COURSE SPECIFICATIONS

Faculty of Pharmacy

Bachelor of Pharmacy

First year – First Term

2017-2018

CONTENTS:

COURSE SPECIFICATIONS

Analytical Chemistry (1)

First year – First Term
2017-2018

Course Specification of Analytical Chemistry (1)

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: First year / First term

Date of specification approval: 27 August 2017

B- Basic information:

Title: Analytical Chemistry (1) Code: **AC110**

Credit Hours: ---

Lectures:1 hr/week

Practical: 2 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 outline methods of identification and determination of chemical composition of different compounds.

2-Intended Learning Outcomes of Analytical Chemistry (1) (lLOs):

A- Knowledge and Understanding	
a1	Illustrate principles of qualitative analysis.
a2	Describe methods of identification and separation of cation groups.
B- Professional and Practical Skills	
b1	Handle and dispose chemicals safely.
b2	Separate and identify various groups of cations.
C- Intellectual Skills	
c1	Apply qualitative techniques for separation of cations.
c2	Justify methods of identification and separation of simple mixtures.
D- General and Transferable Skills	
d1	Appraise critical thinking and decision making skills.

D- Contents:

Week No.	Lecture (1 hr/week)	Practical Session (2 hrs/week)
1	- Properties of aqueous solution - Law of mass action - Displacement of equilibrium	- Accreditation and quality appraisal
2	- Solubility product - Dissolution of precipitates or preparation of solutions	- Separation of gp I cations
3	- Types of complex ions - ionic reactions	- Separation of gp II cations
4	- Balancing chemical equations -Amphoterism	- Separation of gp I & II cations
5	Separation and identification of group I cations	- Separation of gp III cations
6	- Separation and identification of group II A cations	- Separation of gp IV cations
7	- Separation and identification of group II B cations	- Separation of gp IV cations
8	- Separation and identification of group II B cations	- Separation of gp III & IV cations
9	- Separation and Identification of group III cations	- Separation of gp V cations - Separation of gp VI cations

10	- Separation and Identification of group IV cations	- Separation of gp V & VI cations
11	- Separation and Identification of group V cations	- Simple mixture I - Simple mixture II
12	- Identification of group VI cations	**- Practical exam**
13	- Separation and identification of group VI cations	
14	- Revision	
15	- Open Discussion	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Open discussion

F- Student Assessment Methods:

1- Written exam to assess a1,a2,c2

2- Practical exam to assess b1,b2,c1,c2,d1

3- Oral exam to assess a1,a2,c2

Assessment Schedule:

Assessment (1): Written exam	Week 16
Assessment (2): Practical exam	Week 12
Assessment (3): Oral exam	Week 16

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	30	60%
Practical exam	10	20%
Oral exam	10	20%
TOTAL	50	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 1 approved by analytical chemistry department (2017)

- Practical notes approved by analytical chemistry department (2017)

2- Essential Books

i- Vogel's Qualitative Inorganic Analysis (seventh edition); Svehla G. ;Longman Inc., London (1996).

iii- Analytical Chemistry: Qualitative Analysis by Treadwell F. (2011).

3- Recommended Books

i- Introduction to Semimicro Qualitative Analysis (fifth edition); Sorum C. H., Lagowski J. J.; Prentke-Hall, New Jersey (1977).

ii- Analytical Chemistry (sixth edition); Christian G.D.; John Wiley & Sons Inc. (2003).

4- Periodicals, Web Sites, etc

Analytical Letters Journal

Analyst Journal

Journal of pharmaceutical and biomedical analysis

Course Coordinator: **Prof. Dr. Magda El Henawee**

Head of Department: **Prof. Dr. Magda El Henawee**

Date: **تم مناقشة واعتماد توصيف المقرر من مجلس القسم بتاريخ 27 /8/ 2017**

Matrix I of Analytical chemistry 1 course

Course Contents		ILOs of analytical chemistry 1 course						
		Knowledge and understanding		Practical skills		Intellectual skills		General and transferable skills
		a1	a2	b1	b2	c1	c2	d1
Lectures								
1	Properties of aqueous solution, Law of mass action Displacement of equilibrium	x						
2	Solubility product, Dissolution of precipitates or preparation of solutions	x						
3	Types of complex ions, ionic reactions	x						
	Balancing chemical equations , Amphoterism	x						
4	Separation and identification of group I cations		x				x	
5	Separation and identification of group II A cations		x				x	
6	Separation and identification of group II B cations		x				x	
8	Separation and identification of group II B cations		x				x	
9	Separation of group III cations		x				x	
10	Identification of group IV cations		x				x	
11	Separation and identification of group V cations		x				x	
12	Separation of group VI cations		x				x	
13	identification of group VI cations		x				x	

Practical sessions								
1	Laboratory safety measures			x				
2	Separation of gp I cations				x	x		x
3	Separation of gp II cations				x	x		x
4	Separation of gp I & II cations				x	x		x
5	Separation of gp III cations				x	x		x
6	Separation of gp IV cations				x	x		x
7	Separation of gp III & IV cations				x	x		x
8	Separation of gp V cations				x	x		x
9	Separation of gp VI cations				x	x		x
10	Separation of gp V & VI cations				x	x		x
11	Simple mixture I				x	x	x	x
12	Simple mixture II				x	x	x	x

Matrix II of Analytical Chemistry 1 course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods		Method of assessment		
						Lecture	Practical session	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	- Properties of aqueous soln - Law of mass action - dynamic equilibrium - solubility product -dissolution of ppt - Types of complex ions -ionic reactions - amphoterism	Student book Essential books	x		x		x
2.3	Principles of different analytical techniques using GLP guidelines and validation procedures.	A11	a2	- Separation and identification of group I cations - Separation and identification of group II cations - Separation and identification of group III cations - Separation of group IV cations - Separation and identification of group V cations - Separation and identification of group VI cations	Student book Essential books Recommended books Internet	x		x		x
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 cations groups and mixtures	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	C4	c1	- Separation and identification of cations groups and mixtures	Practical notes		x		x	
4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	C7	c2	- Separation and identification of group I cations - Separation and identification of group II cations - Separation and identification of group III cations - Separation of group IV cations - Separation and identification of group V cations - Separation and identification of group VI cations	Student book Essential books Recommended books Internet	x		x		x
				- Simple mixture separation and identification	Practical notes		x		x	
5.1O	Demonstrate critical thinking, problem-solving and decision-making abilities	D12	d1	- Separation and identification of cations groups and mixtures - Activity	Practical notes Internet		x	x		x

Course Coordinator: **Prof. Dr. Magda El Henawee**

Head of Department: **Prof. Dr. Magda El Henawee**

Date: **تم مناقشة واعتماد توصيف المقرر من مجلس القسم بتاريخ 27 /8/ 2017**

COURSE SPECIFICATIONS

Botany and plant taxonomy

First year – First Term
2017-2018

Course Specification of Botany and Plant Taxonomy

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 : First year /First term
- Date of specification approval : 25 September 2017

B- Basic information:

- Title: Botany and medicinal plants code: **PG110**
- Credit Hours: ---
- Lectures : 2 hrs/week
- Practical : 2 hrs/week
- Tutorials : ---
- Total : 3 hrs/week

C- Professional information

1- Overall aim of the course:

- 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 different parts of the plant 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 Plant Taxonomy (ILOs) :

A- Knowledge and Understanding	
a1	State the different plant cells, contents and organs.
a2	Recognize the different natural drugs and their productions.
a3	Illustrate the plant taxonomy and the classification of the plant Kingdom.
a4	Describe Morphological and Histological characters and uses of medicinal leaves.
a5	Identify adulteration of different medicinal leaves.
a6	Mention 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 plan of work.
d3	Write and present reports.
d4	Develop critical thinking and make a decision.

D- Course Content :

Week No.	Lecture contents (2hrs/lecture)	Practical session (2hrs/lab)
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, collenchymas, stone cells, fibers, xylem, phloem and secretory tissues).	Study for different starches powder microscopically and carry out some chemical tests.
3	Study of cultivation, collection and preparation	Study for dusting powder microscopically and carry out some chemical tests.
4	Study of drying, packing and adulteration of plant drugs.	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
Midterm exam		
6	Study of constituents of plant drugs including carbohydrates, starches, and colouring matter.	**Practical exam1**
7	Introduction for taxonomy of plants **Periodical exam**	Practical examination for hyoscyamus leaf including morphology and histology for entire and powdered forms.
8	Taxonomical study for some important families	Practical examination for datura and belladona leaf including morphology and histology for entire and powdered forms **Activity.**

9	General introduction for medicinal leaf.	Practical examination for senna leaf including morphology and histology for entire and powdered forms.
10	Morphological and histological studies for hyoscyamus and datura in entire and powdered forms, active constituents, uses and chemical test.	Morpholigical and histological study of eucalyptus in entire form
11	Morphological and histological studies for belladonna and digitalis in entire and powdered forms, active constituents, uses and chemical test.	Morphological and histological study of guava leaf in entire and powdered forms.
12	Morphological and histological studies for squill, buchu, tea, eucalyptus leaves in entire and powdered forms, active constituents, uses and chemical test.	Rosemary leaf: morphology and powdered forms; active constituents and uses.
13	Rest of all leaves	Demonstration for all taught leaves (morphological spots)
14	Revision	**Practical exam 2**
15	Revision	

E- Teaching and Learning Methods:

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

F- Student Assessment Methods:

1. Periodical exam to assess: a1, a2, a4 and c2.
2. Written exams to assess: a1, a2, a3, a4, a5, a6,c2, c3, d3 and d4
3. Practical exams to assess: b1, b2, b3, b4, c1, and d1
4. Oral exam to assess: a1, a2, a3, a4, a5, a6,c2, and c3

5. Activities to assess: d1, d2, d3 and d4

Assessment schedule :

Assessment (1): Written exam	Week 16
Assessment (2): Practical exams	Week 6, 14.
Assessment (3): Oral exam	Week 16
Assessment (4): Midterm exam	Week 7
Assessment (5): Activity	Week 8

Weighting of Assessment

Assessment method	Marks	Percentage
Written exam	50	50%
Practical exam	25	25%
Oral exam	15	15%
Midterm exam	10	10%
Total	100	100%

G- Facilities Required for Teaching and Learning:

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

H- List of References :

1-Course Notes: Student book of Botany and medicinal plants approved by Pharmacognosy department (2017).

2- Text Books:

- Trease and Evans, Pharmacognosy, 15^{t}" 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).

3- Recommended Books :

- " Encyclopedia of Common Natural Used in Food, Drugs and Cosmetics", Leung A.Y. and Faster.

4- Periodicals, web sites, etc. :

- American .J. Nat. Prod.
- Phytochemistry
- Planta Medica
- Fitoterapia
- www.Sciencedirect.Com

Course Coordinator : Prof. Dr. Ehsan Abo Zied

Head of department : Prof. Dr. Azza Mohammed E-Shafae

Date: **تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ 2017/9/25**

Matrix I of Botany and Plant Taxonomy Course

	Course Contents	ILOs of Botany and Plant Taxonomy Course																	
		Knowledge and understanding						Professional and practical skills				Intellectual skills				Transferable and general skills			
		a1	a2	a3	a4	a5	a6	b1	b2	b3	b4	c1	c2	c3	c4	d1	d2	d3	d4
	Lectures																		
1	- Introduction of pharmacognosy	x										x	x			x	x	x	
2	- Sources of natural drugs	x										x	x			x			
3	- Preparation of natural drugs	x	x			x													
4	- Cell and Cell differentiation		x				x			x									
5	- Cell contents		x								x								
6	- Types and chemical tests for identification			x		x	x												
7	- Introduction of plant taxonomy			x								x	x	x		x	x	x	
8	- Classification of plant kingdom			x										x					
9	- Taxonomy of lower plants			x								x							
10	- Taxonomy of higher plants			x								x							
11	- Gymnosperm			x															
12	- Taxonomy of angiosperm			x								x	x			x	x	x	
13	- Monocot. Plants			x								x							
14	- Taxonomy of dicot. Plants			x								x							
16	- Introductions of leaves				x							x							
17	- Leaves containing alkaloids				x							x			x		x	x	
18	- Leaves containing glycosides				x							x			x		x	x	
19	- Leaves containing cardiac glycosides				x							x			x		x	x	
20	- Miscellaneous leaves [Boldo, Lawsonia, Hamamelis, Citrus, Guajava].				x							x					x	x	

		Practical																	
21	- Laboratory safety measures - Uses of microscopes							x	x	x	x								
22	- Microscopical examination of starches							x	x	x	x								
	- Microscopical examination of different cells. - Examination of different cell content.							x	x	x	x								
24	- Examination of some lower plants.							x	x	x	x								
25	-Examination of some gymnosperm plants.							x	x	x	x								
26	- Examination of some monocot. and dicot. plants.							x	x	x	x								
27	- Examination of plant leaves. - T.S. of leaves.							x	x	x	x								
28	- Macroscopical & microscopical examination of datura leaves.							x	x	x	x								
29	- Macroscopical & **microscopical examination of senna leaf.**							x	x	x	x								
30	**- Macroscopical & microscopical examination of digitalis leaf.**							x	x	x	x								
31	**- Activity.**																	x	x

Matrix II of Botany and Plant Taxonomy 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	Oral exam
Lectures											
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	a1	- Introduction of pharmacognosy	Student book	x			x		x
				- Sources of natural drugs	Student book	x		x	x		x
					Student book	x			x		x
				- Preparation of natural drugs	Student book	x		x	x		x
			a2	- Cell and Cell differentiation	Student book	x	x		x	x	x
				- Cell contents	Student book	x	x		x	x	x
				- Types and chemical tests for identification	Student book and	x	x		x	x	x

					internet						
				- Introduction of plant taxonomy	Student book	x		x	x		x
			a3	- Classification of plant kingdom	Student book	x			x		x
				- Taxonomy of lower plants	Student book	x	x		x		x
					Student book	x	x		x		x
				- Taxonomy of Gymnosperm	Student book	x	x		x		x
			a3	- Taxonomy of angiosperm	Student book	x	x		x		x
				- Monocot. Plants	Student book and internet	x	x	x	x		x
				- Taxonomy of dicot. plants		x	x		x		x
			a4	- Introductions of leaves	Student book	x			x		x
			a5	Study of drying, packing and adulteration of plant drugs.		x			x		x
			a6	Study of constituents of		x	x		x	x	x

				plant drugs (alkaloids, glycosides, steroids, volatile oil, resins, tannins and proteins							
				Study of constituents of plant drugs including carbohydrates, starches, and colouring matter.							
3.2	handle and dispose chemicals an a safe way	B2	b1	- Leaves contain alkaloids	Student book	x	x	x		x	x
			b2	- Leaves contain glycosides	Student book	x	x			x	x
				- Leaves contain cardiac glycosides		x	x			x	x
				- Miscellaneous leaves [Boldo, Lawsonia, Citrus Hamamelis ,Guajava]		x	x			x	x
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	b3	- Microscopical examination of starches	Practical notes .		x			×	
				- Microscopical examination of different			x			x	
							x			x	

				cells.			x			x	
			b4	- Examination of different cell content. **- Examination of plant leaves.** - T.S. of leaves. - Macroscopical & microscopical examination of Datura leaves. - Macroscopical & microscopical **examination of senna leaf.** **- Macroscopical & microscopical examination of digitalis leaf.**			x			x	
4.2	Comprehend and apply GLP,GPMP, GSP and GCP guidelines in pharmacy practice	C3	c1	- Uses of microscopes	Practical notes		x			×	
4.13	Analyze and interpret experimental results as well as published literature	C16	c2	Activity	Internet, essential and recommend-ed books.			x			
								x			
								x			
			c3	Leaves contain alkaloids	Student book	x			x		x
				Leaves contain glycosides							
			c4	Leaves contain cardiac glycosides							

5.2	Retrieve and evaluate information from different sources to improve professional competencies	D3	d1	Activity	Internet, essential and recommend-ed books.			x			
5.3	Work effectively in a team	D4	d2	Activity				x			
5.4	Use numeracy, calculation and statistical methods as well as information technology tools	D6	d2	- Activity	Internet, essential and recommended books.			×			
5.8	Demonstrate creativity and time management abilities	D10	d3	- Activity	Internet, essential and recommended books.			×			
5.9	Implement writing and presentation skills	D11	d3, d4	Activity	Internet, essential and recommend ed books.			x			
5.10	Demonstrate critical thinking, problem-solving and decision-making abilities	D12	d4	Activity				x			

Course Coordinator : Prof. Dr. Ehsan Abo Zied
Head of department : Prof. Dr. Azza Mohammed E-Shafae
Date: **تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ 2017/9/25**

COURSE SPECIFICATIONS

English and Medical terminology

First year – First Term
2017-2018

Course specification of English and Medical terminology

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Minor

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

Department offering the course: English Department/ Faculty of Education

Academic year/ Level: First year/First term

Date of specification approval: September 2017

B- Basic information:

Title: English and Medical terms Code: **EL110**

Credit Hours: ---

Lectures: 1 hr/week

Practical: ---

Tutorials: ---

Total: 1 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 terminology (ILOs):

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	- Open Discussion

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 16

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	50	100%
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 English approved by English department 2017

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 Coordinator: Prof. Dr. Michel Abd Elmeseh

Date: /9/2017

Matrix I of English and Medical terminology course

Course Contents		ILOs of English and Medical terminology 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 + exercises			x	x	x		
13	Pharmacy glossary and General revision			x	x	x		

Matrix II of English and Medical terminology 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	C17	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	Demonstrate critical 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

---

Course Coordinators: **Prof. Dr. Michel Abd Elmeseh**
Date: **/9/2017**

COURSE SPECIFICATIONS

General and Physical Chemistry

First year – First Term
2017-2018

Course Specification of General and Physical chemistry

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 Department

Academic year / Level: First year / First term

Date of specification approval: 27 August 2017

B- Basic information:

Title: General and Physical chemistry Code: **AC111**

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 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	Identify methods of calculations with chemical equations
a2	Summarize gas laws
a3	Recognize different thermochemistry laws and heat of reation
a 4	Identify the properties of solutions and expression of concentration
a5	Illustrate fundamentals of chemical kinetics and factors affecting the reaction rates
a6	Describe the electronic structure of atoms, types of bonds, molecular structure theories
B- Professional and Practical Skills	
b1	Handle and dispose chemicals safely.
b2	Identify and separate anions groups.
b3	Solve problems on chemical equations and solutions
C- Intellectual Skills	
c1	Use qualitative analysis in the separation of anions.
c2	Analyze and interpret experimental results.
D- General and Transferable Skills	
d1	Manipulate data for each material to detect its physical properties and its behavior.
d2	Demonstrate good presentation skills and computer driving ability.

D- Contents:

Week No.	Lecture (3 hrs/week)	Practical Session (2 hrs/week)
1	-Introduction to physical chemistry: SI units, empirical and molecular formula, limiting reactant and percent yield	- 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	- Laboratory safety measures Separation and identification of CO_3 & HCO_3
6	**Midterm exam**	
7	- Hess's Law -Kirchoff 's equation - Measurement of heat of reaction	- Separation and identification of sulfur anions
8	- Chemical equilibrium -Reaction rate and factors affecting it	**- Practical exam (1)**
9	- ionic equilibrium	- Separation and identification of

		halides
10	- Atomic theory	- Separation and identification of arsenic and phosphorous anions
11	- Bonding & Lewis structure	- Separation and identification of oxidizing anions Simple mixture of anions **- Activity**
12	- Chemical bonding	- Simple mixture of anions(I), (II) , (III) - Presentation I - Presentation II
13	- Molecular structure	**- Practical exam (2)**
14	-Revision	
15	- Open discussion	

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, a5, a6, c2, d1
2- Practical exam	to assess	b1, b2, b3, c1,d1, d2
3- Activity	to assess	d1, d2

Assessment Schedule:

Assessment (1): Written exams	Week 16
Assessment (2): Practical exams	Week 7,12
Assessment (3): Activity	Week 10

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	50	50%
Oral exam	15	15%
Practical exam	20	20%
Midterm 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 General and Physical chemistry approved by analytical chemistry department (2012).

- Practical notes approved by analytical chemistry department (2012).

2- Essential Books:

i- Principles of Physical Chemistry(Part 1-2) (first edition); Raff M.; Prentice Hall (2001).

ii- Physical chemistry of surfaces Ademson (first edition); john A.; wiley&sons.inc. (2000).

3- Periodicals, Web Sites, etc

Analytical Letters Journal

Analyst Journal

Journal of pharmaceutical and biomedical analysis

Course Coordinator: Prof. Dr. Wafaa Hassan

Head of Department: Prof. Dr. Magda El Henawee

Date: تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 27 /8/ 2017

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												
2	Gas behavior		x											
3	concentration and solubility				x									
4	Colligative properties of solution				x									
5	Thermochemistry, First law of thermodynamics, Relation between ΔH and ΔE			x										
6	Hess's Law, Kirchoff 's equation, Measurement of heat of reaction			x										
7	Chemical equilibrium ,Reaction rate and factors affecting it					x						x	x	
8	ionic equilibrium					x						x		
9	Atomic theory						x							
10	Bonding & Lewis structure						x					x		
11	Chemical bonding						x					x		
12	Molecular structure						x					x		
Practical sessions														
1	Laboratory safety measures calculations of moles, molecular weight, empirical formula and percentage composition of compounds							x		x				

2	limiting reactant; theoretical and percentage yields									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			
6	Separation and identification of sulfur anions								x		x			
7	Separation and identification of halides								x		x			
8	Separation and identification of arsenic and phosphorus anions								x		x			
9	Separation and identification of oxidizing anions								x		x			
10	Simple mixture of anions								x		x			
11	Simple mixture of anions								x		x			
12	Presentation I												x	x
13	Presentation II												x	x
14	Activity												x	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	Physico-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio-labeled products.	A9	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	C4	c1	- Separation and identification of anions	Practical notes		x			x
4.13	Analyze and interpret experimental results as well as published literature	C16	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	
5.4	Use numeracy, calculation and statistical methods as well as information technology tools	D5	d1	Presentations Gas behavior Activity	Student book Essential book Internet	x	x	x	x	x
5.9	Implement writing and presentation skills	D11	d2	presentations Activity	Internet		x	x		x

---

Course Coordinator: Prof. Dr. Wafaa Hassan

Head of Department: Prof. Dr. Magda El Henawee

Date: تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 27 /8/ 2017

COURSE SPECIFICATIONS

Pharmaceutical Organic Chemistry (1)

First year – First Term
2017-2018

Course Specification of Pharmaceutical Organic Chemistry (1)

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: First year /First term

Date of specification approval: 28/8/2017

B- Basic information:

Title: Pharmaceutical Organic Chemistry (1) Code: **POC110**

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

2-Intended Learning Outcomes of Pharmaceutical organic Chemistry (1) (lLOs):

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.
c4	Develop The IUPAC name of organic compound from its molecular structure.
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 (2hrs/week)	Practical session (2hrs/week)
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	**Midterm 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	Revision
14	Reaction of carboxylic acid derivatives	Practical exam
15	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, c1, d1, d2, d3

3- Student participation to assess b1, b2, b3, d1, d2

4- Oral exam to assess a1, a2, a3, c1, c2, c3, c4

Assessment Schedule:

Assessment (1): Written exams	Week 6, 16
Assessment (2): Practical exams	Week 14
Assessment (3): Student participation	Each lab
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 Aliphatic Organic chemistry part I approved by Pharmaceutical organic chemistry department (2017).

- Practical notes of Organic chemistry 1 approved by Pharmaceutical organic chemistry department (2017).

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

تم مناقشة واعتماد توصيف المقرر من مجلس القسم بتاريخ 28 / 8 / 2017م

Matrix I of pharmaceutical organic chemistry 1 course

Course Contents		ILOs of the course												
		knowledge and understanding			practical skills			intellectual skills				General and transferable skills		
		a1	a2	a3	b1	b2	b3	c1	c2	c3	c4	d1	d2	d3
Lectures														
1	Atomic structure, covalent bonding, hybridization of carbon and elements of organic compounds and molecular orbital theory	x												
2	Electronegativity, molecular polarity and dipole moment and hydrogen bonding between molecules. Representation and classification of organic compounds.	x	x											
3	IUPAC nomenclature of organic compounds	x		x					x	x	x			
4	Free radical halogenation of alkanes	x		x					x	x				
5	Preparation and reactions of alkenes	x		x					x	x				
6	Alkynes	x	x	x					x	x				
7	Reactions of alkyl halides	x		x				x	x	x				
8	Reactions of alcohols	x		x				x	x	x				
9	Reactions of aldehydes	x		x				x	x	x				
10	Reaction of ketones	x		x				x	x	x				
11	Reaction of carboxylic acids	x		x				x	x	x				
12	Reaction of carboxylic acid derivatives	x		x				x	x	x				
Practical sessions														
1	Lab safety				x							x	x	x
2	Physical properties & solubility				x	x	x					x	x	x

3	Action of 30% NaOH				x	x	x					x	x	x
4	Action of $FeCl_3$				x	x	x					x	x	x
5	Action of conc. H_2SO_4				x	x	x					x	x	x
6	Test of unsaturation				x	x	x					x	x	x
7	Test of function group 1				x	x	x					x	x	x
8	Test of function group 2				x	x	x					x	x	x
9	Test of function group 3				x	x	x					x	x	x
10	Test of function group 4				x	x	x					x	x	x
11	Test of function group 5				x	x	x					x	x	x

Matrix II of pharmaceutical organic chemistry 1 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	Atomic structure, covalent bonding, hybridization of carbon and elements of organic compounds and molecular orbital theory	Student book Essential books	x			x		x
				Electronegativity, molecular polarity and dipole moment and hydrogen bonding between molecules. Representation and classification of organic	Student book Essential books Recommended books	x			x		x

				compounds.							
				IUPAC nomenclature of organic compounds	Student book Essential books	x			x		x
				Free radical halogenation of alkanes		x			x		x
				Preparation and reactions of alkenes	Student book Essential books	x			x		x
				Alkynes	Student book Essential books	x			x		x
				Reactions of alkyl halides		x			x		x
				Reactions of alcohols		x			x		x
				Reactions of aldehydes		x			x		x
				Reaction of ketones		x			x		x
				Reaction of carboxylic acids & derivatives		x			x		x

				Electronegativity, molecular polarity and dipole moment and hydrogen bonding between molecules. Representation and classification of organic compounds.		x			x		x
		A14	a2	Alkynes	Notebook& Handouts	x			x		x
2.5	Principles of drug design, development and synthesis.	A15	a3	IUPAC nomenclature of organic compounds	Student book Essential books	x			x		x
				Free radical halogenation of alkanes		x			x		x
				• Preparation and reactions of alkenes • Alkynes • Reactions of alkyl halides • Reactions of alcohols		x			x		x

				• Reactions of aldehydes • Reaction of ketones • Reaction of carboxylic acid derivatives							
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	Laboratory safety measures			x			x	
3.4	Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B6	b2	Physical properties & solubility	Practical notes		x	x		x	
				General chemical tests: 1. Action of 30% NaOH 2. Action of $FeCl_3$ 3. Action of conc. H_2SO_4			x	x		x	
			b3	• Test of unsaturation • Test of function group 1,2,3,4,5			x	x		x	

4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	C7	c1	• Reactions of alkyl halides • Reactions of alcohols • Reactions of aldehydes • Reaction of ketones • Reaction of carboxylic acid derivatives	Student book Essential books	x			x		x
		C8	c2	IUPAC nomenclature of organic compounds	Student book Essential books	x			x		x
				Free radical halogenation of alkanes		x			x		x
				Preparation and reactions of alkenes & alkynes		x			x		x
			c3	IUPAC nomenclature of organic compounds	Student book Essential books	x			x		x
				Free radical halogenation of							

				alkanes							
				Preparation and reactions of alkenes & alkynes							
			c4	IUPAC nomenclature of organic compounds		x			x		x
				Laboratory safety measures			x	x		x	x
				Physical properties & solubility			x	x		x	x
5.6	Adopt ethical, legal and safety guidelines	D8	d1	General chemical tests: 1. Action of 30% NaOH 2. Action of $FeCl_3$ 3. Action of conc. H_2SO_4	Practical notes		x	x		x	x
5.8	Demonstrate creativity and time management abilities	D10	d2	Physical properties & solubility General chemical tests: 1. Action of 30% NaOH			x	x		x	

				2. Action of $FeCl_3$ 3. Action of conc. H_2SO_4							
			d3	• Test of unsaturation • Test of function group 1,2,3,4,5 • Reactions of alkyl halides • Reactions of alcohols • Reactions of aldehydes • Reaction of ketones • Reaction of carboxylic acid derivatives			x	x		x	

Course Coordinator: Prof. Dr. Zakaria Abdelsamii

Head of Department: Prof. Dr. Hanan Abdelrazik Abdelfatah

تم مناقشة واعتماد توصيف المقرر من مجلس القسم بتاريخ 28 / 8 / 2017م

COURSE SPECIFICATIONS

Pharmaceutics-1

First year – First Term
2017-2018

Course specification of Pharmaceutics-1

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: First year/First semester

Date of specification approval: 3 September 2017

B- Basic information:

Title: Pharmaceutics-1 Code: PC110

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

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 mission of pharmacy, role and the responsibility of pharmacists at various pharmacy sittings, the history of pharmacy, pharmacy careers, educational requirements and ethical framework of pharmacy, drug information sources, national and international pharmaceutical organizations and the principles and steps of pharmaceutical products development process. Illustrate the different dosage forms and their routes of administration as well as pharmacy history.

2-Intended Learning Outcomes of pharmaceutics-1 (ILOs)

A- Knowledge and Understanding	
a1	Define different concepts related to pharmacy profession, duties of pharmacist at various pharmacy sittings, drug information sources and various pharmaceutical and medical terms
a2	Identify the pharmacy careers, educational requirements and ethical framework of pharmacy
a3	Describe drug, medicine, excipients and the principles and steps of new pharmaceutical products development process
a4	Enumerate different types of dosage forms and their routes of administration
a5	Summarize the history of pharmacy
B- Professional and Practical skills	
b_1	Use laboratory balances and equipment efficiently
b_2	Formulate some liquid pharmaceutical preparations
b_3	Handle the pharmaceutical preparations safely
b4	Make necessary calculations for, prepare, label, evaluate and dispense some liquid pharmaceutical preparations
C- Intellectual skills	
c_1	Differentiate between different routes of drug administrations
c_2	Differentiate between different dosage forms
c3	Solve different pharmaceutical calculations
c4	Discusses the different factors affecting drug dose
D- General and Transferable skills	
d_1	Develop the decision making and problem solving abilities
d2	Work effectively in a team
d3	Communicate pharmaceutical ideas effectively

D- Content

Week No.	Lecture contents (2hrs/week)	Practical session (2hrs/week)
1	**Introduction to pharmacy:** Pharmacy profession, pharmaceutics, pharmacists, pharmacy education, Pharmaceutical organizations Drug information sources (Pharmacopeias and Formularies)	Introduction to GLP Pharmaceutical calculations: Numbers and numerals
2	**Pharmacy careers and role of pharmacists** **Ethics in pharmacy**	Pharmaceutical calculations Systems of measure: Metric system
3	**Drug and medicine:** Definition of drugs, medicines and excipients, drug characteristics, sources, nomenclatures, classifications and steps of pharmaceutical products development	Pharmaceutical calculations Systems of measure: Common systems
4	**Medical and pharmaceutical terminology**	Pharmaceutical calculation Reducing and enlarging formula
5	**Routes of drug administration**	Pharmaceutical calculation Allegation
6	Midterm exam	
7	**Introduction to pharmaceutical dosage forms**	Preparation of simple pharmaceutical solution(Simple mixture of belladonna)
8	**Drug Dosage,** Factors affecting dose, Calculation of doses	Preparation of simple pharmaceutical solution(Ear drops)
9	**Medical Prescription and medication order and their interpretation** **Medical and pharmaceutical terminology**	Preparation of simple pharmaceutical solution (Simple mixture of liquorice)
10	**Liquid dosage forms:** Aqueous liquid dosage forms Pharmaceutical Solutions	Preparation of simple pharmaceutical solution(Ammonium Chloride Mixture)
11	**Liquid dosage forms** Non aqueous liquid dosage forms Sweet and/or viscid liquid dosage forms	Infusion Decoction
12	- نبذة عن تاريخ الصيدلة- الدواء و الاغريق - فضل العرب والمسلمين على الدواء والمداواة	- Practical exam-2
13	- الدواء وبلاد ما بين النهرين- المصريين القدماء	
14	- Revision	
15	- Open Discussion	

E- Teaching and Learning Methods:

- Lectures
- Practical session
- Self learning (Activities, open discussion)

F- Student Assessment methods:

1- Written exams to assess: a1, a2, a3, a4,a5, a6, c1, c2, c3, c4

2- Practical exams to assess: b1,b2, b3, b4, d1, d2, d3

3- Activity to assess: d1, d2, d3

Assessment schedule:

Assessment (1): Written exams	Week 16
Assessment (2): Practical exams	Week 13
Assessment (3): Activity in labs	every Week
Assessment (4): Oral exam	Week 16

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exams	60	60%
Practical exam and activities	25	25%
Oral exam	15	15%
TOTAL	50	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-1 approved by pharmaceutics department (2017).

2- Essential Books:

- ✓ **i-** Pharmaceutical dosage forms and drug delivery systems (1995), Ansel, H. c., Popovich, N. G., Allen, L. V. 6th edition , Williams and Wilkins.
- ✓ Pharmaceutical calculations, Stoklosa, M and Ansel, H., Philadelphia, London. (1997).

3- Recommended Books

- ✓ Remington: the Science and Practice of Pharmacy" Genars, Alfonso R edition, 2000.

4- Periodicals and websites:

Journal of pharmaceutical sciences

www.Pubmed.com

www.Sciencedirect.com

Course Coordinator: Nagia Ahmed El-megrab

Head of Department: Nagia Ahmed El-megrab

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 25 / 9 / 2017 م

Matrix I of pharmaceutics 1 course

Course contents		ILOs of pharmaceutics 1 course															
		Knowledge and understanding					Professional and practical skills				Intellectual skills				General and transferable skills		
		a1	a2	a3	a4	a5	b1	b2	b3	b4	c1	c2	c3	c4	d1	d2	d3
Lectures																	
1	**Introduction to pharmacy:** Pharmacy profession, pharmaceutics, pharmacists, pharmacy education, Pharmaceutical organizations Drug information sources (Pharmacopeias and Formularies)	x															
2	**Pharmacy careers and role of pharmacists Ethics in pharmacy**		**x**														
3	**Drug and medicine:** Definition of drugs, medicines and excipients, drug characteristics, sources, nomenclatures, classifications and steps of pharmaceutical products development	x		**x**													
4	**Medical and pharmaceutical terminology**	x															
5	**Routes of drug administration**	x			**x**						x						
6	**Introduction to pharmaceutical dosage forms**	**x**			**x**							**x**					
7	**Drug Dosage,** Factors affecting dose, Calculation of doses	x												**x**			
8	**Medical Prescription and medication order and their interpretation Medical and pharmaceutical terminology**	x															

9	**Liquid dosage forms:** Aqueous liquid dosage forms Pharmaceutical Solutions	**x**			x												
10	**Liquid dosage forms** Non aqueous liquid dosage forms Sweet and/or viscid liquid dosage forms	**x**			x												
11	نبذة عن تاريخ الصيدلة					**x**											
12	فضل العرب والمسلمين على الدواء والمداواة					**x**											
13	الدواء وبلاد ما بين النهرين- المصريين القدماء					**x**											
Practical sessions																	
1	Introduction to GLP Pharmaceutical calculations: Numbers and numerals						**x**			**x**			**x**		**x**	**x**	**x**
2	Pharmaceutical calculations Systems of measure: Metric system									**x**			**x**		**x**	**x**	**x**
3	Pharmaceutical calculations Systems of measure: Common systems									x			x		x	x	x
4	Pharmaceutical calculation Reducing and enlarging formula									x			**x**		**x**	**x**	**x**
5	Pharmaceutical calculation Allegation									**x**			**x**		**x**	**x**	**x**
6	Preparation of simple pharmaceutical solution(Simple mixture of belladonna)						**x**	**x**	**x**						x	x	x
7	Preparation of simple pharmaceutical solution(Ear drops)						**x**	**x**	x						**x**	**x**	**x**
8	Preparation of simple pharmaceutical solution (Simple mixture of liquorice)						**x**	**x**	**x**						**x**	**x**	**x**
9	Preparation of simple pharmaceutical solution(Ammonium Chloride Mixture)						**x**	**x**	**x**						**x**	**x**	**x**
10	Infusion & decoction						**x**	**x**	**x**						**x**	**x**	**x**

Matrix II of pharmaceutics 1 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 pharmacy:** Pharmacy profession, pharmaceutics, pharmacists, pharmacy education, Pharmaceutical organizations Drug information sources (Pharmacopeias and Formularies)	Student book	x			x		x
				Introduction to pharmacy: Pharmacy	Student book	x			x		x

				profession, pharmaceutics, pharmacists, pharmacy education, Pharmaceutical organizations Drug information sources (Pharmacopeias and Formularies)							
				Medical and pharmaceutical terminology	Student book Essential books	x			x		x
				Routes of drug administration	Student book Essential books	x			x		x
				Introduction to pharmaceutical dosage forms	Student book	x			x		x
			a1	**Drug Dosage,** Factors affecting dose, Calculation of doses	Student book	x			x		x
				Medical Prescription and medication	Student book	x			x		x

				order and their interpretation Medical and pharmaceutical terminology							
				Liquid dosage forms	Student book	x			x		x
			a2	**Pharmacy careers and role of pharmacists Ethics in pharmacy**	Student book	x			x		x
			a3	**Drug and medicine:** Definition of drugs, medicines and excipients, drug characteristics, sources, nomenclatures, classifications and steps of pharmaceutical products development	Student book	x			x		x
			a5	نبذة عن تاريخ الصيدلة فضل العرب والمسلمين على الدواء والمداواة الدواء وبلاد ما بين	Student book	x			x		x

				النهرين- المصريين القدماء							
2.4	Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds.	A12	a4	**Routes of drug administration**	Student book	x			x		x
				Introduction to pharmaceutical dosage forms	Student book	x			x		x
3.1	Use the proper pharmaceutical and medical terms and abbrevations and symbols in pharmacy practice.	B1	a1	**Medical Prescription and medication order and their interpretation Medical and pharmaceutical terminology**	Student book Essential books Internet	x			x		
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	Introduction to GLP	Practical notes		x			x	
				Preparation of simple pharmaceutical solution(Simple mixture of belladonna)							
				Preparation of simple pharmaceutical solution(Ear							

				drops)							
				Preparation of simple pharmaceutical solution (Simple mixture of liquorice)							
				Preparation of simple pharmaceutical solution(Ammonium Chloride Mixture)							
				Infusion & decoction							
3.3	Compound, dispense, label, store and distribute medicines effectively and safely.	B4	b2	Preparation of simple pharmaceutical solution(Simple mixture of belladonna)	Practical notes		x			x	
			b3	Preparation of simple pharmaceutical solution(Ear drops)	Practical notes		x			x	
				Preparation of simple pharmaceutical solution							

				(Simple mixture of liquorice)							
				Preparation of simple pharmaceutical solution(Ammonium Chloride Mixture)							
				Infusion & decoction							
4.1	Apply pharmaceutical knowledge in the formulation of safe and effective medicines as well as in dealing with new drug delivery systems.	C1	c1	**Routes of drug administration**	Student book	x			x		x
			c2	**Introduction to pharmaceutical dosage forms**	Student book	x			x		x
4.10	4.10 Calculate and adjust dosage and dose regimen of medications.	C13	b4	**Drug Dosage,** Factors affecting dose, Calculation of doses	Student book	x			x		x
				Pharmaceutical calculations Systems of measure: Metric system	Practical notes		x			x	

			c4	Pharmaceutical calculations Systems of measure: Common systems			x			x	
				Reducing and enlarging formula			x			x	
				Allegation			x			x	
5.1O	Implement writing and thinking, problem- solving and decision-making abilities.	D12	d1	Introduction to GLP Pharmaceutical calculations: Numbers and numerals	Practical notes		x			x	
			d2	Pharmaceutical calculations Systems of measure: Metric system	Practical notes		x	x		x	
			d3	Pharmaceutical calculations Systems of measure: Common systems	Practical notes		x	x		x	
				Reducing and enlarging	Practical notes		x	x		x	

				formula							
				Allegation							
				Preparation of simple pharmaceutical solution(Simple mixture of belladonna)							
				Preparation of simple pharmaceutical solution(Ear drops)							
				Preparation of simple pharmaceutical solution (Simple mixture of liquorice)							
				Preparation of simple pharmaceutical solution(Ammonium Chloride Mixture)							
				Infusion & decoction							

Course Coordinator: Nagia Ahmed El-megrab

Head of Department: Nagia Ahmed El-megrab

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 25 / 9 / 2017 م