustrate theories of spectroscopy, chemical bonding and atomic molecular theories
B- Professional and Practical Skills	
b1	Handle and dispose chemicals safely.
b2	Identify and separate anions groups.
b3	Solve problems on physical properties of matter, and solution properties.
C- Intellectual Skills	
c1	Select the appropriate qualitative analysis tools in the separation of different anions.
c2	Analyze and interpret experimental results.
D- General and Transferable Skills	
d1	Manipulate data from different sources
d2	Work effectively as a member of a team to develop problem solving and presentation skills

D- Contents:

Week No.	Lecture (2 hrs/week)	Practical Session (1 hrs/week)
1	-Introduction to physical chemistry: SI units, empirical and molecular formula, limiting reactant and percent yield	-Lab safety measures -Tutorial lab 1 (calculations of moles, molecular weight, empirical formula and percentage composition of compounds).

2	Gas behavior	- Tutorial lab 2(limiting reactant; theoretical and percentage yields).
3	- concentration and solubility	- Colligative properties of real solutions (boiling point elevation).
4	- Colligative properties of solution	- Colligative properties of real solutions (osmotic pressure measurement).
5	- Thermochemistry -First law of thermodynamics - Relation between ΔH and ΔE	-Separation and identification of CO_3 & HCO_3
6	- Hess's Law -Kirchoff 's equation - Measurement of heat of reaction	- Separation and identification of sulfur anions
7	- Chemical equilibrium Periodical exam	**- Practical exam (1)**
8	- Aqueous equilibrium	- Separation and identification of halides
9	- Atomic theory	- Separation and identification of arsenic and phosphorous anions
10	- Bonding & Lewis structure	- Separation and identification of oxidizing anions Simple mixture of anions
11	- Chemical bonding	**- Activity**
12	- Molecular structure	**- Practical exam (2)**

13	-Revision	
14	- Open discussion	
15	- Final Exam	

E- Teaching and Learning Methods:

1- Lectures
2- Practical Sessions
3- Self learning (activity, open discussion)

F- Student Assessment Methods:

1- Written exam to assess: a1, a2, a3, a4, a4, a5, a6, d1
2- Practical exam to assess: b1, b2, b3, c1,c2, d1,d2
3- Activity to assess: d2

Assessment Schedule:

Assessment (1): periodical exam	Week 7
Assessment (2): Written exam	Week 15
Assessment (3): Practical exams	Week 7,12
Assessment (4): Activity	Week 11
Assessment (5): Oral exam	Week 15

Weighting of Assessment:

Assessment method	Marks	Percentage
Final Written exam	50	50%
Practical exam	25	25%
Periodic exam	10	10%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- Black (white) board, Data show, Laboratory equipment and Chemicals.

H- List of References:

1- Course Notes: Student book of General and Physical chemistry edited by faculty members of the analytical chemistry department (2018).

- Practical notes edited by faculty members of the analytical chemistry department (2018).

2- Essential Books:

i- Chemistry 6th Edition - John E. McMurry, Robert C. Fay (2012).

ii- Principles of Physical Chemistry(Part 1-2) (first edition); RaffM.; Prentice Hall (2001).

3- Periodicals, Web Sites, etc

http://www.coursera.org/course/physicalchemistry

http://www.chemwiki.ucdavis.edu /physical chemistry

http://www.chemguide.co.uk/physmenu.html

Course Coordinator: Prof. Dr. Wafaa Hassan

Head of Department: Prof. Dr. Hisham Ezzat

Date: تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ /2019/9

Matrix I of General and physical chemistry course

Course Contents		ILOs of the course												
		knowledge and understanding						practical skills			intellectual skills		General and transferable skills	
		a1	a2	a3	a4	a5	a6	b1	b2	b3	c1	c2	d1	d2
Lectures														
1	Introduction to physical chemistry: SI units, empirical and molecular formula, limiting reactant and percent yield	x											x	
2	Gas behavior		x										x	
3	concentration and solubility			x										
4	Colligative properties of solution			x									x	
5	Thermochemistry, First law of thermodynamics, Relation between ΔH and ΔE				x								x	
6	Hess's Law, Kirchoff 's equation, Measurement of heat of reaction				x								x	
7	Chemical equilibrium					x							x	
8	Aqueous equilibrium					x							x	
9	Atomic theory						x							
10	Bonding & Lewis structure						x							
11	Chemical bonding						x							
12	Molecular structure						x							
Practical sessions														
1	Laboratory safety measures calculations of moles, molecular weight, empirical formula and percentage composition of compounds							x		x		x		

2	limiting reactant; theoretical and percentage yields									x		x		
3	Colligative properties of real solutions (boiling point elevation)									x				
4	Colligative properties of real solutions (osmotic pressure measurement).									x				
5	Separation and identification of CO_3 & HCO_3								x		x	x		
6	Separation and identification of sulfur anions								x		x	x		
7	Separation and identification of halides								x		x	x		
8	Separation and identification of arsenic and phosphorus anions								x		x	x		
9	Separation and identification of oxidizing anions Simple mixture of anions								x		x	x		
10	Activity													x

Matrix II of General and physical chemistry course

National Academic Reference Standards NARS		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Method of assessment	
						Lecture	Practical session	Self learning	Written exam	Practical exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a6	- Dalton's atomic theory - Bohr atomic theory - Atomic and electronic structure	Student book Essential book	x			x	
			a6	- Ionic bonding - Covalent bonding - Octet rule and Lewis structure	Student book Essential book Internet	x		x	x	
2.2	Physical-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio- labeled products.	A5, A6	a1,a2, a3,a5	- introduction Gas behavior - Solutions - Thermochemistry - Thermodynamics and entropy - Reaction rate and factors affecting it - ionic equilibrium	Student book Essential book Internet	x		x	x	
			a3,a4	- Thermochemistry - Thermodynamics and entropy - solutions - Reaction rate and factors affecting it						

3.2	Handle and dispose chemicals and pharmaceutical preparations safely.	B2	b1	- Laboratory safety measures	Practical notes		x			x
3.4	Extract, isolate, synthesize, purify, identify, and /or standardize active substances from different origins.	B5	b2	- Separation and identification of anions	Practical notes		x			x
4.3	Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations.	C3	c1	- Separation and identification of anions	Practical notes		x			x
4.13	Analyze and interpret experimental results as well as published literature	C15	b3 c2	Gas behavior Solutions Thermodynamics and entropy Colloids Reaction rate and factors affecting it Molecularity of the reaction	Student book Essential book Internet	x		x	x	
5.3	Work effectively in a team.	D4	d2	presentations Activity	Internet		x	x		x
5.10	Implement writing and thinking, problem- solving and decision-making abilities.	D12	d1	-Introduction -Gas properties -Solution -Thermodynamics -Chemical and aqueous equilibrium	Student book Essential book Internet	x	x	x	x	x

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Course Coordinator: Prof. Dr. Wafaa Hassan

Head of Department: Prof. Dr. Hisham Ezzat

Date: تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ /2019/9

COURSE SPECIFICATIONS

Pharmaceutical Organic Chemistry

First level –Semester 1

2019-2020

Course specification of Pharmaceutical Organic Chemistry (PC 102)

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of Pharmacy (clinical pharmacy)

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Pharmaceutical Organic Chemistry

Academic year / Level: First level/ Semester 1

Date of specification approval: 26/8/2019

B- Basic information:

Title: Pharmaceutical Organic Chemistry Code: PC 102

Credit hours:

- Lectures: 2 hrs/week
- Tutorials: ---
- Practical: 1 hrs/week
- Total: 3 hrs/week

C- Professional information:

1- Overall aim of the course:

On completion of the course, the student will be able to:

- Recognize the different type of hybridization and geometry of carbon atoms and other multivalent atoms in organic compounds.
- Identify the different functional groups and their molecular structure in organic compounds.
- Describe the steps of nomenclature of organic compounds.
- Outline the chemistry of aliphatic saturated and unsaturated hydrocarbon, alcohols and aliphatic halo compounds and aliphatic carbonyl compounds.

- Recognize the steps of qualitative identification of organic compounds.

2- Intended Learning Outcomes (ILOs):

A- Knowledge and Understanding:	
a1	Summarize the principles of electronic structures, hybridization, classification, IUPAC nomenclature acidity/basicity of organic compounds.
a2	Give a systematic nomenclature to a given organic compound
a3	Outline different synthetic pathways and reactions of saturated and unsaturated aliphatic hydrocarbons, alcohols, alkyl halides and aliphatic carbonyl compounds.
B- Professional and Practical skills:	
b1	Handle basic laboratory equipments and organic raw materials of drugs effectively and safely.
b2	Identify qualitatively the main functional groups of organic raw materials of drugs.
b3	Write systematic laboratory reports including experimental procedures, observations and conclusions
C- Intellectual skills:	
c1	Suggest methods for synthesizing saturated and unsaturated hydrocarbons containing organic functional groups.
c2	Classify organic compounds according to their chemical properties.
c3	Asses polarity, reactivity an stability of organic compounds from their molecular structures.
D-General and Transferable skills:	
d1	Communicate effectively with others.
d2	Work effectively as part of a team to collect data and/or produce reports and presentations.
d3	Set realistic targets and mange time to meet targets within deadlines

D- Contents:

Week No.	Lecture contents (2 hrs/lec.)	Practical session (1 hrs/lab)
1	Atomic structure, covalent bonding, hybridization of carbon and elements of organic compounds and molecular orbital theory	Lab safety
2	Electronegativity, molecular polarity and dipole moment and hydrogen bonding between molecules. Representation and classification of organic compounds.	Physical properties & solubility
3	IUPAC nomenclature of organic compounds.	General chemical tests: 1. Action of 30% NaOH
4	Free radical halogenation of alkanes	2. Action of $FeCl_3$
5	Preparation and reactions of alkenes	3. Action of conc. H_2SO_4
6	Periodic exam	
7	Alkynes	Test of unsaturation
8	Reactions of alkyl halides	Test of function group 1
9	Reactions of alcohols	Test of function group 2
10	Reactions of aldehydes	Test of function group 3
11	Reaction of aldehydes continued	Test of function group 4
12	Reaction of ketones	Test of function group 5
13	Reaction of carboxylic acids	Practical exam
14	Reaction of carboxylic acid derivatives	Practical exam
15	Final exam	

E- Teaching and Learning Methods:

Lectures and practical sessions

Group discussion

F- Students Assessment Methods:

1. Written exams to assess: a1, a2, c1, c2, c3
2. Practical exams to assess: b1, b2, b3, c1, c2, c3, d1, d2, d3
3. Oral exam to assess: a1, a2, a3, c1, c2, c3
4. Writing reports: b1, b2, b3, c1, c2, c3, d1, d2, d3

Assessment Schedule:

Assessment (1): periodical exam	Week 7
Assessment (2): Written exam	Week 15
Assessment (3): Practical exams	Week 13,14
Assessment (4): Activity	Week 11
Assessment (5): Oral exam	Week 15

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	50	50%
Oral exam	15	15%
Practical exam	20	20%
Periodic exam	10	10%
Activities (Writing reports)	5	5%
TOTAL	100	100%

G- Facilities required for teaching and learning:

- For lectures: Black and white boards, data show and air conditioned classroom
- For practical: Well-equipped labs

H- List of References:

1- Course Notes: Student book of Pharmaceutical Organic chemistry approved by the department 2019.

2- Essential books:

- ✓ Francis A. Carey, 2009, Organic Chemistry; 9th Edition, McGraw-Hill
- ✓ T. W. Graham Solomons and Craig B. Fryhle, 2010, Organic Chemistry; 11th Edition, John willy & Sons Inc, USA.

Course Coordinator: Prof. Dr. Zakaria Abdelsamii

Head of Department: Prof. Dr. Hanan Abdelrazik Abdelfatah

2019/8/26 تم مناقشة واعتماد توصيف المقرر من مجلس القسم بتاريخ

Matrix I of Pharmaceutical Organic Chemistry course

Course Contents		Knowledge and Understanding			Professional and practical skills			Intellectual skills			General and Transferable skills		
Lectures		**a1**	**a2**	**a3**	**b1**	**b2**	**b3**	**c1**	**c2**	**c3**	**d1**	**d2**	**d3**
1	Introduction	x						x	x	x			
2	Basic concepts in Organic chemistry	x						x	x	x			
3	Alkanes Activity		x	x				x	x	x			
4	Cycloalkanes		x	x				x	x	x			
5	Alkenes(nomenclature &preparation)		x	x				x	x	x			
6	Alkenes (reactions) Periodic exam			x				x	x	x			
7	Alkynes		x	x				x	x	x			
8	Alkyl halides and Nomenclature of Alcohols		x	x				x	x	x			
9	Reactions of Alcohols and ether Activity		x	x				x	x	x			
10	Aldehydes		x	x				x	x	x			
11	Ketones		x	x				x	x	x			
12	Carboxylic acids (nomenclature and preparation)		x	x				x	x	x			

13	Carboxylic acids (reactions)			x				x	x	x			
14	Carboxylic acid derivatives		x	x				x	x	x			
15	Amines		x	x				x	x	x			
16	Written Exam		x	x				x	x	x			
Practical sessions													
1	Lab safety	x			x	x		x			x	x	
2	Physical properties &solubility	x			x	x		x			x	x	
3	General chemical tests Soda lime&30% NaOH&FeCl3 &C.H2SO4 tests	x			x	x		x			x	x	
4	Aliphatic alcohols Ex. Ethanol & Glycerol	x			x	x		x			x	x	
5	Aromatic Alcohols Ex. Benzyl alcohols	x			x	x		x			x	x	
6	Aldehydes Ex. Formaldehyde & Benzaldehyde	x			x	x		x			x	x	
7	Ketones Ex. Acetone Practical exam	x			x	x		x			x	x	
8	Anilines Ex. Aniline & Urea	x			x	x		x			x	x	
9	Anilinium salts Ex. Anilinium Chloride	x			x	x		x			x	x	
10	Hydrocarbons Ex. Benzene & Naphthalene	x			x	x		x			x	x	
11	Scheme for identification (1)	x			x	x		x			x	x	
12	Scheme for identification (2)	x			x	x		x			x	x	
13	Training for identification	x			x	x		x			x	x	
14	Revision	x			x	x		x			x	x	

Matrix II of Pharmaceutical Organic Chemistry course

National Academic Reference Standards NARS		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Weighting of assessment		
						Lecture	Practical session	Self learning	Written exam	Practical exam	Periodical exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a1	Introduction	Student book Essential books	x			x		x
				Written exam							
				Periodic exam							
			a2	Alkenes(nomenclature &preparation)							
				Alkyl halides and Nomenclature of Alcohols							
				Carboxylic acids (nomenclature and preparation)							
				Written exam							
				Periodic exam							
			a3	Alkanes	Student book Essential books	x			x		x
				Cycloalkanes							
				Alkenes(nomenclature &preparation)							

				Alkenes(nomenclature &preparation)							
2.4	Principles of isolation, synthesis, purification, identification, standardization of pharmaceutical compounds	A8	a3	Alkanes	Student book Essential books Internet	x		x	x		
				Cycloalkanes	Student book Essential books	x			x		
				Alkenes(nomenclature &preparation)	Student book Essential books	x			x		x
				Alkenes (reactions)	Student book Essential books	x			x		x
				Alkynes	Student book Essential books	x			x		x
				Alkyl halides and Nomenclature of Alcohols	Student book Essential books	x			x		x
				Aldehydes	Student book Essential books	x			x		
				Ketones	Student book Essential books	x			x		
				Carboxylic acids (nomenclature and preparation)	Student book Essential books	x			x		
				Carboxylic acids (reactions)	Student book Essential books Internet	x		x	x		

				Carboxylic acid derivatives	Student book Essential books	x			x		
				Amines	Student book Essential books	x			x		
				Written exam							
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	Alkanes	Practical notes		x			x	
				Cycloalkanes			x			x	
				Alkenes(nomenclature &preparation)			x			x	
				Alkenes (reactions)			x			x	
				Alkynes			x			x	
				Alkyl halides and Nomenclature of Alcohols			x			x	
3.4	Extract, isolate ,synthesize, purify ,identify, and /or standardize active substances from different origins.	B6		Aldehydes			x			x	
				ketones			x			x	
			b2	Carboxylic acids (nomenclature and preparation)			x			x	
				Carboxylic acids (reactions)			x			x	
		B17		Carboxylic acid derivatives			x			x	
3.11	Conduct research studies and analyze		b3	Amines			x			x	

	the results			Activity			x			x	
				Practical exam			x			x	
4.5	Select the appropriate methods of isolation, synthesis, purification, identification and standardization of active substances from different origins.	C6	c1	Alkanes	Student book Essential books	x			x		
				Cycloalkanes		x			x		
				Alkenes(nomenclature &preparation)		x			x		
				Alkenes (reactions)		x			x		
				Alkynes		x			x		
				Alkyl halides and Nomenclature of Alcohols		x			x		
			c2	Aldehydes		x			x		
				ketones		x			x		
			c3	Carboxylic acids (nomenclature and preparation)		x			x		
				Carboxylic acids (reactions)		x			x		
				Carboxylic acid derivatives		x			x		
				Amines		x			x		
				Written Exam		x			x		
5.1	Communicate clearly by verbal and non verbal means	D1	d1	Scheme for identification (1)	Internet			x		x	
				Scheme for identification (2)							

				Training for identification							
5.3 **5.8**	Work effectively in a team. Demonstrate creactivity and time management abilities	D4 D10	d2 d3	Training for identification			x			x	
							x			x	
				Activity			x			x	
				Scheme for identification (1)	Practical notes						
				Scheme for identification (2)							
				Training for identification							
				Activity							
				Practical Exam							

COURSE SPECIFICATIONS

Biophysics
First level –Semester 1

2019-2020

Course Specification of Biophysics for (2019/2020)

University: Zagazig **Faculty: Pharmacy**

A- Course specifications:

Program(s) on which the course is given: Bachelor of pharmacy(Clinical Pharmacy program)

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Biochemistry, Faculty of Pharmacy

Academic year Level: First level /Semester 1

Date of specification approval: 8-2019

B- Basic information:

Title: Biophysics Code: MD 101

Credit hours:

- Lectures: 1 hr/week
- Practical: 1 hrs/week
- Tutorials: ---
- Total: 2 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to:

Explain biological phenomena using the principles and techniques of physics and modify these techniques to help diagnosis and treat various disorders

2-Intended Learning Outcomes of Biophysics (lLOs):

A- Knowledge and Understanding	
a1	Outline the basic structure of the cell membrane and illustrate mechanisms of transport across the cell membrane.
a2	Identify mechanisms of signal transduction and mechanism of action of different types of receptors. .
a3	Illustrate the bases of biophysical techniques as ECG , Laser and Radiation and their different applications.
B- Professional and Practical skills	
b1	Use different medical terminologies properly
b2	Interpret biophysical measurements including blood pressure , ECG , etc.
b3	Solve different problems related to blood pressure and transport across plasma membrane.
C- Intellectual skills	
c1	Assess the nature of disease and the effect of some drugs on biological molecules of plasma membrane.
c2	Evaluate disease diagnosis by physical methods
c3	Differentiate between diagnostic and interventional application of radiation
D- General and Transferable skills	
d1	Write report and presentation
d2	Work as a member of team
d3	Manage independent learning

Content		
Week No.	**Lecture (1hr/week)**	**Practical session (1hrs/week)**
1	-Structure of the plasma membrane	-Lab safety procedures guidelines
2	-Transport across the plasma membrane 1	-Atomic Physics
3	-Transport across the plasma membrane 2	-Biochemical Bonds
4	-Channels and carriers	-The Plasma membrane
5	-Signal Transduction and receptors	-Transport across the plasma membrane
6	- Self learning activity (diagnostic uses of x-ray)	- Practical exam 1
7	-periodical exam	Activity(application of radioactive isotopes in medical field presented as report and ppt)
8	-Biophysical basis of ECG and blood pressure measurement(electrochemical gradient and membrane action potential – action potential in the heart)	-Ion channel
9	- action potential in the heart(cont.) (ECG technique and interpretation – blood pressure measurement)	-Receptors
10	-Atom and radiation (the quantum model of the atom – electromagnetic spectrum – radioactive decay – types of radiation)	-Water homeostasis
11	-quantification of radiation (sources of radiation – radiation risks – application of radiology)	-Blood pressure and viscosity
12	Laser technology (laser beam properties and generation)	-Action potential
13	- Laser types , hazards and applications	-Heart electricity and ECG

14	- Revision and open discussion	**-Practical exam 2**
15	-Written exam	

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- Interactive lectures
- Practical session
- Research assignment
- Self learning

F- Student Assessment Methods:

1- Written exams to assess: a1, a2, a3, , c1, c2,c3.

2- Practical exams & activity to assess: b1,b2, b3, d1, d2, d3

3- Periodical exam to assess: a1, a2.

Assessment schedule:

Assessment (1): Written exam	Week 15
Assessment (2): Practical exams	Week 6,14
Assessment (3): Periodical exam	Week 7

Weighting of Assessment

Assessment method	Marks	Percentage
Written exam	65	65%
Practical exam	25	25%
Periodical exam	10	10%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- Data show , software , videos and screens.

H- List of references:

1- Course Notes

- Student book of Biophysics part1 approved by biochemistry department 2019

- Student book of Biophysics part2 approved by biochemistry department2019
- Practical note of Biophysics approved by biochemistry department2019

2- Essential books

- The biophysics of cell membranes - Epand , Richard M **,** Ruysschaert , Jean Marie (2017)
- Introduction to experimental Biophysics **,**2nd edition- Jayl Nadeau (2018)
- Membrane biophysics : New insights and methods - Hongda Wang , Guohuili (2018)

3- Recommended books

- Fundamentals of Biophysics - Andrey B. Rubin,Wiley-Scrivener (2014)
- Biophysics and neurophysiology of the six sense – Nima Rezaei , Amene Saghazadeh.(2019)

- **Course Coordinators:** Prof. Dr. Hoda El-Sayed
- **Head of Department:** Prof. Dr. Sahar El-swefy

- **Date:** **تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ م 2019-8**

Matrix I of Biophysics course

Course Contents		ILOs of Biophysics course											
		Knowledge and understanding			Professional and practical skills			Intellectual skills			General and Transferable skills		
	Lectures	a1	a2	a3	b1	b2	b3	c1	c2	c3	d1	d2	d3
1	-Structure of the plasma membrane	X						X					
2	-Transport across the plasma membrane 1	X						X					
3	-Transport across the plasma membrane 2	X						X					
4	-Channels and carriers	X						X					
5	-Signal Transduction and receptors		x					x					
6	- Self learning activity (diagnostic uses of x-ray)										x	x	x
7	-periodical exam	x	x										
8	-Biophysical basis of ECG and blood pressure measurement(electrochemical gradient and membrane action potential – action potential in the heart)			x					x				

9	- action potential in the heart(cont.) (ECG technique and interpretation – blood pressure measurement)			x					x				
10	-Atom and radiation (the quantum model of the atom – electromagnetic spectrum – radioactive decay – types of radiation)			x						X			
11	-quantification of radiation (sources of radiation – radiation risks – application of radiology)			x						X			
12	Laser technology (laser beam properties and generation)			x						x			
13	- Laser types , hazards and applications			x						X			
14	-Revision and open discussion										x	x	x
Practical		-Channels and carriers											
1	-Lab safety procedures guidelines				x								
2	-Atomic Physics				x								
3	-Biochemical Bonds				x								
4	-The Plasma membrane				x			x					
5	-Transport across the plasma membrane				x		X	x					
6	- Practical exam 1				x		X	x					
7	Activity(application of radioactive isotopes in					x				x	x	x	

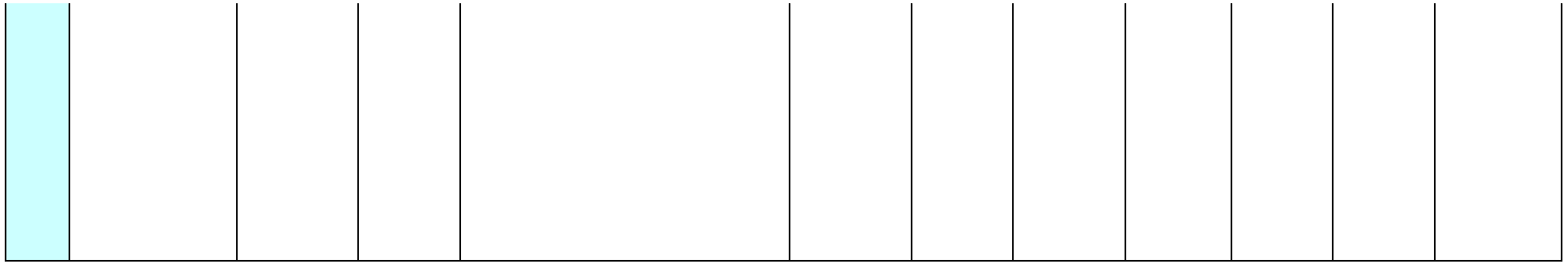
	medical field presented as report and ppt)												x
8	-Ion channel				x			x					
9	-Receptors				x			x					
10	-Water homeostasis					x		x					
11	-Blood pressure and viscosity					x	X	x					
12	-Action potential				x			x		x			X
13	-Heart electricity and ECG					x			x				
14	**-Practical exam 2**				x	x	X						

Matrix II of Biophysics course

National Academic Reference Standards NARS		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Weighting of assessment		
						Lecture	Practical session	Self learning	Written exam	Practical exam	Periodical exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a1	-Structure of the plasma membrane	Student book Essential books	x			x		x
				-Transport across the plasma membrane 1	Student book Essential books	x			x		x
				-Transport across the plasma membrane 2	Student book Essential books	x			x		x
				-Channels and carriers	Student book Essential books	x			x		x
2.11	Principles of body function in health and disease states as well as basis of genomic	A16	a2	- Signal Transduction and receptors	Student book Essential books Internet	x			x		
			a3	-Biophysical basis of ECG and blood pressure measurement(electrochemical gradient and membrane action potential – action	Student book Essential books	x			x		

	and different biochemical pathways regarding their correlation with different diseases.			potential in the heart)							
				- action potential in the heart(cont.) (ECG technique and interpretation – blood pressure measurement)	Student book Essential books	x			x		
				-Atom and radiation (the quantum model of the atom – electromagnetic spectrum – radioactive decay – types of radiation)	Student book Essential books	x			x		
				-quantification of radiation (sources of radiation – radiation risks – application of radiology)	Student book Essential books	x			x		
				Laser technology (laser beam properties and generation)	Student book Essential books	x			x		
				- Laser types , hazards and applications	Student book Essential books	x			x		
3.1	Use the proper pharmaceutical and medical terms and abbrevations and symbols in pharmacy practice.	B1	b1	Lab safety procedures guidelines Atomic Physics Biochemical Bonds	Practical notes		x			x	
				The Plasma membrane Transport across the plasma membrane	Practical notes		x			x	
				Ion channel	Practical notes		x			x	

				Receptors)	Practical notes		x			x	
3.11	Conduct research studies and analyze the results	B17	b3	Heart electricity and ECG	Practical notes		x			x	
			b2	-Water homeostasis	Practical notes		x			x	
				-Blood pressure and viscosity	Practical notes		x			x	
4.13	Analyze and interpret experimental results as well as published literature.	C15	c1	Structure of the plasma membrane Transport across the plasma membrane	Student book Essential books	x			x		
				- Channels and carriers Signal Transduction and receptors	Student book Essential books	x			x		
			C3	- Action potential	Student book Essential books	x			x		
			c2	Heart electricity and ECG	Student book Essential books	x			x		
5.9	Implement writing and presentation skills	D11	d1	Revision and open discussion	Internet			x			
5.3	Work effectively in a team.	D4	d2	Revision and open discussion	Internet			x			
5.5	Practice independent learning needed for continuous professional development.	D7	**d3**	Revision and open discussion	Internet			x			



COURSE SPECIFICATIONS

Botany and medicinal plants

First level –Semester 1

2019-2020

Course Specification of Botany and Medicinal Plants (2019-2020)

University : Zagazig **Faculty : Pharmacy**

A- Course specifications:

Program (s) on which the course is given:**Bachelor of Pharmacy (Clinical Pharmacy)**

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Pharmacognosy

Academic year Level: First year /First term

Date of specification approval: September 2019

B- Basic information:

- Title: Botany and medicinal plants code: PG101
- Credit Hours: ---
- Lectures: 2 hrs/week
- Practical 1 hrs/week
- Tutorials: ---
- Total : 3 hrs/week

C- Professional information

1- Overall aim of the course:

On completion of the course, students will be able to:

- Describe the different plant tissues and cells and their contents, Illustrate the general taxonomy of the different plant families, perform the macro- and micro-morphological characters of the leaves and Describe the leaves as drugs and their active constituents both pharmacopoeia leaves and other allied leaves.
- Differentiate between drugs in entire and powdered form from different plant leaves.

Intended Learning Outcomes of Botany and Medicinal Plants (ILOs)

A- Knowledge and Understanding	
a1	Describe different plant cells and contents.
a2	Identify the different natural drugs and their productions.
a3	Study the plant taxonomy and the classification of the plant Kingdom.
a4	Describe Morphological and Histological characters and uses of medicinal leaves.
a5	Outline adulteration of different medicinal leaves.
a6	Identify different active constituents of medicinal leaves.
B- Professional and Practical skills	
b1	Handel and dispose chemicals in a safe way.
b2	Use microscope and design protocols to examine medicinal plants
b3	Differentiate between different plant tissues and plant cells.
b4	Examine drugs of plant origin in entire and powdered form.
C- Intellectual skills	
c1	Adapt GLP and safety guidelines in the lab.
c2	Differentiate between different plant cells, drugs in entire and powdered forms
c3	Evaluate plant families as source of drugs.
c4	Detect active constituents of leaves.
D- General and Transferable skills	
d1	Work as a member in a team.
d2	Manage time and plane of work.
d3	Write and present reports.
d4	Develop critical thinking and make a decision.

D. Contents

Week	Lecture contents	Practical session (2hrs/lab)

No.	(2hrs/lecture)	
1	Introduction for the course and giving the students the possible references, web sites, text books.	Laboratory safety measures Dealing with microscope.
2	Cell structure including types of cell walls and types of cells (parenchyma, collenchyma, stone cells, fibers, xylem, phloem and secretory tissues).	Microscopical examination of different starches powders and their chemical tests.
3	Study of cultivation, collection and preparation	Microscopical examination of dusting powder and their chemical tests. **Activity** (report on Dusting powders).
4	Study of drying, packing and adulteration of plant drugs.	Identification of different types of plant cells
5	Study of constituents of plant drugs (alkaloids, glycosides, steroids, volatile oil, resins, tannins and proteins	Taxonomy of some plant families
6	Study of constituents of plant drugs including carbohydrates, starches, and coloring matter.	Macroscopical and microscopical examination of Hyoscyamous leaf in entire and powdered form.
7	**Periodical exam**	
8	Introduction for taxonomy of plants Taxonomical study for some important families	Macroscopical and microscopical examination of Datura and Belladona leaves in entire and powdered form. **Activity** (report on pharmaceutical leaves).
9	General introduction for medicinal leaf.	Practical examination for senna leaf including morphology and histology for entire and powdered forms.
10	Identification of morphological and histological studies for Senna in entire and powdered forms, active constituents, uses and chemical test and adulteration.	Morphological and histological study of eucalyptus in entire form
11	Identification of morphological and histological studies for Digitalis and Squill in entire and powdered forms, active constituents, uses and chemical test and adulteration.	Revision
12	Identification of morphological and histological studies for, Buchu, leaves in entire and powdered forms, active constituents, uses and chemical test and adulteration in addition to Uva ursi, Witch- Hazel, Henna, Eucalyptus non official leaves.	Practical exam
13	Morphological and histological studies for Hyoscyamus, Datura and Belladonna leaves in entire and powdered forms, active constituents, uses and chemical test and adulteration. In addition to Jaborandi, Boldo and Tea leaves.	Practical exam
14	Revision	
15	Written and oral exam	

E- Teaching and Learning Methods:

- Lectures.

- Practical session.
- Self learning (Activities, internet search).

F- Student Assessment Methods:

Periodical exam to assess: a1, a2, a4 and c2.

Written exams to assess: a1, a2, a3, a4, a5, a6,c2, c3,c4, d3 and d4

Practical exams to assess: b1, b2, b3, b4, c1, and d1

Oral exam to assess: a1, a2, a3, a4, a5, a6,c2, and c3

Activities to assess: d1, d2, d3 and d4

Assessment schedule:

Assessment (1): Periodical exam	Week 7
Assessment (1): Final written exam	Week 15
Assessment (2): Activity	Week 3, 8
Assessment (3): Practical exams	Week 12. 13
Assessment (4): Oral exams	Week 15

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exams	50	50%
Periodical exam	10	10%
Activity	5	10%
Practical exam	20	25%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- For lectures: Black (white) boards, data show.
- For Labs: Chemicals, glassware, instruments, digital balances and water baths.

H- List of References:

1- Student´s book approved by Pharmacognosy Department on 2019.

2- Text Books:

- Trease and Evans, Pharmacognosy, 15t" Ed., Saunders Company, Nottingham,U.K., Willium Charles Evans (2003).
- The Cambridge Illustrated Glossary of Botanical Terms, M. Hickey and C. King, Cambridge Univ. press (2000).
- Plant Systematic, Judd, W.; Kellogg, E.; Stevens P. and Campbell, C. , Sinauer

Associates' Inc. (2000).

- Plant Anatomy, Fahan, A., Pergamon Press (2002).
- Natural products as sources of new drugs over the last 25 years. Newman D.J and Cragg, G.M., Journal of Natural Products 70, 461-477 (2007).
- Chinese Herbal Medicine: Dan Bensky, Steven Clavey, Erich Stoger and Andrew Gamble Materia Medica, Third Edition (2004).
- Jackson, M. and A. Lowey (2010). Handbook of extemporaneous preparation: a guide to pharmaceutical compounding, Pharmaceutical Press London, UK.
- Upton, R., A. Graff, G. Jolliffe, R. Länger and E. Williamson (2016). American herbal pharmacopoeia: botanical pharmacognosy-microscopic characterization of botanical medicines, CRC Press.
- McCreath, S. B. and R. Delgoda (2017). Pharmacognosy: Fundamentals, applications and strategies, Academic Press.

3- Recommended Books:

- "Encyclopedia of Common Natural Used in Food, Drugs and Cosmetics", Leung A.Y. and Faster.
- Leung A.Y. and Faster" Encyclopedia of Common Natural Ingredients Used in Food, Drugs and Cosmetics".
- - Janice, Glimn-Lacy and Peter B. Kaufman, Botany Illustrated, Introduction to plants, major groups, flowering plants families, 2nd ed. Springer 2006.
- Martindale (2007), "The extra pharmacopeia". 31st edn., by James, E.F Reynolds. And Kathleen Parfitt, Royal Pharmaceutical Society, London.

4- Periodicals, web sites, etc.:

- Aquilina A. (2013), The extemporaneous compounding of paediatric medicines at Mater Dei Hospital. Journal of the Malta College of Pharmacy Practice.Issue 19, 28 – 30.
- http://canadianpharmacistsletter.therapeuticresearch.com/ce/ceCourse.asp
- https://www.google.com/search?safe=active&sxsrf=ACYBGNT1wfCQl6DGxZ5ouZYl1QZZfJSrYg:1568843605556&q=Pharmacognosy4all&tbm=isch&source=univ&sa=X&ved=2ahUKEwiel8TurdvkAhVIrxoKHcTHDMAQ7Al6BAgBECQ&biw=1008&bih=584#imgrc=7NmuWomEPl70WM:

- Amer. J. Nat. Prod., Phytochemistry, Planta Medica , Fitoterapia.
- A. Fahan, Plant Anatomy, Pergamon Press. **2002.**
- - http://www.scribd.com/doc/75980088/Atlas-of-Medicinal-Plants-II
- http://pharmacystudent-prep.blogspot.com
- - http://www.pharma-board.com/board/fopgal/index.php

Course Coordinator: Prof. Dr. Ehsan Abu Zaid

Head of department: Prof. Dr. Amal El-Gendy

Date: 2019/9/..... تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ

Matrix I of Botany and Medicinal Plants																			
Course Contents		ILOs of Botany and Medicinal Plants PG101 Clinical																	
		knowledge and understanding						professional and practical skills				intellectual skills				Transferable and general skills			
Lectures		a1	a2	a3	a4	a5	a6	b1	b2	b3	b4	c1	c2	c3	c4	d1	d2	d3	d4
1	Introduction for the course and giving the students the possible references, web sites, text books.	x																	
2	Cell structure including types of cell walls and types of cells (parenchyma, collenchyma, stone cells, fibers, xylem, phloem and secretory tissues).	x											x						
3	Study of cultivation, collection and preparation		x											x					
4	Study of drying, packing and adulteration of plant drugs.		x											x					
5	Study of constituents of plant drugs (alkaloids, glycosides, steroids, volatile oil, resins, tannins and proteins	x												x					
6	Study of constituents of plant drugs including carbohydrates, starches, and coloring matter.	x												x					
7	Introduction for taxonomy of plants Taxonomical study for some important families			x										x					
8	General introduction for medicinal leaf.				x								x	x					
9	Identification of morphological and histological studies for Senna in entire and powdered forms, active constituents, uses and chemical test and adulteration.				x	x	x						x	x					
10	Identification of morphological and histological studies for Digitalis and Squill in entire and powdered forms, active constituents, uses and chemical tests and adulteration.				x	x	x						x	x					

11	Identification of morphological and histological studies for, Buchu, leaves in entire and powdered forms, active constituents, uses and chemical test and adulteration in addition to Uva ursi, Witch- Hazel, Henna, Eucalyptus non official leaves.				x	x	x						x	x					
12	Morphological and histological studies for Hyoscyamus, Datura and Belladonna leaves in entire and powdered forms, active constituents, uses and chemical test. Inaddition to Jaborandi, Boldo and Tea leaves				x	x	x						x	x					
	Practical																		
1	Laboratory safety measures Dealing with microscope.							x	x							x	x		x
2	Microscopical examination of different starches powders and their chemical tests.							x	x	x						x	x		x
3	Microscopical examination of dusting powder and their chemical tests. **Activity** (report on Dusting powders).							x	x	x						x	x	x	x
4	Identification of different types of plant cells							x		x						x	x		x
5	Taxonomy of some plant families							x	x	x	x					x	x		x
6	Macroscopical and microscopical examination of Hyoscyamous leaf in entire and powdered form.							x	x	x	x					x	x		x
7	Macroscopical and microscopical examination of Datura and Belladona leaves in entire and powdered form. **Activity** (report on pharmaceutical leaves).							x	x	x	x					x	x		x
8	Practical examination for Senna leaf including morphology and histology for entire and powdered forms.							x	x	x	x					x	x	x	x
9	Morpholigical and histological study of eucalyptus in entire form								x	x	x	x				x	x		x

10	Revision								**x**	**x**	**x**	**x**				**x**	**x**		**x**

Matrix II of Botany and Medicinal Plants												
National Academic Reference Standards NARS		**Program ILOs**	**Course ILOs**	**Course contents**	**Sources**	**Teaching and learning methods**			**Weighting of assessment**			
						lecture	practical session	self learning	written exam	practical exam	oral exam	periodical exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	a1	Introduction for the course and giving the students the possible references, web sites, text books.	Student's book	**x**			**x**		**x**	**x**
				Cell structure including types of cell walls and types of cells (parenchyma, collenchyma, stone cells, fibers, xylem, phloem and secretory tissues								
				Study of constituents of plant drugs (alkaloids, glycosides, steroids, volatile oil, resins, tannins and proteins								
				Study of constituents of plant drugs including carbohydrates, starches, and coloring matter.								
			a2	Study of drying, packing and adulteration of plant drugs.								
				Study of cultivation, collection and preparation								
				Study of drying, packing and adulteration of plant drugs.								
			a3	Introduction for taxonomy of plants Taxonomical study for some important families	Student's book	**x**			**x**		**x**	
			a4, a5, a5, a6	General introduction for medicinal leaf.	Student's book	**x**			**x**		**x**	**x**
				Identification of morphological and histological studies for Senna in entire and powdered forms, active constituents, uses and chemical test and adulteration..								

				Identification of morphological and histological studies for Digitalis and Squill in entire and powdered forms, Active const., uses and chemical tests and adulteration								
				Identification of morphological and histological studies for, Buchu, leaves in entire and powdered forms, active constituents, uses and chemical test and adulteration in addition to Uva ursi, Witch-Hazel, Henna, Eucalyptus non official leaves.								
2.4	Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds.	A8		Morphological and histological studies for Hyoscyamus, Datura and Belladonna leaves in entire and powdered forms, active constituents, uses and chemical test. Inaddition to Jaborandi, Boldo and Tea leaves	Student's book	**x**			**x**		**x**	**x**
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	Laboratory safety measures Dealing with microscope.	Practical note					**x**		
			b2	Macroscopical and microscopical examination of Hyoscyamous leaf in entire and powdered form. Macroscopical and microscopical examination of Datura and Belladona leaves in entire and powdered form. Practical examination for Senna leaf including morphology and histology for entire and powdered forms. Morpholigical and histological study of eucalyptus in entire form	Practical note					**x**		

3.4	Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B4	b3	Microscopical examination of different starches powders and their chemical tests. Microscopical examination of dusting powder and their chemical tests.	Practical note					**x**		
			b4	examination of Hyoscyamous leaf in entire and powdered form. Macroscopical and microscopical examination of Datura and Belladona leaves in entire and powdered form. Practical examination for Senna leaf including morphology and histology for entire and powdered forms. Morpholigical and histological study of eucalyptus in entire form								
4.2	Comprehend and apply GLP,GPMP, GSP and GCP guidelines in pharmacy practice	C2	c1	Laboratory safety measures	Student's book					**x**		
4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	C6	c2	Cell structure including types of cell walls and types of cells (parenchyma, collenchyma, stone cells, fibers, xylem, phloem and secretory tissues).	Student's book	**x**			**x**		**x**	
			c3	Study of cultivation, collection and preparation Study of drying, packing and adulteration of plant drugs. Study of constituents of plant drugs (alkaloids, glycosides, steroids, volatile oil, resins, tannins and proteins Study of constituents of plant drugs including carbohydrates, starches, and coloring matter. Introduction for taxonomy of plants	Student's book	**x**			**x**		**x**	

				Taxonomical study for some important families								
			c2, c3	General introduction for medicinal leaf.	Student's book							

			c2, c3, c4	Identification of morphological and histological studies for Senna in entire and powdered forms, active constituents, uses and chemical test and adulteration. Identification of morphological and histological studies for Digitalis and Squill in entire and powdered forms, active constituents, uses and chemical tests and adulteration. Identification of morphological and histological studies for, Buchu, leaves in entire and powdered forms, active constituents, uses and chemical test and adulteration in addition to Uva ursi, Witch- Hazel, Henna, Eucalyptus non official leaves. Morphological and histological studies for Hyoscyamus, Datura and Belladonna leaves in entire and powdered forms, active constituents, uses and chemical test. Inaddition to Jaborandi, Boldo and Tea leaves	Student's book							

5.3	Work effectively in a team	D4	d1	**Activity** (report on Dusting powders).	Internet research			**x**				
5.8	Demonstrate creativity and time management abilities	D10	d2	**Activity** (report on pharmaceutical leaves).	Internet research			**x**				
5.9	Implement writing and presentation skills	D11	d3	**Activity** (report on Dusting powders).	Internet research			**x**				
5.10	Implement writing and thinking, problem solving and decision-making abilities.	D12	d4	**Activity** (report on pharmaceutical leaves).	Internet research			**x**				

Course Coordinator: Prof. Dr. Ehsan Abu Zaid

Head of department: Prof. Dr. Amal El-Gendy

Date: 2019/9/..... تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ

COURSE SPECIFICATIONS

Cell Biology
First level –Semester 1

2019-2020

Course Specification of Cell Biology for (2019/2020)

University: **Zagazig** **Faculty:** **Pharmacy**

A- Course specifications:

Program(s) on which the course is given: Bachelor of Pharmacy (Clinical Pharmacy)

Major or Minor element of programs: Major

Department offering the program: --------

Department offering the course: Biochemistry

Academic year Level: First level /Semester 1

Date of specification approval: 8/2019

B- Basic information:

Title: Cell Biology Code: MD 102

Credit hours:

- Lectures: 1 hr/week
- Practical: 1 hr/week
- Tutorials: ---
- Total: 2 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to:

- Outline the principles of cell biology and molecular genetics.
- Use the proper terms of cell biology, cell division, cell cycle
- Differentiate between mitotic and meiosis as well as atrophy and hyperplasia.

2-Intended Learning Outcomes of Cell Biology (lLOs):

A- Knowledge and Understanding	
a1	Identify the principles of cell biology including cell theory and different types of cells.
a2	Outline the basis of genetics, nucleic acids and protein synthesis , as well as mutations.
a3	Illustrate the functions of different cellular organelles.
a4	Identify the different phases and types of cell division and their correlation with various disorders.
a5	Define cell cycle, hypertrophy, hyperplasia, apoptosis and necrosis.
a6	Discuss apoptosis in physiologic and pathologic situations.
B- Professional and Practical skills	
b1	Use the proper terms of cell biology, cell division and cell cycle.
b2	Perform identification and illustration of different cell organelles including endoplasmic reticulum, mitochondria, Golgi apparatus, etc…
C- Intellectual skills	
c1	Analyze a range of information in differentiating between mitotic and meiosis as well as atrophy and hyperplasia.
c2	Compare between prokaryotes and eukaryotes.
c3	Differentiate between apoptosis and necrosis; intrinsic and extrinsic pathways of apoptosis.
D- General and Transferable skills	
d1	Write and present reports about different topics.

D- Contents:

Week No.	Lecture (1hr/week)	Practical session (1hr/week)
1	- Cell theory - Animal cell - Plant cell - Prokaryotic cell - Eukaryotic cell	- Introduction - Types and parts of microscope
2	- Structure of cell membrane - Cytoplasm - Transport across membrane - Nucleus (Chromatin and chromosomes)	- Micrographs of plant and animal cells at E.M level
3	- Endoplasmic reticulum - Golgi apparatus - Lysosomes - Chloroplasts	- Micrograph of cell membrane at E.M level
4	- Mitochondria - Cytoskeleton - Micro-bodies	- Micrograph of smooth and rough endoplasmic reticulum
5	- Apoptosis - Mechanism of apoptosis	- Micrograph of nucleus at E.M level
6	- Necrosis	**- Practical exam 1**
7	**- Periodical exam**	**- Activity- Report**
8	- Apoptosis and its relation to cancer.	- Micrograph of Golgi apparatus at E.M level - Micrograph of lysosomes at E.M level
9	- Apoptosis and its relation to AIDs and atherosclerosis	- Micrograph of mitochondria at E.M level
10	- Molecular genetics - DNA and RNA synthesis	- Micrograph of cytoskeleton (microtubules) **- Activity (cell division and organ transplantation)**
11	- Protein synthesis - Mutation points	- Micrograph of chloroplasts at E.M level **- Activity (Application on abnormal cell division)**
12	- Cell growth - Cell division (Mitotic)	- Micrograph of different stages of cell division
13	- Cell division (Meiosis) - Cell cycle regulation	- Revision
14	- Revision and open discussion	**- Practical exam 2**
15	- Written exam	

E- Teaching and Learning Methods:

- Lectures
- Practical session
- Self learning (internet search on some selected topics….)

F- Student Assessment Methods:

1- Written exams to assess: a1, a2, a3, a4, a5, a6, c1, c2, c3

2- Practical exams to assess: b1, b2

3- Activities to assess: b1, d1

4- Periodical exam to assess: a1, a2, c2

Assessment schedule:

Assessment (1): Activity	Week 7,10,11
Assessment (2): Periodical exam	Week 7
Assessment (3): Practical exam	Week 6,14
Assessment (4): Written exam	Week 15
Assessment (5): Oral exam	Week 15

Weighting of Assessment

Assessment method	Marks	Percentage
Periodical exam	10	10%
Practical exam	25	25%
Final Written exam	50	50%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- Black (white) board and Data show.

H- List of references:

1- Course Notes:

- Student book of cell biology approved by biochemistry department 2019.

- Practical notes of cell biology approved by biochemistry department 2019.

2- Essential books:

- Cell biology, 3rd edition 2017, Thomas D. Pollard, William C. Earnshaw, Jennifer Lippincott-Schwartz, Graham Johnson.
- Encyclopedia of cell biology, 1st edition 2015, Ralph A.Bradshaw, Philip D. Stahl.
- Molecular cell biology (8th edition); Harvey Lodish, Arnold Berk, S Lawrence Zipursky, Paul Matsudaira, David Baltimore, and James Darnell. New York: W. H. Freeman (2016).

Course Coordinators: **Prof. Dr. Sahar El-Swefy**

Head of department: **Prof. Dr. Sahar El-Swefy**

Date: 8/2019

Matrix I of Cell Biology course (2019-2020)

Course Contents		ILOs of Cell Biology course											
		Knowledge and understanding						Professional and practical skills		Intellectual skills			General and Transferable skills
Lectures		a1	a2	a3	a4	a5	a6	b1	b2	c1	c2	c3	d1
1	Cell theory- Animal cell-Plant cell Prokaryotic cell- Eukaryotic cell	x									x		
2	Structure of cell membrane Cytoplasm- Transport across membrane Nucleus (Chromatin and chromosomes)			x									
3	Endoplasmic reticulum - Golgi apparatus Lysosomes- Chloroplasts			x									
4	Mitochondria- Cytoskeleton- Micro-bodies			x									
5	Molecular genetics- DNA and RNA synthesis		x										
6	Protein synthesis- Mutation points		x										
7	Periodical exam												x
8	Cell growth- Cell division (Mitotic)				x					x			
9	Cell division (Meiosis)- Cell cycle regulation				x					x			
10	Apoptosis-mechanism of apoptosis				x	x	x					x	
11	Necrosis				x	x						x	

12	Apoptosis and its relation to cancer				x	x	x					x	
13	Apoptosis and its relation to AIDs and atherosclerosis				x	x	x					x	
14	Revision and open discussion	x	x	x	x	x	x						
Practical sessions		**a1**	**a2**	**a3**	**a4**	**a5**	**a6**	**b1**	**b2**	**c1**	**c2**	**c3**	**d1**
1	Introduction (General terms of cell biology) Types and parts of microscope							x	x				
2	Micrographs of plant and animal cells at E.M level							x	x				
3	Micrograph of cell membrane at E.M level							x	x				
4	Micrographs of smooth and rough endoplasmic reticulum							x	x				
5	Micrograph of nucleus at E.M level							x	x				
6	Micrograph of Golgi apparatus at E.M level							x	x				
7	Micrograph of lysosomes at E.M level							x	x				
8	Micrograph of mitochondria at E.M level							x	x				
9	Micrograph of cytoskeleton (microtubules)							x	x				
10	Micrograph of cytoskeleton (microfilaments)							x	x				
11	Micrograph of chloroplasts at E.M level							x	x				
12	Micrograph of different stages of cell division							x	x				
13	Activity (Report)												x
14	Activity (Quiz)												

Matrix II of Cell Biology course (2019-2020)												
National Academic Reference Standards NARS		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Weighting of assessment		
						Lecture	Practical session	Self learning	Written exam	Practical exam	Periodical exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a1	Cell theory- Animal cell- Plant cell Prokaryotic cell- Eukaryotic cell	Student book Essential books	x			x		x
2.11	Principles of body function in health and disease states as well as basis of genomic and different biochemical pathways regarding their correlation with different diseases.	A17	a2	Molecular genetics- DNA and RNA synthesis	Student book Essential books Internet	x		x	x		x
				Protein synthesis- Mutation points	Student book Essential books	x			x		x
		A18	a3	Structure of cell membrane Cytoplasm- Transport across membrane Nucleus (Chromatin and chromosomes)	Student book Essential books	x			x		x

	Principles of body function in health and disease states as well as basis of genomic and different biochemical pathways regarding their correlation with different diseases.	A18		Endoplasmic reticulum - Golgi apparatus- Lysosomes- Chloroplasts	Student book Essential books	X			X		X
				Mitochondria- Cytoskeleton- Micro-bodies	Student book Essential books	X			X		X
			a4	Cell growth- Cell division (Mitotic)	Student book Essential books	X			X		
				Cell division (Meiosis) Cell cycle regulation	Student book Essential books	X		X	X		
			a5	Apoptosis-mechanism of apoptosis	Student book Essential books	X			X		
				Necrosis	Student book Essential books	X			X		
				Apoptosis and its relation to cancer	Student book Essential books	X			X		

				Apoptosis and its relation to AIDs and atherosclerosis	Student book Essential books	X			X		
			a6	Apoptosis-mechanism of apoptosis	Student book Essential books	X			X		
				Necrosis	Student book Essential books	X			X		
				Apoptosis and its relation to cancer	Student book Essential books	X			X		
				Apoptosis and its relation to AIDs and atherosclerosis	Student book Essential books	X			X		
3.1	Use the proper pharmaceutical and medical terms and abbrevations and symbols in pharmacy practice.	B1	b1	Introduction (General terms of cell biology)- Types and parts of microscope	Practical notes		X			X	
				Micrographs of plant and animal cells at E.M level			X			X	
				Micrograph of cell membrane at E.M level			X			X	

				Micrographs of smooth and rough endoplasmic reticulum			X			X	
				Micrograph of nucleus at E.M level			X			X	
				Micrograph of Golgi apparatus at E.M level			X			X	
				Micrograph of lysosomes at E.M level			X			X	
				Micrograph of mitochondria at E.M level			X			X	
				Micrograph of cytoskeleton (microtubules)			X			X	
				Micrograph of cytoskeleton (microfilaments)			X			X	
				Micrograph of chloroplasts at E.M level			X			X	
				Micrograph of different stages of cell division			X			X	
			b2	Introduction (General terms of cell biology)- Types and parts of microscope	Practical notes		X			X	
				Micrographs of plant and animal cells at E.M level			X			X	
				Micrograph of cell membrane at E.M level			X			X	
				Micrographs of smooth and rough endoplasmic reticulum			X			X	
				Micrograph of nucleus at E.M level			X			X	
				Micrograph of Golgi			X			X	

				apparatus at E.M level							
				Micrograph of lysosomes at E.M level			X			X	
				Micrograph of mitochondria at E.M level			X			X	
				Micrograph of cytoskeleton (microtubules)			X			X	
				Micrograph of cytoskeleton (microfilaments)			X			X	
				Micrograph of chloroplasts at E.M level			X			X	
				Micrograph of different stages of cell division			X			X	
4.13	Analyze and interpret experimental results as well as published literature. .	C15	c1	Cell growth- Cell division (Mitotic)	Student book Essential books	X			X		
				Cell division (Meiosis) Cell cycle regulation	Student book Essential books	X			X		
			c2	Prokaryotic cell- Eukaryotic cell	Student book Essential books	X			X		X
			c3	Apoptosis-mechanism of apoptosis	Student book Essential books	X			X		
				Necrosis	Student book Essential books	X			X		

				Apoptosis and its relation to cancer	Student book Essential books	x			x		
				Apoptosis and its relation to AIDs and atherosclerosis	Student book Essential books	x			x		
5.9	Implement writing and presentation skills	D11	d1	Activity (report)	Internet			x		x	

Course Coordinators: **Prof. Dr. Sahar El-Swefy**

Head of department: **Prof. Dr. Sahar El-Swefy**

Date:

COURSE SPECIFICATIONS

Mathematics and Statistics

First level –Semester 1

2019-2020

Course Specification of Mathematics and Statistics (2019-2020)

University : Zagazig **Faculty : Pharmacy**

A- Course specifications:

- Program (s) on which the course is given: Bachelor of Pharmacy (Clinical Pharmacy)
- Major or Minor element of programs: Major
- Department offering the program: -------
- Department offering the course: Pharmacology and toxicology department
- Academic year Level: First level -First semester
- Date of specification approval: October 2019

B- Basic information:

Title: Mathematics and Statistics (MS 101)
Lectures: 2hr
Practical: ----
Tutorials:----
Total: 2hr

C- Professional information:

Overall aim of the course:
On completion of the course, the students will be able to:
Build up comprehensive knowledge on the basic mathematical and statistical procedures which are required in pharmaceutical studies.

1. Intended learning outcomes (ILOs)

Knowledge and Understanding	
a1	Describe the nature of data and fundamentals of mathematics.
a2	Estimate the value of mean, standard deviation and standard error and methods for comparison of 2 mean values
C- Intellectual skills:	
c1	Analyze statistical data to compare between 2 mean values and make decision about the difference between them.
D. General and Transferable skills	
d1	Analyze and find effective solutions for a given problem.

2. Course Contents

Week No.	Lecture contents (2 hrs/lec.)
1	Introduction to Mathematics
2	Algebra1 - The Binomial Theory - Fitting of Curves
3	Algebra-2 - Partial Fractions - Solution of Linear Equations Using Determinants or Matrices
4	Differential Calculus
5	Fundamentals Theories on Differentiation Related Rates – Drawing of Curves
6	Periodic exam
7	Introduction to statistics Presentation of data
8	Descriptive statistics
9	Gaussian distribution and Probability
10	Comparisons of two means - t tests
11	Analysis of Variance (ANOVA)
12	Chi-square test
13	Regression and correlation analysis
14	Revision & discussion
15	Final exam

Teaching and Learning Methods:

- Lectures

Student Assessment methods:

- Written exams to assess: a1, a2, c1, d1

Assessment schedule:

Assessment (1): Periodical exam	Week 6
Assessment (2): Final Written exam	Week 15

Weighting of Assessment:

Assessment method	Marks	Percentage
Periodical exam	25	25%
final Written exam	75	75%
TOTAL	100	100%

Facilities required for teaching and learning:

Black (white) boards, data show.

H- List of References:

1- Course Notes: Student book of Mathematics and Statistics approved by Pharmacology and Toxicology department

2- Essential Books:

Danial W (1995). Biostatistics: A foundation for analysis in health science. (6th ed.) New York: John Wipij& sensing

3- Recommended Books

Snedector, G W & Cochran W G (1980): Statistical methods, seventh edition. The Iowa Stat University Press, Ames, Iowa.

4- Periodicals and websites:

http://canadianpharmacistsletter.therapeuticresearch.com/ce/ceCourse.asp...

Course Coordinator: Assisstant Prof. Dr. Waleed Barakat

Head of Department: Prof. Mona Foad

Date: م 2019 / 10/ تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

Matrix I of Mathematics and statistics course

Course Contents		ILOs of Biochemistry 1 course			
		Knowledge and understanding		Intellectual skills	General and transferable skills
Lectures		a1	a2	c1	d1
1	Introduction to Mathematics	x			
2	Algebra1(The Binomial Theory, Fitting of Curves	**x**			
3	Algebra-2 (Partial Fractions, Solution of Linear Equations, Using Determinants or Matrices)	x			x
4	Differential Calculus	x			x
5	Fundamentals Theories on Differentiation Related Rates – Drawing of Curves	x			
6	Introduction to statistics Presentation of data		x		
7	Descriptive statistics		x		x
8	Gaussian distribution and Probability		x		
9	Comparisons of two means - t tests		x	x	x
10	Analysis of Variance (ANOVA)		x	x	x
11	Chi-square test		x	x	x
12	Regression and correlation analysis		x	x	x
13	Revision	x	x	x	x

Matrix II of Mathematics and statistics course							
National Academic Reference Standards (NARS)		**Program ILOs**	**Course ILOs**	**Course contents**	**Sources**	**Teaching and learning methods**	**Method of assessment**
						Lecture	Written exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice	A1	a1	Mathematics topics (introduction, Algebra-1, Algebra-2, Differential Calculus, Fundamentals Theories on Differentiation)	Student book	x	x
2.17	Methods of biostatistical analysis and pharmaceutical calculations	A27	a2	Statistics topics (Introduction, Presentation of data, Descriptive statistics, Gaussian distribution and Probability, Comparisons of two means - t tests, Analysis of Variance, Chi-square test, Regression and	Student book	x	x

				correlation analysis)			
4.13	Analyze and interpret experimental results as well as published literature	C15	c1	Analysis of Variance, Chi-square test, Regression and correlation analysis	Student book	X	X
5.10	Implement writing and thinking, problem- solving and decision- making abilities	D12	d1	Mathematics and statistics topics	open discussion	X	X

COURSE SPECIFICATION

English language

First level –Semester 1

2019-2020

Course specification of English language

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of Pharmacy (clinical pharmacy)

Major or Minor element of programs: Minor

Department offering the program: -------

Department offering the course: English Department/ Faculty of Education

Academic year/ Level: level 1 /First semester

Date of specification approval: September 2019

B- Basic information:

Title: English language Code: EN101

Credit Hours: ---

Lectures: 2 hr/week

Practical: ---

Tutorials: ---

Total: 2 hr/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to Use English language ad medical terms in pharmacy study and practice

2-Intended Learning Outcomes of English and medical terms (lLOs):

A- Knowledge and Understanding	
a1	Illustrate the basis of English language and medical terms used in pharmacy practice.
a2	Describe the structure of medical terms.
B- Professional and Practical Skills	
b1	Select the suitable medical terms used in pharmacy practice.
b2	Use effectively the medical and pharmaceutical terminologies, medical abbreviations, idioms, suffixes and prefixes.
C- Intellectual Skills	
c1	Analyze and interpret information on a medical record or prescription.
D- General and Transferable Skills	
d1	Improve written and oral communication with health care professionals.
d2	Develop writing and presentation skills.

D- Contents:

Week No.	Lecture (1hr/week)
1	- Part1: Integrated technology is the key to success in hospital pharmacies
2	- Part2: Integrated technology is the key to success in hospital pharmacies + exercises
3	- Part1: Swine flu fears prompt run on UK pharmacies
4	- Part2: Swine flu fears prompt run on UK pharmacies - Exercises
5	- Part1: History of pharmacy
6	- Part2: History of pharmacy + exercises
7	- Part1: Nuclear pharmacy
8	- Part2: Nuclear pharmacy + exercises
9	- Part1: Online pharmacy
10	- Part2: Online pharmacy + exercises
11	- Part1: Pharmacist

12	- Part2: Pharmacist + exercises
13	- Pharmacy glossary - General revision
14	- Revision
15	Final written exam

E- Teaching and Learning Methods:

- Lectures
- Self learning (exercises….)

F- Student Assessment Methods:

Written exam to assess a1, a2, b1, b2, c1, d1,d2

Assessment schedule:

Assessment (1): Written exams	Week 15

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	50	100%
TOTAL	50	100%

G- Facilities Required for Teaching and Learning:

- Black (white) board, overhead projectors, Data show.

H- List of References:

1- Course Notes: Student book of English approved by English department 2019

2- Essential Books (Text Books)

i- Marjorie C. Willis (1996): Medical Terminology, the basic language of health care, first edition. Williams & Wilkins Press, Baltimore.

3. Recommended Books

Andrew R. Hutton (2002): An introduction to medical terminology for health care, A self-teaching package, third edition. Churchill-Livingstone-Elsevier Press, Edinburgh.

Course Coordinators: Prof. Dr. Mohamed Hassan Ibrahim

Date: **/9/2019**

Matrix I of English and Medical terms course

Course Contents		ILOs of English and Medical terms course						
		Knowledge and understanding		Professional and practical skills		Intellectual skills	General and transferable skills	
		a1	a2	b1	b2	c1	d1	d2
1	Part1: Integrated technology is the key to success in hospital pharmacies	x	x					
2	Part2: Integrated technology is the key to success in hospital pharmacies + exercises	x	x					
3	Part1: Swine flu fears prompt run on UK pharmacies						x	
4	Part2: Swine flu fears prompt run on UK pharmacies + exercises						x	
5	Part1: History of pharmacy							x
6	Part2: History of pharmacy + exercises							x
7	Part1: Nuclear pharmacy	x	x					
8	Part2: Nuclear pharmacy + exercises	x	x					
9	Part1: Online pharmacy			x	x			
10	Part2: Online pharmacy + exercises			x	x			
11	Part1: Pharmacist			x	x	x		
12	Part2: Pharmacist			x	x	x		
13	Pharmacy glossary and General revision			x	x	x		

Matrix II of English language course

National Academic Reference Standards NARS		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods		Method of assessment
						Lecture	Self learning	Written exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a1,a2	Part1: Integrated technology is the key to success in hospital pharmacies	Student book	x		x
				Part2: Integrated technology is the key to success in hospital pharmacies + exercises	Student book, essential book	x	x	x
				Part1: Nuclear pharmacy	Student book	x		x
				Part2: Nuclear pharmacy + exercises	Student book, essential book	x	x	x
3.1	Use the proper pharmaceutical and medical terms and abbreviations and symbols in pharmacy practice.	B1	b1,b2	Part1: Online pharmacy	Student book	x		x
				Part2: Online pharmacy + exercises	Student book, essential book	x	x	x
				Part1: Pharmacist	Student book	x		x

				Part2: Pharmacist + exercises	Student book, essential book	x	x	x
				Pharmacy glossary and General revision	Student book	x		x
4.14	Analyze and evaluate evidence-based information needed in pharmacy practice	C16	c1	Pharmacist Pharmacy glossary	Recommended book	x	x	x
5.1	Communicate clearly by verbal and written means	D1	d1	Part1: Swine flu fears prompt run on UK pharmacies	Student book	x		x
				Part2: Swine flu fears prompt run on UK pharmacies + exercises	Student book, essential book	x	x	x
5.10	Implement writing and thinking, problem- solving and decision-making abilities.	D12	d2	Part1: History of pharmacy	Student book	x		x
				Part2: History of pharmacy + exercises	Student book, essential book	x	x	x

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Course Coordinators: Prof. Dr. Mohamed Hassan Ibrahim

Date: **/9/2019**