

COURSE SPECIFICATIONS

Faculty of Pharmacy

Bachelor of pharmacy

Second year – First Term

2017-2018

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COURSE SPECIFICATIONS

Analytical Chemistry (3)

Second Year – First Term

2017-2018

Course Specification of Analytical chemistry (3)

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

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: -----

Department offering the course: Analytical Chemistry

Academic year / Level: Second year / First term

Date of specification approval: 27 August 2017

B- Basic information:

Title: Analytical Chemistry (3) Code: AC213

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to outline theoretical bases and applications of acid-base, redox, precipitometric and complexometric reactions.

2-Intended Learning Outcomes of Analytical Chemistry (3) (ILOs):

A- Knowledge and Understanding	
a1	Illustrate theories and mechanisms of neutralization, redox, precipitometric and complexometric reactions.
a2	Describe the suitable method and the optimum conditions for determination of different compounds.
a3	Demonstrate the methods of converting resulting analytical data into concentrations.
B- Professional and Practical skills	
b1	Handle and dispose chemicals safely.
b2	Apply neutralization, redox, precipitometric and complexometric reactions in determination of some inorganic and organic compounds and their mixtures.
C- Intellectual skills	
c1	Convert obtained analytical results into concentrations.
c2	Calculate pH, oxidation number, and potential of different systems and during titration
c3	Decide the use of the most appropriate procedures for determination of different compounds and their mixtures
D- General and Transferable skills	
d1	Work as member of team.
d2	Adopt safety guidelines.
d3	Perform tasks within time limit.

D- Contents:

Week No.	Lecture (2 hrs/week)	Practical session (2hrs/week)
1	- Theoretical bases of acid base reactions and pH calculations	- Safety guidelines - Standardization of strong acids and bases
2	- Buffer solutions and neutralization indicators -Types of acid base indicators	- Determination of boric acid, borax and their mixture
3	- Acid –base titration curve	- Determination of sodium carbonate and bicarbonate
4	- Application of neutralization reactions	- Determination of HCl/HAC mix. And BaCl ₂
5	- Non-aqueous titrations	- Determination of oxalic acid and oxalates
6	Midterm exam	
7	- Theory of redox reactions	- Practical exam (1)
8	- Titration curves and determination of E.P. in redox reactions	- Determination of ferric and ferrous
9	- Redox reactions involving I ₂	- Determination of mixture of arsenate and arsenite
10	- Application of redox reactions	- Determination of potassium Ferrocyanide
11	- how ppt. is formed -factors affecting precipitation	- Determination of chloride by Mohr's method.
12	-use of indicator -application of precipitmetric titration	- Determination of calcium and magnesium mixture - Activity
13	- Theory of complexometry and complexometric indicators	- Practical exam (2)
14	- Types of complexometric titrations and their applications	
15	- Revision & Open Discussion	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions

- Demonstration videos
- Problem solving.
- Discussion sessions
- Self-learning (activity)

F- Student Assessment Methods

- | | | |
|-------------------|-----------|-----------------|
| 1- Written exam | to assess | a1,a2,a3,c2,c3 |
| 2- Practical exam | to assess | b1, b2,d1,d2,d3 |
| 3- Activity | to assess | d3 |
| 4- Oral exam | to assess | a1,a2,a3,c2,c3 |

Assessment Schedule:

Assessment (1): Written exams	Week 6,16
Assessment (2): Activity	Week 12
Assessment (3): Practical exams	Week 7,13
Assessment (4): Oral exams	Week 16

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	50	50%
Practical exam	20	20%
Oral exam	15	15%
Periodical exam	10	10%
Activities	5	5%
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 Analytical chemistry (3) approved by Analytical chemistry department (2017).

- Practical notes of Analytical chemistry (3) approved by Analytical chemistry department (2017).

2- Essential (textbooks):

- i- Vogel's Textbook of Quantitative Chemical Analysis (6th edition); J. Mendham, et al., Addison Wesley Publishing Co., 2000
- ii- Quantitative Chemical Analysis (Sixth Edition); Daniel C. Harris. (2002).

3- Recommended books:

- i. G. D. Christian, "Analytical Chemistry ", John-Wiley and Sons, Inc New York (1994).
- ii. D. A. Skoog and d. M. west, "Fundamentals of Analytical Chemistry", 7th ed CBS Publishing Asia Ltd (2000).
- iii. J.S Frits, Quantitative Analytical Chemistry (fifth edition). (2004).

4- Periodicals, Web Sites, etc

<http://chemwiki.ucdavis.edu/>

<http://en.wikipedia.org/>

www.Pubmed.Com and

www.sciencedirect.com

Course Coordinators: Prof. Dr. Hisham Ezzat

Head of Department: Prof. Dr. Magda El Henawee

Date: تم مناقشة وإعتماد توصيف المقرر من مجلس القسم بتاريخ 2017/8/27م

Matrix I of Analytical Chemistry 3 course

Course Contents		ILOs of the course										
		Knowledge and understanding			Professional and practical skills		Intellectual skills			General and transferable skills		
		a1	a2	a3	b1	b2	c1	c2	c3	d1	d2	d3
Lectures												
1	Theoretical bases of acid base reactions and pH calculations	x		x								
2	- Buffer solutions and neutralization indicators -Types of acid base indicators		x									
3	Acid –base titration curve		x									
4	Application of neutralization reactions		x	x					x			
5	Nonaqueous titrations		x	x								
6	Theory of redox reactions	x										
7	Titration curves and determination of E.P. in redox reactions		x	x								
8	Redox rections involving I ₂		x									
9	Application of redox reactions		x	x					x			

10	- how ppt. is formed -factors affecting precipitation	x										
11	-use of indicator -application of precipitmetric titration		x	x								
12	Theory of complexometry and complexometric indicators	x							x			
13	- Types of complexometric titrations and their applications		x	x					x			
Practical sessions												
1	Safety guidelines				x						x	
2	Standardization of strong acids and bases					x	x	x		x		x
3	Det. Of boric acid, borax and their mixture					x	x	x		x		x
4	Det. Of sodium carbonate and bicarbonate					x	x	x	x	x		x
5	Det. Of HCl/HAC mix. And BaCl ₂					x	x	x	x	x		x
6	Det. Of oxalic acid and oxalates					x	x	x		x		x
7	Det. Of ferric and ferrous Activity					x	x	x		x		x

8	Det of pot. Ferrocyanide					x	x	x		x		x
9	Det. Of mixture of arsenate and arsenite					x	x	x		x		x
10	Det. Of calcium and magnesium mixture					x	x	x		x		x
11	Determination of chloride by Mohr's method.					x	x	x		x		x

Matrix II of Analytical Chemistry 3 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	videos	Problem solving	Written exam	Practical exam	Oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a1	- Theoretical bases of acid base reactions and pH calculations - Theory of redox reactions - Theory of precipitometry and solubility product rule - Theory of complexometry and complexometric indicators	Student book Essential book	X			X		X		X
2.3	Principles of different analytical techniques using GLP guidelines and validation procedures.	A11	a2	- Buffer solutions and neutralization indicators - Color determination of pH and neutralization titration curves - Application of neutralization	Student book Essential book Recommended books Internet	X		X	X	X	X		X

				reactions - Nonaqueous titrations - Titration curves and det. of E.P. in redox reactions - Redox reactions involving I ₂ - Application of redox reactions - Detection of E.P. in precipitometric reactions - Titration curves and applications of complexometric reactions									
2.17	Methods of biostatistical analysis and pharmaceutical calculations	A36	a3	- Theoretical bases of acid base reactions and pH calculations - Application of neutralization reactions - Nonaqueous titrations - Titration curves and determination of E.P. in redox reactions - Application of redox	Student book Essential book	X						X	X

				reactions - Detection of E.P. in precipitometric reactions - Titration curves and applications of complexometric reactions									
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	- Safety guidelines	Practical notes		X		X			X	
3.4	Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B6	b2	- Standardization of strong acids and bases - Det. Of boric acid, borax and their mixture - Det. Of sodium carbonate and bicarbonate - Det. Of HCl/HAC mix. And BaCl ₂ Det. Of oxalic acid and oxalates	Practical notes		X					X	

				<ul style="list-style-type: none"> - Det. Of ferric and ferrous - Det of pot. Ferrocyanide - Det. Of mixture of arsenate and arsenite - Det. Of calcium and magnesium mixture 										
4.3	Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations	C4	c1 c2	<ul style="list-style-type: none"> - Standardization of strong acids and bases - Det. Of boric acid, borax and their mixture - Det. Of sodium carbonate and bicarbonate - Det. Of HCl/HAC mix. And BaCl₂Det. Of oxalic 	Practical notes		X						X	
4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization	C8	c3	<ul style="list-style-type: none"> - Application of neutralization reactions. - Application of redox reactions - Detection of E.P. in precipitometric reactions - Titration curves and 	Student book Essential book Recommended books Internet Practical notes	X	X	X			X	X	X	

	of active substances from different origins.			applications of complexometric reactions - Determination of mixtures as HCl/HAC, carbonate and bicarbonate									
5.3	Work effectively in a team	D4	d1	- Practical sessions	Practical notebook		x	x				x	
5.6	Adopt ethical, legal and safety guidelines	D8	d2	Safety guidelines	Practical notes		x					x	
5.8	Demonstrate creativity and time management abilities	D10	d3	- Practical sessions - Activity	Practical notes Internet		x	x				x	

Course Coordinators: Prof. Dr. Hisham Ezzat

Head of Department: Prof. Dr. Magda El Henawee

Date: تم مناقشة وإعتماد توصيف المقرر من مجلس القسم بتاريخ 27 / 8 / 2017م

COURSE SPECIFICATIONS

Anatomy

Second Year – First Term

2017-2018

Course Specification of Anatomy

University: Zagazig **Faculty:** Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: -----

Department offering the course: Anatomy / Faculty of medicine

Academic year/ Level: Second year/ First term

Date of specification approval: September 2017

B- Basic information:

Title: Anatomy Code: MD210

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 anatomy of body structures.

2-Intended Learning Outcomes of Anatomy (ILOs):

A- Knowledge and Understanding	
a1	Recognize the principles of anatomy, including anatomical terms, anatomical positions and anatomical movements.
a2	Describe surface anatomy of body organs.
B- Professional and Practical skills	
b1	Use the anatomical terms in describing the anatomy of body structure.
C- Intellectual skills	
c1	Evaluate and interpret the radiological pictures of body structures.
c2	Apply the anatomical information in identification of different diseases, including joints and nerve injuries as well as occlusion of blood vessels.
D- General and Transferable skills	
d1	Write and present reports.
d2	Develop critical thinking in describing surface anatomy of important parts of body organs.

D- Contents:

Week No.	Lecture (1 hr/ week)	Practical sessions (1 hr/week)
1	- Introduction (anatomical terms- anatomical positions- anatomical movements)	-Demonstration of scapula - clavicle
2	- Joints and muscular system	- Demonstration of humerus – radius -ulna
3	- Cardiovascular system	- Demonstration of ribs – thoracic vertebra
4	- Respiratory system	- Demonstration of lumbar – cervical vertebra
5	- Lymphatic system	- Demonstration of sternum - sacrum
6	Midterm exam	
7	- Digestive system	- Demonstration of skull - Activity (report)
8	- Urinary system	- Demonstration of mandible
9	- Male genital system	- Demonstration of heart
10	- Female genital system	- Demonstration of kidney – spleen - liver
11	- Endocrine glands	- Demonstration of lung- brain
12	- Nervous system	- Demonstration of hip - femur
13	- Special senses and skin	- Practical exam
14	- Skeletal system and vertebral column	
15	- Revision & Open Discussion	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Self learning (activity, internet search, group discussion...)

F- Student Assessment Methods

- | | | |
|-------------------|-----------|-------------|
| 1- Written exam | to assess | a1,a2,c2 |
| 2- Practical exam | to assess | b1,c1,d1,d2 |
| 3- Activity | to assess | d1 |

Assessment schedule:

Assessment (1): Written exam	Week 6, 16
Assessment (2): Activity	Week 6
Assessment (3): Practical exam	Week 12

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	40 (35 +5)	80%
Practical exam and activities	10	20%
TOTAL	50	100%

G- Facilities Required for Teaching and Learning:

- Black (white) board, Data show, Laboratory bones and models of organs.

H- List of References:

1- Course Notes: Student book of Anatomy approved by Anatomy Department (2017)

2- Essential Books (text books)

Kindersley D.& Medi-Mation: The Concise Human Body Book: An Illustrated Guide to Its Structure, Function and Disorders (2009).

Course Coordinator: Prof. Mohie ElSayed Khaliel

Date: /9/2017

Matrix I of Anatomy course								
Course Contents		ILOs of Anatomy course						
		Knowledge and understanding		Professional and practical skills	Intellectual skills		General and Transferable skills	
Lectures		a1	a2	b1	c1	c2	d1	d2
1	Introduction (anatomical terms- anatomical positions- anatomical movements)	x						
2	Joints and muscular system		x			x		
3	Cardiovascular system		x			x		
4	Respiratory system		x					
5	Lymphatic system		x					
6	Digestive system		x					
7	Urinary system		x					
8	Male genital system		x					
9	Female genital system		x					
10	Endocrine glands		x					
11	Nervous system		x			x		
12	Special senses and skin		x					
13	Skeletal system and vertebral column		x					
Practical sessions								
1	Demonstration of scapula - clavicle			x	x			x
2	Demonstration of humerus –radius -ulna			x	x			x
3	Demonstration of ribs – thoracic vertebra			x	x			x

4	Demonstration of lumbar – cervical vertebra			x	x			x
5	Demonstration of sternum - sacrum			x	x			x
6	Demonstration of skull			x	x			x
7	Demonstration of mandible			x	x			x
8	Demonstration of heart			x				x
9	Demonstration of kidney – spleen - liver			x				x
10	Demonstration of lung- brain			x				x
11	Demonstration of hip - femur			x	x			x
12	Activity (Report)						x	

Matrix II of Anatomy

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.	A4	a1	Introduction (anatomical terms- anatomical positions- anatomical movements)	Student book	x			x	
			a2	Joints and muscular system	Student book	x			x	
				Cardiovascular system	Student book	x			x	
				Respiratory system	Student book	x			x	
				Lymphatic system	Student book	x			x	
				Digestive system	Student book	x			x	
				Urinary system	Student book	x			x	
				Male genital system	Student book	x			x	
				Female genital system	Student book	x			x	
				Endocrine glands	Student book, essential books and internet	x		x	x	
				Nervous system	Student book	x			x	
				Special senses and skin	Student book	x			x	
				Skeletal system and vertebral column	Student book	x			x	
3.1	Use the proper pharmaceutical and medical terms and abbreviations	B1	b1	Demonstration of scapula - clavicle	practical notes		x			x
				Demonstration of humerus –radius -ulna			x			x
				Demonstration of ribs – thoracic vertebra			x			x
				Demonstration of lumbar – cervical vertebra			x			x

	and symbols in pharmacy practice.			Demonstration of sternum - sacrum			x			x
				Demonstration of skull			x			x
				Demonstration of mandible			x			x
				Demonstration of heart			x			x
				Demonstration of kidney – spleen - liver			x			x
				Demonstration of lung- brain			x			x
				Demonstration of hip - femur			x			x
4.13	Analyze and interpret experimental results as well as published literature	C16	c1	Demonstration of scapula - clavicle	Practical notes		x			x
				Demonstration of humerus –radius -ulna			x			x
				Demonstration of ribs – thoracic vertebra			x			x
				Demonstration of lumbar – cervical vertebra			x			x
				Demonstration of sternum - sacrum			x			x
				Demonstration of skull			x			x
				Demonstration of mandible			x			x
4.14	Analyze and evaluate evidence-based information needed in pharmacy practice.	C17	c2	Demonstration of hip - femur	Student book		x			x
				Joints and muscular system		x			x	
				Cardiovascular system		x			x	
5.9	Implement writing and presentation skills	D11	d1	Nervous system	internet	x			x	
				Activity (report)				x		x
5.10	Demonstrate critical thinking, problem-solving and decision-making abilities	D12	d2	Demonstration of scapula - clavicle	practical notes		x			x
				Demonstration of humerus –radius -ulna			x			x
				Demonstration of ribs – thoracic vertebra			x			x
				Demonstration of lumbar – cervical vertebra			x			x
				Demonstration of sternum - sacrum			x			x
				Demonstration of skull			x			x
				Demonstration of mandible			x			x

				Demonstration of heart			x			x
				Demonstration of kidney – spleen - liver			x			x
				Demonstration of lung- brain			x			x
				Demonstration of hip - femur			x			x

Course Coordinator: Prof. Mohie ElSayed Khaliel

Date: /9/2017

COURSE SPECIFICATIONS

Histology

Second Year – First Term

2017-2018

Course Specification of Histology

University: Zagazig **Faculty:** Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: -----

Department offering the course: Histology Department/ Faculty of Medicine

Academic year/ Level: Second year/First term

Date of specification approval: September 2017

B- Basic information:

Title: Histology

Code: MD210

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 describe cellular components, tissues, organs structure and staining techniques and DNA structure.

2-Intended Learning Outcomes of Histology (ILOs):

A- Knowledge and Understanding	
a1	Outline cellular components structure and functions.
a2	Illustrate principles of histological staining techniques.
a3	Demonstrate different types of microscopes and their functions.
a4	Underline DNA and chromosome structure.
a5	Describe histological features of different tissues in normal and pathological conditions as well.
B- Professional and Practical skills	
b1	Use proper medical terms, abbreviation and symbols of histology.
b2	Construct a research study and analyze the results.
C- Intellectual skills	
c1	Evaluate both scientific and library based information.
D- General and Transferable skills	
d1	Write and present reports.
d2	Develop critical thinking, decision-making and problem-solving skills.

D- Contents:

Week No.	Lecture (2hrs/week)	Practical session (2hrs/week)
1	- Types of microscopes (LM&EM) Types of stains Membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes).	Projector slides for: 1- types of microscopes 2- cell membrane 3- mitochondria 4- Golgi bodies 5- rough& smooth endoplasmic reticulum 6- lysosomes
2	- Non-membranous organoids Structure of the nucleus	Projector slides for: 1- ribosomes 2- centrioles 3- cilia and flagella 4- nucleus 5- fat and liver glycogen
3	- DNA structure Chromosomes structure Cell cycle	Projector slides for: 1-Chromosomes (karyotyping)
4	- Epithelial tissues (structure, types, sites)	Projector slides for: 1-Simple epithelium 2-Stratified epithelium
5	- Connective tissues and fibers (structure, types). - Connective tissues proper (structure, types).	Projector slides for: 1-fat cells 2- mast cells 3- adipose c.t. 4- areolar c.t. 5- yellow elastic c.t 6- tendon
6	Midterm exam	

7	- Histological structure of bone and cartilage.	Projector slides for: 1-hyaline and elastic cartilage 2- compact decalcified,ground and spongy bones Practical exam (1)
8	- RBCs and WBCs (histological structure, function)	Projector slides for: blood film showing RBCs and leucocytes
9	- Histological structure of skeletal, smooth and cardiac muscles	Projector slides for: skeletal, smooth and cardiac muscles Activity
10	- Histological structure of neurons, synapse, neurological cells and nerve endings	Projector slides for: nerve trunk (H&E and osmic acid) Projector slides for: 1- aorta 2- medium sized artery and vein 3- basilar artery
11	- Histological structure of arteries and veins	Projector slides for: 1- thymus 2- tonsils 3- spleen 4- lymph node Projector slides for: 1- fundus and pylorus 2- small intestine 3- large intestine
12	- Histological structure of thymus, tonsils, spleen and lymph node	Projector slides for: 1- liver 2- pancreas 3- salivary glands Projector slides for: 1- kidney

		2- trachea 3- lung
13	- Histological structure of tongue, oesophagus, stomach, small and large intestine	Projector slides for: 1- pituitary gland 2- supra-renal gland 3- thyroid and parathyroid glands Practical exam (2)
14	- Histological structure of liver, pancreas and salivary glands	
15	- Histological structure of trachea, lung and kidney - Histological structure of pituitary, supra-renal, thyroid and parathyroid glands	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Self learning (Activities...)

F- Student Assessment Methods

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

Assessment schedule:

Assessment (1): Written exam	Week 6,16
Assessment (2): Activity	Week 8
Assessment (3): Practical exam	Week 6,12

Weighting of Assessment:

Assessment method	Marks	Percentage
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Written exam	40(35+5)	80%
Practical exam and activities	10	20%
TOTAL	50	100%

G- Facilities Required for Teaching and Learning:

- Black (white) board, Data show.

H- List of References:

1- Course Notes: Student book of Histology approved by Histology Department (2017)

2- Essential Books (text books)

Ross M.H.& Pawlina W.: Histology: A Text and Atlas (Histology (Ross)) (2010).

Course Coordinators: Prof. Azza Saeid Ahmad

Date: /9/2017

Matrix I of Histology course											
Course Contents		ILOs of Histology course									
		Knowledge and understanding					Professional and practical skills		Intellectual skills	General and transferable skills	
Lectures		a1	a2	a3	a4	a5	b1	b2	c1	d1	d2
1	Types of microscopes (LM&EM), types of stains, membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes).	x	x	x							
2	Non-membranous organoids, structure of the nucleus	x									
3	DNA structure, chromosomes structure, cell cycle				x				x		
4	Epithelial tissues (structure, types, sites)					x					
5	Connective tissues and fibers (structure, types), connective tissues proper (structure, types)					x					
6	Histological structure of bone and cartilage					x					
7	RBCs and WBCs (histological structure, function)					x					
8	Histological structure of skeletal, smooth and cardiac muscles					x					
9	Histological structure of neurons, synapse, neurological cells and nerve endings					x			x		
10	Histological structure of arteries and veins					x					
11	Histological structure of thymus, tonsils, spleen and lymph node					x					
12	Histological structure of tongue, oesophagus, stomach, small and large intestine					x					
13	Histological structure of liver, pancreas and salivary glands					x					
14	Histological structure of trachea, lung and kidney					x					
15	Histological structure of pituitary, supra-renal, thyroid and parathyroid glands					x					
Practical sessions											

1	Projector slides for: types of microscopes, cell membrane, mitochondria, Golgi bodies, rough & smooth endoplasmic reticulum and lysosomes						X				
2	Projector slides for: ribosomes, centrioles, cilia and flagella, nucleus, fat and liver glycogen						X				
3	Projector slides for: Chromosomes (karyotyping)						X				
4	Projector slides for: Simple epithelium, Stratified epithelium							X			
5	Projector slides for: fat cells, mast cells, adipose c.t., areolar c.t., yellow elastic c.t., tendon							X			
6	Projector slides for: hyaline and elastic cartilage, compact decalcified, ground and spongy bones							X			
7	Projector slides for: blood film showing RBCs and leucocytes							X			
8	Projector slides for: skeletal, smooth and cardiac muscles							X			
9	Projector slides for: nerve trunk (H&E and osmic acid)							X			
10	Projector slides for: aorta, medium sized artery and vein, basilar artery							X			
11	Projector slides for: thymus, tonsils, spleen, lymph node							X			
12	Projector slides for: fundus and pylorus, small intestine, large intestine							X			
13	Projector slides for: liver, pancreas, salivary glands							X			
14	Projector slides for: kidney, trachea, lung							X			
15	Projector slides for: pituitary gland, supra-renal gland, thyroid and parathyroid glands							X			
16	Activity								X	X	X

Matrix II of Histology									
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.	A4	a1 Types of microscopes (LM&EM), types of stains, membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes).	Student book	x			x	
			Non-membranous organoids, structure of the nucleus						
			a2 Types of microscopes (LM&EM), types of stains, membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes).	Student book	x			x	

2.7	Principles of various instruments and techniques including sampling, manufacturing, packaging, labeling, storing and distribution processes in pharmaceutical industry	A 18	a3	Types of microscopes (LM&EM), types of stains, membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes).	Notebook	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.	A 26	a4	DNA structure, chromosomes structure, cell cycle	Notebook	x			x	
2.12	Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmacotherapeutic	A27	a5	Epithelial tissues (structure, types, sites)	Student book	x			x	
				connective tissues and fibers (structure, types), connective tissues proper (structure, types)						
				Histological structure of bone and cartilage						

	approaches			RBCs and WBCs (histological structure, function) Histological structure of skeletal, smooth and cardiac muscles Histological structure of neurons, synapse, neurological cells and nerve endings Histological structure of arteries and veins Histological structure of thymus, tonsils, spleen and lymph node Histological structure of tongue, oesophagus, stomach, small and large intestine Histological structure of liver, pancreas and salivary glands Histological structure of trachea, lung and kidney Histological structure of pituitary, supra- renal, thyroid and parathyroid glands						
3.1	Use the proper pharmaceutical terms and abbreviations and symbols in pharmacy practice	B1	b1	Projector slides for: types of microscopes, cell membrane, mitochondria, Golgi bodies, rough & smooth endoplasmic reticulum and lysosomes	Practical Notes		x			x

				Projector slides for: ribosomes, centrioles,cilia and falabella, nucleus, fat and liver glycogen						
				Projector slides for: Chromosomes (karyotyping)						
3.11	Conduct research studies and analyze the results	B17	b2	Projector slides for: Simple epithelium,Stratified epithelium	Practical Notes		x			x
				Projector slides for: fat cells, mast cells, adipose c.t., areolar c.t., yellow elastic c.t, tendon						
				Projector slides for: hyaline and elastic cartilage, compact decalcified, ground and spongy bones						
				Projector slides for: blood film showing RBCs and leucocytes						
				Projector slides for: skeletal, smooth and cardiac muscles						
				Projector slides for: nerve trunk (H&E and osmic acid)						
				Projector slides for: aorta, medium sized artery and vein, basilar artery						

				Projector slides for: thymus, tonsils, spleen, lymph node						
				Projector slides for: fundus and pylorus, small intestine, large intestine						
				Projector slides for: liver, pancreas, salivary glands						
				Projector slides for: kidney, trachea, lung						
				Projector slides for: pituitary gland, supra- renal gland, thyroid and parathyroid glands						
4.14	Analyze and evaluate evidence- based information needed in pharmacy practice	C17	c1	Activity DNA structure, chromosomes structure, cell cycle, Histological structure of neurons, synapse, neurological cells and nerve endings	Student book, essential book, internet	x	x	x	x	x
5.9	Implement writing and presentation skills	D11	d1	Activity	Internet		x	x		x
5.10	Demonstrate critical thinking, problem- solving and decision- making abilities	D12	d2	Activity	Internet		x	x		x

Course Coordinators: Prof. Azza Saeid Ahmad

Date: /9/2017

COURSE SPECIFICATIONS

Pharmaceutical Organic Chemistry (3)

Second Year – First Term

2017-2018

Course Specification of Pharmaceutical Organic Chemistry (3)

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: -----

Department offering the course: Pharm. Organic chemistry Department

Academic year/ Level: Second year /First term

Date of specification approval: 28/8 /2017

B- Basic information:

Title: Pharmaceutical Organic Chemistry (3) Code: POC212

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to illustrate the structure and synthesis of alcohols, thiols, phenols, aldehydes, ketones, carboxylic acid, and their derivatives and carbohydrates chemistry

2-Intended Learning Outcomes of Pharmaceutical Organic Chemistry

(3) (ILOs):

A- Knowledge and Understanding	
a1	Demonstrate the principles of chemistry of alcohols, thiols, ethers, epoxide phenols, aldehydes, ketones, carboxylic acids/derivatives and carbohydrates
a2	Predict the nomenclature of each class of organic compounds
a3	Outline different synthetic routes of alcohols, thiols, ethers, epoxide, phenols, aldehydes, ketones, carboxylic acids and pharmaceutically related compounds
B- Professional and Practical skills	
b1	Handle basic laboratory equipments and chemicals effectively and safely.
b2	Identify qualitatively phenols, aldehydes, ketones, carboxylic acids and carbohydrate.
b3	synthesize/purify different target compounds using the previous precursors
C- Intellectual skills	
c1	Select suitable methods of identification of phenols, aldehydes, ketones, carboxylic acids and carbohydrates.
c2	Suggest different chemical reactions of alcohols, ethers, epoxide, phenols, aldehydes, ketones, carboxylic acids as precursors.
c3	Classify organic compounds according to their chemical properties.
c4	Suggest different synthetic pathways for designing pharmaceutically active compounds starting from phenols, alcohols, aldehyde, ketone, carboxylic acids and derivatives.
D- General and Transferable skills	
d1	Communicate effectively with others
d2	Demonstrate team working and time management skills
d3	Implement writing skills through lab reports and discussion of results.

D- Contents:

Week No.	Lecture contents (2hrs/week)	Practical session (2 hrs/ week)
1	- Alcohols and phenols: classification. - Alcohols: nomenclature and preparations.	Laboratory safety measures
2	- Alcohols: Synthesis, chemical reactions and physical properties - Thiols: synthesis and chemical reactions	Identification of phenol
3	- Phenols: physical properties and chemical reactions, phenol derivatives of pharmaceutical interest.	Synthesis of tribromophenol
4	- Ethers (aliphatic and aromatic): nomenclature, preparations, chemical properties, ethers of pharmaceutical interest	Identification of acetone and benzaldehyde
5	- Aldehydes (aliphatic and aromatic): nomenclature, synthesis	preparation of :Dibenzalacetone
6	Midterm exam	
7	- Ketones (aliphatic and aromatic): nomenclature and synthesis	- Identification of aniline
8	Aldehydes and Ketones (aliphatic and aromatic): chemical reactivity	Synthesis of Schiff's base
9	Carboxylic acid (aliphatic and Aromatic): nomenclature, preparations	✓ Identification of salicylic acid. ✓ preparation of aspirin
10	Carboxylic acid (Aliphatic and Aromatic): physical and chemical properties.	Identification of glucose, fructose, lactose, sucrose and starch
11	Carboxylic acid (Aliphatic and Aromatic): chemical reactivity	✓ Preparation of fructosazone
12	Carboxylic acid derivatives (Aliphatic and Aromatic): nomenclature, synthesis	preparation of β -pentaacetylglucose

	and physical properties and chemical reactions	
13	Carbohydrates nomenclature	practical exam
14	Carbohydrates chemical reactivity	practical exam
15	Open discussion& revision	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions

F- Student Assessment Methods

- 1- Written exam to assess a1, a2, a3, c1, c2, c3, c4
- 2- Practical exam to assess b1, b2,b3,d3
- 3- Oral exam to assess a1, a2, a3,c1, c2, c3, c4, d1
- 4- Student participation within labs to assess d1, d2, d3

Assessment schedule:

Assessment (1): Written exams	Week 6, 16
Assessment (2): student participation within labs	each lab
Assessment (3): Practical exams	Week 13, 14
Assessment (4): Oral exams	Week 16

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	60	60%
Practical exam and student participation	25	25%
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 pharmaceutical organic chemistry approved by pharmaceutical organic chemistry department **2017-2018**.

2- Essential Books:

i- Organic Chemistry (eighth edition); Solomons T.W.G. & Fryhle C.B.; John Wiley and Sons Inc., USA (2004).

3- Recommended Books:

i- Organic Chemistry, Second Edition, Bhupinder Mehta and Manju Mehta (2015).

Course Coordinator: Prof.dr.Hanan Abdel-Razik Abdel-Fattah

Head of Department: Prof.dr.Hanan Abdel-Razik Abdel-Fattah

Date 28/8 / 2017 تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

			Matrix I of Pharmaceutical organic chemistry 3 course												
Course Contents			ILOs of pharmaceutical organic chemistry 3 course												
			knowledge and understanding			Professional and practical skills			Intellectual skills				General and transferable skills		
			a1	a2	a3	b1	b2	b3	c1	c2	c3	c4	d1	d2	d3
Lectures			a1	a2	a3	b1	b2	b3	c1	c2	c3	c4	d1	d2	d3
1	Alcohols and phenols: classification,alcohols nomenclature and prepration		x	x	x				x	x	x	x			
2	Alcohols chemical and physical proparties,thiols synthesis and chemistry		x	x	x				x	x	x	x			
3	Phenols:nomenclature and preparations.		x	x	x				x	x	x	x			
4	Phenols:physical and chemical proparties ,deriv. of pharmaceutical interest.		x	x	x				x	x	x	x			
5	Ethers(aliphatic and aromatic);nomenclature,preparations,chemistry and derv.of pharmaceutical interest		x	x	x				x	x	x	x			
6	Aldehydes (aliphatic and aromatic): nomenclature, synthesis		x	x	x				x	x	x	x			
7	Ketones(aliphatic and aromatic): nomenclature and synthesis		x	x	x				x	x	x	x			
8	Aldehydes (aliphatic and aromatic): chemical reactivity		x	x	x				x	x	x	x			
9	Ketones (aliphatic and aromatic): chemical reactivity		x	x	x				x	x	x	x			
10	Carboxylic acid (Aliphatic and Aromatic): Nomenclature, preparation		x	x	x				x	x	x	x			
11	Carboxylic acid (Aliphatic and Aromatic): Physical and chemical properties		x	x	x				x	x	x	x			

12	Carboxylic acid (Aliphatic and Aromatic): chemical reactivity	x	x	x				x	x	x	x			
13	Carboxylic acid derivatives:nomenclature synthesis and physical proparties.	x	x	x				x	x	x	x			
14	Carboxylic acid derivatives:chemical reactivity,nitrils and carbonic acid derivatives.	x	x	x				x	x	x	x			
Practical sessions														
1	Laboratory safty measurment				x	x	x					x	x	x
2	Identification of phenol				x	x	x					x	x	x
3	Synthesis of tribromo-phenol				x	x	x					x	x	x
4	Identification of acetone and benzaldhyde				x	x	x					x	x	x
5	preparation of :Dibenzalacetone				x	x	x					x	x	x
6	Identification of aniline				x	x	x					x	x	x
7	Synthesis of Schiff's base				x	x	x					x	x	x
8	✓ Identification of salicylic acid. preparation of aspirin				x	x	x					x	x	x
9	✓ Identification of glucose, fructose, lactose, sucrose and starch				x	x	x					x	x	x
10	✓ Preparation of fructosazone				x	x	x					x	x	x
11	✓ preparation of β -pentaacetylglucose				x	x	x					x	x	x

Matrix II of Pharmaceutical organic chemistry 3 course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods		Method of assessment			
						Lecture	Practical session	student participation	Written exam	Practical exam	Oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a1	Alcohols and phenols: classification, preparation	Student book Essential books	x			x		x
				Alcohols and phenols: Chemical and physical properties		x			x		x
				Hydroxyl compounds of pharmaceutical interest, thioalcohols	Student book Essential books Recommended books Internet	x			x		x
				Ethers (aliphatic and aromatic): classifications, preparations.	Student book Essential books	x			x		x
				Ethers (aliphatic and aromatic): Chemical properties, ethers of pharmaceutical interest		x			x		x
				Aldehydes (aliphatic and aromatic): nomenclature, synthesis		x			x		x
				Ketones(aliphatic and aromatic): nomenclature and synthesis		x			x		x

				Aldehydes (aliphatic and aromatic): chemical reactivity		x			x		x
				Ketones (aliphatic and aromatic): chemical reactivity		x			x		x
				Carboxylic acid (Aliphatic and Aromatic): Nomenclature, preparation		x			x		x
				Carboxylic acid (Aliphatic and Aromatic): Physical and chemical properties		x			x		x
				Carboxylic acid (Aliphatic and Aromatic): chemical reactivity		x			x		x
				Carboxylic acid derivatives (Aliphatic and Aromatic): nomenclature, synthesis and chemical properties.		x			x		x
2.5	Principles of drug design, development and synthesis.	A15	a2	Alcohols and phenols: classification, preparation	Student book Essential books	x			x		x
			a3	Hydroxyl compounds of pharmaceutical interest, thioalcohols	Student book Essential books Recommended books Internet	x			x		x
				Ethers (aliphatic and aromatic): classifications, preparations.	Student book Essential books	x			x		x
				Aldehydes (aliphatic and aromatic): nomenclature, synthesis		x			x		x
				Ketones(aliphatic and aromatic): nomenclature and synthesis		x			x		x

				Carboxylic acid (Aliphatic and Aromatic): Nomenclature, preparation		X			X		X
				Carboxylic acid derivatives (Aliphatic and Aromatic): nomenclature, synthesis and chemical properties.		X			X		X
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	Laboratory safety measures	Practical notes		X	X		X	
				Identification of phenol							
				Synthesis of tribromo-phenol							
				Identification of acetone and benzaldehyde							
				preparation of :Dibenzalacetone							
				Identification of aniline			X	X		X	
	Synthesize, purify, identify, and/or standardize active substances from different origins.	B6	b2	Synthesis of Schiff's base							
			b3	✓ Identification of salicylic acid. preparation of aspirin							
				Identification of glucose, fructose, lactose, sucrose							

				and starch							
				Preparation of fructosazone							
				preparation of β -pentaacetylglucose							
4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	C7	c1	Identification of alcohols, phenols, aldehydes, ketones, carboxylic acid and synthesis of different target compounds	Practical notes		x			x	
		C8	c2	Alcohols and phenols: classification, preparation	Student book Essential books	x			x		x
				Hydroxyl compounds of pharmaceutical interest, thioalcohols	Student book Essential books Recommended books Internet	x			x		x
			c3	Ethers (aliphatic and aromatic): classifications, preparations.	Student book Essential books	x			x		x
				Aldehydes (aliphatic and aromatic): nomenclature, synthesis		x			x		x
			c4	Ketones(aliphatic and aromatic): nomenclature and synthesis		x			x		x
				Carboxylic acid (Aliphatic and Aromatic): Nomenclature, preparation		x			x		x

				Carboxylic acid derivatives (Aliphatic and Aromatic): nomenclature, synthesis and chemical properties.		x			x		x
				Identification of alcohols, phenols, aldehydes, ketones, carboxylic acid and synthesis of different target compounds	Practical notebook		x	x		x	
5.3	Work effectively in team	D4	d1	Identification of alcohols, phenols, aldehydes, ketones, carboxylic acid and synthesis of different target compounds	Practical notebook		x	x		x	
5.6	Adopt ethical, legal and safety guidelines	D8	d2	Laboratory safety measures	Practical notes		x	x			
				Identification of alcohols, phenols, aldehydes, ketones, carboxylic acid and synthesis of different target compounds			x	x		x	
5.8	Demonstrate creativity and time management abilities	D10	d3	Identification of alcohols, phenols, aldehydes, ketones, carboxylic acid and synthesis of different target compounds	Practical notes		x	x		x	

Course Coordinator: Prof.dr.Hanan Abdel-Razik Abdel-Fattah

Head of Department: Prof.dr.Hanan Abdel-Razik Abdel-Fattah

Date 28/8 / 2017 تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

COURSE SPECIFICATIONS

Pharmaceutics 3

Second Year – First Term

2017-2018

Course specification of Pharmaceutics-3

University: Zagazig

Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: -----

Department offering the course: Pharmaceutics Department

Academic year Level: Second year/First semester

Date of specification approval: 3 September 2017

B- Basic information:

Title: Pharmaceutics-3

Code: **PC212**

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 4 hrs/week

C- Professional information:

1-Overall aim of the course

On completion of the course, the student will be able to illustrate types, preparation methods and applications of different disperse systems as well as different topical , transdermal and cosmetic preparations.

2-Intended Learning Outcomes of pharmaceuticals-3 (ILOs)

A- Knowledge and Understanding	
a1	Enumerate different disperse systems
a2	Describe characters of the ideal emulsions, suspensions, colloids, creams, ointments, gels, pastes and other cosmetics preparations
a3	Describe different preparation methods of emulsions, suspensions, colloids, creams, ointments, gels, pastes and other cosmetics preparations
a4	Illustrate the ideal characters for packaging, labeling, storing and distribution process in industry
a5	Outline the ideal characters of Transdermal drug delivery systems
B- Professional and Practical skills	
b1	Apply the general precautions that should be followed before and during practical work
b2	Handle pharmaceutical preparations safely
b3	Formulate different pharmaceutical dosage forms safely and effectively
C- Intellectual skills	
c1	Compare between different properties of different dosage forms
D- General and Transferable skills	
d1	Communicate effectively with others
d2	Demonstrate time management, team work and critical thinking skills

D- Contents:

Week No.	Lecture contents (2hrs/week)	Practical session (2 hrs/week)
1	- Types of emulsion - Theories of emulsification	- Methods of preparation of emulsions- wet method
2	- Emulsifying agents - Stability of emulsions	- Methods of preparation of emulsions- dry method
3	- Introduction to disperse system	- Methods of preparation of emulsions -Bottle method
4	- Reasons for preparing suspension - Characters of ideal suspension	- Determination of sedimentation rate
5	- Formulation and evaluation of suspensions - Stability of suspensions	-Difference between flocculated and deflocculated suspensions
6	Midterm exam	
7	- Pharmaceutical application of colloids - Types of colloidal systems	Practical revision
8	-Properties of colloids -Stability of colloids	-Preparation of Cold cream (Lab evaluation)
9	- Transdermal drug delivery: structure and function of the skin, mechanism of drug transport through the skin	- Preparation of Vanishing cream (Lab evaluation)
10	- Factors affecting percutaneous absorption (biological and physicochemical factors)	- Preparation of sulfur ointment (Lab evaluation)
11	-Transdermal therapeutic patches(TTS)	- Preparation of White field ointment (Lab evaluation) - Activity
12	- Types of hair	- Preparation of Unna's paste - Preparation of Tooth paste
13	- Hairs preparations	- Practical exam
14	- Nail lacquers	
15	- Revision	

E- Teaching and Learning Methods:

- Lectures
- Practical session

F- Student Assessment methods:

- 1- Written exams to assess: a1, a2, a3, a4, a5, c1, d2
- 2- Practical exam & students participation to assess: b1, b2, b3, d1, d2
- 3- Oral exam to assess: a1, a2, a3, a4, a5, c1, d1

Assessment schedule

Assessment (1): Written exams	Week 6,16
Assessment (2): Practical exam	Week 13
Assessment (3): Student participation	each lab
Assessment (4): Oral exam	Week 16

Weighting of Assessment

Assessment method	Marks	Percentage
Written exam	60	60%
Practical exam and activities	25	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, glass ware, instruments, digital balance, water bathes

H- List of References:

- 1- **Course Notes:** Student book of pharmaceutics-3 approved by

pharmaceutics department (2017).

2- Essential Books:

- i- Physical pharmacy, Martin, A., 4th edition, Philadelphia, London. (1993).
- ii- The science of dosage form design, Aulton, M. E., 2nd edition, Churchill Livingstone, London. (2002).
- iii- Pharmaceutical Dosage Forms: Rational design and formulation with excipients, Larry L. Augsburger, Stephen W. Hoag, Informa Healthcare USA, (2008)

3- Recommended Books:

- i- Remington's Pharmaceutical Science. Alfonso, Gennaro, R., 17th edn, Mack Publishing Company, USA. (1985).
- ii- Handbook of Pharmaceutical Manufacturing Formulations: Liquid products, Sarfaraz Niazi, Sarfaraz K. Niazi, CRC Press, (2004).

4- Periodicals and websites:

Journal of pharmaceutical sciences

www.Pubmed.com

www.Sciencedirect.com

Course Coordinators: Prof. Dr. Hanaa Abdel Fattah ElGhamry

Head of Department: Prof. Dr. Nagia Ahmed El-Megrab

Date: تم مناقشة واعتماد توصيف المقرر من مجلس القسم بتاريخ 3 / 9 / 2017 م

Matrix - I of Pharmaceutics -3 course												
Course Contents		ILOs of Pharmaceutics -3 course										
		Knowledge and understanding					Professional and practical skills			Intellectual skills	Transferable and general skills	
Lectures		a1	a2	a3	a4	a5	b1	b2	b3	c1	d1	d2
1	-Types of emulsion		x	x	x							
	-Theories of emulsification		x	x	x							
2	-Emulsifying agent		x	x	x							
	Stability of emulsions		x	x								
3	Introduction to disperse system	x										
4	-Reasons for preparing suspension		x	x								
	-Characters of ideal suspension		x	x								
5	Formulation and evaluation of suspensions			x	x	x				x		
	‘-Stability of suspensions			x								
	-Pharmaceutical application of colloids		x	x								
	-Types of colloidal systems		x	x								
7	-Properties of colloids		x	x	x							
	-Stability of colloids	x										
8	Transdermal drug delivery systems factors affecting percutaneous absorption	x	x	x								
9	Formulation of semisolid dosage forms(Ointments-Creams-Gels-Pastes)		x	x						x		
10	-Transdermal therapeutic patches(TTS)	x	x	x								

11	Cosmetics-Types of hair		x	x								
12	Cosmetics-Hairs preparations		x	x								
13	Cosmetics-nail laquers	x	x	x								
Practical Sessions												
1	a- wet method					x	x	x				
	b-dry method					x	x	x				
	c- Bottle method					x	x	x	x		x	
2	determination of sedimentation rate								x		x	
3	Difference between flocculated and deflocculated suspensions					x	x		x	x		x
4	Cosmetics											
	Preparation of Cold cream					x	x	x				
	Preparation of Vanishing cream					x	x	x			x	
	Preparation of sulfur ointment					x	x	x				
	Preparation of White field ointment					x	x	x				
	Preparation of Unna's paste					x	x	x				
	Preparation of Tooth paste					x	x	x		x	x	
5	Activity											x

Matrix II of Pharmaceutics 3 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	Oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	a1	Introduction to disperse systems Transdermal therapeutic patches	Student book Essential books	x			x		x
		A8	a2	Emulsifying agents Stability of emulsion Stability of suspension Stability of colloids Pharmaceutical application of colloids	Student book Essential books	x			x		x
2.6	Properties of different pharmaceutical dosage forms including novel drug delivery systems.	A16	a3	Types of emulsion Characters of ideal suspension Reasons for preparing Types Suspension of colloidal systems Types of hairs	Student book Essential books	x			x		x
2.7	Principles of various instruments and techniques including sampling, manufacturing,	A18	a4	Theories of emulsification Formulation and evaluation of suspension Preparation of colloids Formulation of semisolid	Student book Essential books	x			x		x

	packaging, labeling, storing and distribution processes in pharmaceutical industry			dosage forms Formulation of hair and nail preparation							
			a5	Packaging, Labeling, storing and distribution for different dosage forms in industry	Student book Essential books	x			x		x
3.2	Handle and dispose chemicals in a safe way.	B2	b1	Transdermal therapeutic patches(TTS) Cosmetics Types of hair Hairs preparations Nail lacquers	Practical notes		x				
			b2	Handle and dispense preparation in safe way in preparation of dosage forms	Practical notes		x				
3.3	Compound, dispense, label, store and distribute medicines effectively and safely	B4	b3	Compounding, dispensing and labeling of different pharmaceutical dosage forms safely and effectively	Practical notes		x			x	
4.1	Apply pharmaceutical knowledge in the formulation of safe and effective medicines as well as in dealing with new drug delivery	C1	c1	Formulation and evaluation of suspensions- Formulation of semisolid dosage forms(Ointments-Creams-Gels- Pastes)	Student book Essential books	x			x		x
				Compare between different methods of formulations for different dosage forms in a	Practical notes		x			x	

	systems.			safe and effective way							
5.5	Practice independent learning needed for continuous professional development	D7	d1	Develop methods for preparation of good pharmaceutical dosage forms	Internet			x			
5.10	Implement writing and thinking, problem- solving and decision-making abilities.	D12	d2	Demonstrate critical thinking and decision making during pharmaceutical preparations Activity	Practical notes			x			

Course Coordinators: Prof. Dr. Hanaa Abdel Fattah ElGhamry

Head of Department: Prof. Dr. Nagia Ahmed El-Megrab

Date: تم مناقشة واعتماد توصيف المقرر من مجلس القسم بتاريخ 2017 / 9 / 3 م

COURSE SPECIFICATIONS

Pharmacognosy 2

Second year – Second Term

2017-2018

Course Specification of Pharmacognosy 2

University: Zagazig **Faculty:** Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: -----

Department offering the course: Pharmacognosy

Academic year/ Level: Second year/first term

Date of specification approval: 16 September 2017

B- Basic information:

Title: Pharmacognosy 2

Code: PG212

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3hrs/week

C- Professional information:

1. Overall Aims of the Course:

On completion of the course, students will be able to describe morphological, histological characters and uses of medicinal fruits, seeds and subterranean organs as well as identification of different active constituents and adulteration, in addition to identification of some medicinally important unorganized and animal drugs.

2. Intended Learning Outcomes of Pharmacognosy 2.

A- Knowledge and Understanding	
a1	Describe morphological, histological characters and uses of medicinal fruits, herbs and subterranean organs.
a2	Identify adulteration of different medicinal fruits, herbs and subterranean organs.
a3	Mention different active constituents of fruits, seeds and subterranean organs and unorganized plant and animal drugs.
B- Professional and Practical skills	
b1	Handle and dispose chemicals in a safe way.
b2	Examine drugs of plant origin in entire and powdered form.
b3	Determine the active constituents of the studied drugs.
C- Intellectual skills	
c1	Differentiate between drugs in entire and powdered form.
c2	Investigate active constituents of different drugs.
D- General and Transferable skills	
d1	Work as a member of a team.
d2	Develop internet search and communications skills.
d3	Manage time and plan of work.

D- Course contents:

Week No	Lecture (2hrs/week)	Practical session (2hrs/week)
1	<ul style="list-style-type: none"> General introduction for what will be taught all over the term <p>Introduction for the seeds and giving the students the possible references, web sites, text books.</p>	<ul style="list-style-type: none"> Laboratory Safety Measures Dealing With Microscope. Morphology of some important seeds
2	Description including Macro- and micro-morphological study for entire drug and for powdered Linseed, Fenugreek and Strophanthus.	<ul style="list-style-type: none"> Fenugreek: Macro- and micro-morphological study for entire drug.
3	Description including Macro- and micro-morphological study for entire drug and for powdered Psyllium, Nut meg and Pumpkin	Linseed: Macro- and micro-morphological study for entire drug
4	Evening primrose, Colchicum and mustard macro-and, micro-morphology of the entire and powdered drugs, chemical identification	Mustard and nuxvomica:macro-, and Micro-morphology, powders and chemical identification
5	Introduction to the fruits	<ul style="list-style-type: none"> Morphology of some important fruits. <p>Activity</p>
6	midterm exam	
7	Anise, fennel and caraway: macro-and; micro morphology -, powder and chemical identification	<ul style="list-style-type: none"> Practical exam1
8	Ammivisnaga, Ammimajus and Capsicum: macro-and; micro-morphology - powder and chemical identification	Anise and caraway: macro-and Micro-morphology, powder and chemical identification
9	<ul style="list-style-type: none"> Lemon and orange peel and other medicinally used berries fruits: macro-and; micro-morphology - powder and chemical identification. 	Senna pods (Morphology, histology, powder and chemical test, when it is possible
10	<ul style="list-style-type: none"> Introduction to subterranean organs. <p>Activity</p>	Ammivisnaga and Capsicum (Morphology, histology for entire drug powder and chemical test
11	Liquorice and Ipeca: macro-morphology; micro-morphology powder and chemical identification.	Morphological demonstration for some important roots and rhizomes
12	Ginger, curcuma: macro-morphology; micro-morphology powder and chemical identification	Liquorice: macro-morphology; micro-morphology powder and chemical identification.
13	Ginseng, valerian, garlic and Echinacea: macro-morphology; micro-morphology powder and chemical identification	Ginger, curcuma: macro-morphology; micro-morphology powder and chemical identification

14	Introduction to Unorganized drugs Medicinal plants used as unorganized drugs: Myrrh, aloe, gum and opium.	Identification of unorganized drugs
15	Animal drugs: Introduction, Medicinal plants used as animal drug: gelatin, agar, insulin and heparin	Practical exam 2

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Group discussion
- Field visit Zagazig University Farm

F- Student Assessment Methods:

- 1- Written exam to assess a1, a2, a3, c2, c2
- 2- Writing a report about the drugs to assess d1, d2, d3
- 3- Practical exam & students participation to assess b1, b2, b3, d1, d2, d3
- 4- Oral exam to assess a1, a2, a3, a4, a5, c3, c4

Assessment schedule:

Assessment (1): Written exams	Week 6,16
Assessment (2): Activity	Week 10
Assessment (3): Practical exams	Week 7,15
Assessment (4): Oral exams	Week 16

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exams	60	60%
Activity	5	5%
Practical exam	20	20%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- For lectures: Black (white) boards, overhead projectors, data show.
- For Labs: Chemicals, glassware, instruments, Digital balances, water bathes.

- Zagazig University Farm

H- List of References:

1- Student's book approved by Pharmacognosy Department on 2017.

2- Essential Books;

- Trease G.E. (a text book of pharmacognosy) 6th Ed. London. Bailier Tindal and Cox **1952**.
- Trease G.E. (a text book of pharmacognosy) 15th Ed. London. , New York **2002**.

3- Recommended Books

- Janice, Glimn-Lacy and Peter B. Kaufman, Botany Illustrated, Introduction to plants, major groups, flowering plants families, 2nd ed. Springer **2006**.

4- Periodicals, web sites, etc

- 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. Afaf El-Sayed

Head of Department: Prof. Dr. Azza El Shafaey

Date: تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 2017/9/ 16 م

Matrix I of Pharmacognosy-2 Course

Course Contents		ILOs of Pharmacognosy II										
		Knowledge and understanding			Professional and practical skills			Intellectual skills		Transferable and general skills		
		a1	a2	a3	b1	b2	b3	c1	c2	d1	d2	d3
Lectures												
1	<ul style="list-style-type: none"> General introduction for what will be taught all over the term Introduction for the seeds and giving the students the possible references, web sites, text books.	x	x	x				x	x			
2	Description including Macro- and micro-morphological study for entire drug and for powdered Linseed, Fenugreek and Strophanthus	x	x	x				x	x			
3	Description including Macro- and micro-morphological study for entire drug and for powdered Psyllium, Nut meg and Pumpkin	x	x	x				x	x			
4	Evening primrose, Colchicum and mustard macro-and, micro-morphology of the entire and powdered drugs, chemical identification	x	x	x				x	x			
5	Introduction to the fruits	x	x	x				x	x			

6	Anise, fennel and caraway: macro-and; micro morphology -, powder and chemical identification	×	x	×				x	x			
7	Ammivisnaga, Ammimajus and Capsicum: macro-and; micro-morphology - powder and chemical identification	×	x	×				x	x			
8	Lemon and orange peel and other medicinally used berries fruits: macro-and; micro-morphology - powder and chemical identification	×	x	×				x	x			
9	Introduction to subterranean organs	x	x	×				x	x			
11	Liquorice and Ipeca: macro-morphology; micro-morphology powder and chemical identification	x	x	×				x	x			
12	Ginger, curcuma: macro-morphology; micro-morphology powder and chemical identification	x	x	×				x	x			
13	Ginseng, valerian, garlic and Echinacea: macro-morphology; micro-morphology powder and chemical identification	×	x	×				x	x			
14	Introduction to Unorganized drugs	×	x	×				x	x			
15	Medicinal plants used as unorganized drugs: Myrrh, aloe, gum and opium	×	x	×				x	x			
16	Animal drugs: Introduction, Medicinal plants used as animal drug: gelatin, agar, insulin and heparin	×	x	×				x	x			
Practical												
17	<ul style="list-style-type: none"> Laboratory Safety Measures Dealing With Microscope. Morphology of some important seeds 				x	x				x		

18	Fenugreek: Macro- and micro-morphological study for entire drug				x	×				x		
19	Linseed: Macro- and micro-morphological study for entire drug				x	x				x		
20	Mustard and nuxvomica:macro-, and Micro-morphology, powders and chemical identification				x		x			x		
21	Morphology of some important fruits				x	x				x		
22	Anise and caraway: macro-and Micro-morphology, powder and chemical identification				x	x				x		
23	Senna pods (Morphology, histology, powder and chemical test, when it is possible				x	x	×			x		
24	Ammivisnaga and Capsicum (Morphology, histology for entire drug powder and chemical test				x	x	×			x		
25	Morphological demonstration for some important roots and rhizomes				x	x				x		
26	Liquorice: macro-morphology; micro-morphology powder and chemical identification				x	x	×			x		
27	Ginger, curcuma: macro-morphology; micro-morphology powder and chemical identification				x	x	×			x		
28	Identification of unorganized drugs				x	x	×			x		
29	- Activity (net search).									x	×	x

Matrix II of Pharmacognosy-2 Course

National Academic Reference Standards NARS		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Weighting of assessment			
						Lecture	Practical session/ group discussion	field visit	Written exam	Practical exam	Report writing	Oral exam
Lecture												
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A3	a1	• General introduction for what will be taught all over the term Introduction for the seeds and giving the students the possible references, web sites, text books.	Student's book	×			×	×		×
			a2	Description including Macro- and micro-morphological study for entire drug and for powdered Linseed, Fenugreek	Student's book	×			×			×

				and Strophanthus.								
				Description including Macro- and micro-morphological study for entire drug and for powdered Psyllium, Nut meg and Pumpkin.	Student's book	×			×			×
2.4	Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds.	A12	a3	Evening primrose, Colchicum and mustard macro-and, micro-morphology of the entire and powdered drugs, chemical identification	Student's book	×			×			×
				Introduction to the fruits								
				Anise, fennel and caraway: macro-and; micro morphology -, powder and chemical identification								
				Ammivisnaga, Ammimajus and Capsicum: macro-and; micro-morphology -								

				powder and chemical identification								
				Lemon and orange peel and other medicinally used berries fruits: macro- and; micro-morphology - powder and chemical identification.								
				Introduction to subterranean organs								
				Liquorice and Ipeca: macro-morphology; micro-morphology powder and chemical identification								
				Ginger, curcuma: macro-morphology; micro-morphology powder and chemical identification								
				Ginseng, valerian, garlic and Echinacea: macro-morphology; micro-morphology powder and chemical identification								

				<ul style="list-style-type: none"> • Introduction to Unorganized drugs • Medicinal plants used as unorganized drugs: Myrrh, aloe, gum and opium • Animal drugs: Introduction, Medicinal plants used as animal drug: gelatin, agar, insulin and heparin 									
Practical sessions													
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	- Safety measures lab - Dealing with microscope	Practical notes		×			×			
3.4	Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B5	b2	Fenugreek: Macro- and micro-morphological study for entire drug	Practical notes		×			×			
			b3	Linseed: Macro- and micro-morphological study for entire drug Mustard and nuxvomica:macro-,	Practical notes		×			×			

				and Micro-morphology, powders and chemical identification								
				Morphology of some important fruits								
				Anise and caraway: macro-and Micro-morphology, powder and chemical identification.								
				Senna pods (Morphology, histology, powder and chemical test, when it is possible								
				Ammivisnaga and Capsicum (Morphology, histology for entire drug powder and chemical test								
				Morphological demonstration for some important roots and rhizomes								
				Liquorice: macro-morphology; micro-								

				morphology powder and chemical identification								
				Ginger, curcuma: macro-morphology; micro-morphology powder and chemical identification								
				Identification of unorganized drugs								
4.3	Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations	C7	c1	Description including Macro- and micro-morphological study for entire drug and for powdered Linseed, Fenugreek and Strophanthus	Student's book	×			×			×
				Description including Macro- and micro-morphological study for entire drug and for powdered Psyllium, Nut meg and Pumpkin								
				Evening primrose, Colchicum and mustard macro-and,								

				micro-morphology of the entire and powdered drugs, chemical identification								
				Anise, fennel and caraway: macro-and; micro morphology -, powder and chemical identification								
				Ammivisnaga, Ammimajus and Capsicum: macro-and; micro-morphology - powder and chemical identification								
				<ul style="list-style-type: none"> • Lemon and orange peel and other medicinally used berries fruits: macro-and; micro-morphology - powder and chemical identification. 								
				Liquorice and Ipeca: macro-morphology; micro-morphology								

				powder and chemical identification								
4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	C9	c2	Ginger, curcuma: macro-morphology; micro-morphology powder and chemical identification	Student's book	×						×
				Ginseng, valerian, garlic and Echinacea: macro-morphology; micro-morphology powder and chemical identification								
				Medicinal plants used as unorganized drugs: Myrrh, aloe, gum and opium								
				Animal drugs: Introduction, Medicinal plants used as animal drug: gelatin, agar, insulin and heparin								
5.3	Work effectively in a team	D4	d1	<ul style="list-style-type: none"> Field visit report writing 	Internet, essential and recommended books.			×				x
5.9	Implement	D.10	d2		Internet,			×				x

	writing and presentation skills		d3		essential and recommended books.							
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