Bachelor in Pharmacy
(Clinical pharmacy)

Course Specification
2020-2021
Third Level / Semester(5)

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy (Clinical
	pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmaceutical Technology
Department supervising the course	
Academic Level	Third level/ Semester 5
Date of specification approval	9/ 2020

# **A- Basic information:**

Title : Pharmaceutical Dosage Forms-2	Code : PT 505
<b>Total Credit Hours :3</b>	Lecture :2
Tutorial :	Practical :2

#### **B- Professional Information**

### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to understand:

- The factors affecting percutaneous and rectal absorption of drugs.
- The different strategies to enhance percutaneous absorption.
- The design of transdermal therapeutic systems.
- The formulation of ointments, creams and suppositories.
- The specifications of selected cosmetic formulations.
- The specifications of parenteral and ophthalmic products.

# 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

On successful completion of the course, the students should be able to:

- a1- Discuss the factors affecting percutaneous and rectal absorption of drugs
- a2- Recognize different methods of enhancing percutaneous absorption of drugs.
- a3- Describe the transdermal therapeutic systems.
- a4- Classify different bases used in formulation of ointments, suppositories and cosmetic formulation.
- a5- Express knowledge of methods of preparation of suppositories, ointment and cosmetic products.
- a6- List the specifications of parenteral and ophthalmic products.
- a7- Discuss the factors affecting stability of sterile dosage forms.

#### **b- Intellectual skills:**

- b1- Select the best enhancer for a given transdermal therapeutic system.
- b2- Predict drug interaction with different bases.
- b3- Select the best topical formulation based on the disease state of the patient and the required effect.
- b4- Adjust the quality attributes of sterile pharmaceuticals

### c- Professional and practical skills:

- c1- Formulate topical formulations for local and transdermal effects.
- c2- Design rectal and cosmetic formulations.
- c3- Prepare ointments, suppositries and other topical formulations.
- c4-Assess the quality of topical, suppositories and cosmetic products.
- c5- Examine the necessary quality control tests of parenterals and other sterile products.

#### d- General and transferable skills

- d1-Retrieve and evaluate information on pharmaceutical formulation.
- d2-Demonstrate critical thinking, problem solving and decision making abilities.
- d3-Demonstrate leadership and team working abilities.
- d4-Develop background about lenses and ocuserts.

#### 3. Contents

Week	Topic	Total credit hours	Lecture	Practical (credit hours)
1	Introduction – Structure and function of the skin- Target area of treatment after topical application to skin	3	2	1
2	Basic principles of diffusion through membranes and factors affecting percutaneous absorption	3	2	1
3	Enhancement of skin penetration	3	2	1
4	Transdermal Drug Delivery Systems (TDDS)	3	2	1
5	Traditional dermatological formulations- classification of ointment bases	3	2	1
6	Preparation of topical formulation including ophthalmic ointments	3	2	1
7	Periodical exam			
8	Suppositories and pessaries-			

	factors affecting rectal	3	2	1
	absorption			
	Suppository vehicles			
9		3	2	1
	Vaginal inserts -Preparation of			
10	suppositories - displacement	3	2	1
	values in suppository bases			1
	Specific problems in			
11	formulation of suppositories-			
	Quality control tests for	3	2	1
	suppositories		_	
12	Parenterals	3	2	1
13	parenterals(cont.)	3	2	1
14	Ophthamlic solutions and	2	2.	Practical exam
17	suspensions	2	<u> </u>	Tractical Chain
15	Contact lenses and ocuserts	2	2	Practical exam

# 4. Teaching and learning methods

a. Lectures $(\sqrt{\ })$ b. Practical training / laboratory $(\sqrt{\ })$ c. Seminar / Workshop $(\sqrt{\ })$ d. E-learning $(\sqrt{\ })$ e. smart board $(\sqrt{\ })$ 

# **5. Student assessment methods**

Written periodical	To assess	The ability of students to follow-up
exam	10 435033	the course subjects.
Practical exam	To assess	The gained experience in laboratory
		methods and techniques.
Written final exam	To assess	The overall outcomes.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.

## **Assessment schedule**

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

# Weighting or assessments

Periodical Examination	10	%
1 CHOUICAI 12xaiiiiianoii	10	70

<b>Practical Examination</b>	25	<b>%</b>
Final-Term Examination	50	<b>%</b>
Oral Examination	15	<b>%</b>
Total	100	%

#### 6. List of references

Course notes

Notes and Lab manual prepared by the department staff.

Essential books (text books)

Michael E. Aulton, Aulton's Pharmaceutics: The Design and Manufacture of Medicines, Kevin Taylor, Fifth Edition, 2018.

Recommended books

<u>Yvonne Perrie</u>, <u>Thomas Rades</u>, FASTtrack: Pharmaceutics - Drug Delivery and Targeting, Second edition, Pharmaceutical Press, 2012.

Websites

www.pubmed.com

www.sciencedirect.com

# 7. Facilities required for teaching and learning

- Class rooms.
- Laboratory facilities (Equipment of factory).
- Data show.
- E-Learning
- Smart board

- Computers.
- Internet and library.

#### **Course coordinator:**

Prof. Dr/ Gamal Elmaghraby

# **Head of Department:**

Prof. Dr/ Abd El -aziz El-said

Date: 9 /2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment Course title: Pharmaceutical Dosage Forms-2 Course code: PT505

Course Contents		ILOs	Teaching and Learning Methods	Student Assessment Methods	
Week # 1	Introduction – Structure and function of the skin- Target area of treatment after topical application to skin	a1, b3	Lectures	Written, practical and oral exams	
Week # 2	Basic principles of diffusion through membranes and factors affecting percutaneous absorption	a1,d2	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 3	Enhancement of skin penetration	a2, b1, d2	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 4	Transdermal Drug Delivery Systems (TDDS)	a3, b1, c1, d1, d2, d3	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 5	Traditional dermatological formulations- classification of ointment bases	a4, b2, b3, c1, d1, d3	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 6	Preparation of topical formulation including ophthalmic ointments	a5, b2, c1, c3, c4, d3	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 7	Mid-term exam				
Week # 8	Suppositories and pessaries- factors affecting rectal absorption	a1, d1, d2	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 9	Suppository vehicles	a1, a5	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 10	Vaginal inserts -Preparation of suppositories - displacement values in suppository bases	a5, c1, c2, c3, d3	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 11	Specific problems in formulation of suppositories- Quality control tests for suppositories	a5, c2, c4, d2, d3	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 12	Parenterals	a6, a7, b4, c5, d3	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 13	parenterals(cont.)	a6, a7, b4, c5, d3	Lectures, seminar and practical training	Written, practical and oral exams	
Week # 14	Ophthamlic solutions and suspensions	a6, a7, b4, c5, d3	Lectures	Written and oral exams	
Week # 15	Contact lenses and ocuserts	a6, a7, b4, c5, d3,d4	Lectures	Written and oral exams	

**Course coordinator:** 

**Head of department:** 

**Prof. Dr/ Gamal Elmaghraby** 

Prof. Dr/ Abd El -aziz El-said

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy (Clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Biochemistry
Academic Year / Level	Third level, semester 5
Date of specification approval	9/2020

#### A- Basic Information

Title: Biochemistry 2	Code :PB 502
Total credit Hours :3	Lecture :2
Tutorial:	Practical:1

#### **B- Professional Information**

# 1. Overall aims of the course: upon successful completion of this course, the students should be able to understand:

- The fundamental aspects of Biochemistry to the function of living system.
- The structure and function of living matter in molecular terms.
- The relationship between deffective protein mechanisms, DNA and their correlation to some diseases.
- Interpretation of laboratory analytical data concerning clinical disorders.

#### 2. Intended learning outcomes of the course (ILOs)

# a- Knowledge and understanding: upon successful completion of this course, the students should be able to:

- a1. Demonstrate the chemistry of amino acids.
- a2. Discuss the relationship between amino acid metabolism and diseases
- a3. Explain inborn errors and how to manage it
- a4. Define protein structure and functions.
- a5. Describe Heme metabolism
- a6. Explain protein synthesis.
- a7. Identify DNA and RNA structure and replication.
- a8. Define mutations.
- a9. List the different PCR techniques and applications.

#### **b- Intellectual skills**

- b1. Assess biochemical basis for elucidation of some metabolic diseases.
- b2. Recognize interrelationships between biochemistry and medicine.
- b3. Calculate the energy production from metabolism.
- b4. Assess some clinical disorders and protective guidelines.

#### c- Professional and practical skills

- c1. Examine laboratory glass-wares and instruments used for determination of the different components in the biological fluids.
- c2. Assess the safety guidelines for lab work
- c3. Analyze the molecules found in biological fluids
- c4. Assess the concentration of some metabolic and biological compounds present in urine and in blood samples.
- c5. Demonstrate the obtained data and their diagnostic significance compared with their reference values.
- c6. Analyze and interpret PCR reports.
- c7. Analyze chemical reagents especially some dangerous materials.

#### d- General and transferable skills

- d1. Communicate with others to avoid metabolic-related diseases.
- d2. Assess biochemical investigations to diseases and suggest their causes.
- d3. Develop health by means of life-style and adequate balanced nutrition.
- d4. Work effectively in a team work.

#### 3. Contents

Week	Topic	Total credit	Lecture	Practical
1	A · · · · · · · · · · · ·	hours		1
1	Amino acid chemistry	3	2	1
2	Amino acid metabolism	3	2	1
3	Inborn errors of amino acids	3	2	1
4	Protein chemistryand	3	2	1
	functions			
5	Physical structures of proteins	3	2	1
6	Heme metabolism	3	2	1
7	Mid-term exam	3		1
8	DNA,nucleotides and base	3	2	1
	pairing			
9	DNA,replication and errors.	3	2	1
10	DNA and RNAs and	3	2	1
	polymerases			
11	Protein synthesis and Central	3	2	1
	dogma of molecular biology			
12	PCR and applications	3	2	1
13	Types and causes of	3	2	1
	mutations			
14	Metabolic interrelationships	2	2	Practical
	_			exam
15	Catabolism of DNA	2	2	Practical
				exam

#### 4. Teaching and learning methods

a. Lectures  $(\sqrt{})$ 

**b.** Practical training / laboratory  $(\sqrt{})$ 

c. Class Activity (brain storming &discussion) ( $\sqrt{}$ )

d. E-learning  $(\sqrt{})$ 

#### 5. Student assessment methods

Periodical exam	To assess	The ability of students to follow-up
		The course subjects.
Practical exam	To assess	The gained experience in laboratory
		methods and techniques.
Written final exam	To assess	The overall outcomes.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.

#### **Assessment schedule**

Assessment 1	Periodical exam	Week	7
Assessment 2	Practical exam	Week	14,15
<b>Assessment 3</b>	Written final exam	Week	16,17
<b>Assessment 4</b>	Oral exam	Week	16,17

#### Weighting or assessments

Periodical exam	10	%
Practical exam	25	<b>%</b>
Written final exam	50	%
Oral exam	15	<b>%</b>
Semester Work		%
Other types of assessment		<b>%</b>
Total	100	<b>%</b>

#### 6. List of references

#### Course notes

- Notes in Biochemistry by staff-members of department of Biochemistry.
- Lab.manual in Clinical Biocemistry by staff-members of epartment of Biochemistry.

#### Essential books (text books)

- 1- Biochemistry, Ferrier, Denise R (2017), 7th Edition, Lippincott Williams and Wilkins.
- 2- Harper's illustrated Biochemistry by Murray RK, Bender DA, Botham KM, Kennelly PJ, Rodwell VW, P. Anthony Weil PA (2018), 31th Edition, McGraw Hill.
- 3- Essentials of Biochemistry (For Medical Students), Shivananda Nayak B (2013) 2<sup>nd</sup> Edition, Jaypee Brothers Medical Publishers.
- 4- Essential Biochemistry: Pratt CW and Cornely K (2014), 3<sup>rd</sup> edition John Wiley &Sons Inc., USA.

Recommended books

- 1-Biochemistry, LubertStryer (2015), 8th Edition, WH Freeman.
- 2-Biochemistry with Clinical Correlations, Devlin TM (2015), 7th Edition ,Wiley-Liss INC, USA.
- 3- Biochemistry, Satyanarayana and Chakrapani (2013), 4th Edition USA.

#### Websites

www.highwire.com, www.google.com,www.pubmed.com &www.biomed.net

#### 7. Facilities required for teaching and learning

- -Class rooms.
- -Laboratory facilities including instruments and tools necessary for practical work e.g. glass wares, pH meters , electrophoretic apparatus, centrifuge, spectrophotometers, session rooms
- -Library.
- Data show
- -Computers.
- -Internet.
- E-learning.
- Smart board.

#### **Course coordinator:**

Prof .Dr: Nabil Mohie

### **Head of Department:**

Prof. Dr. Ramadan Ahmed Aldomany

Date: 9/2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Biochemistry 2 Course code: PB 502

Course title: Biochemistry 2 Course code:			PB 502		
Course Cor	ntents	ILOs	Teaching and Learning Methods	Student Assessment Methods	
Week # 1	Amino acid chemistry	a1,c1,c2, c7, d4	Lectures and practical training	Written, practical and oral exams	
Week # 2	Amino acid metabolism	a2, b3, c1, c2, c3, d4	Lectures, practical training, discussion and brain storming	Written, practical and oral exams	
Week # 3	Inborn errors of amino acids	a3. b1, b2, b4, c1, c5, d2, d4	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 4	Protein chemistry	a1, a4, c1, c2, c7, d4	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 5	Physical structures of proteins	a1, a4, c1, c2, c7, d4	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 6	Heme metabolism	a5, b1, b2, b4, c1, c3, c4, c5	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 7	Mid-term exam				
Week # 8	DNA,nucleotides and base pairing	a7, c1, c2, c3, d4	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 9	DNA,Replication and errors.	a7, c1, c2, c3, d4	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 10	RNAs and polymerases	a7, c1, c2, c3, d4	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 11	Protein synthesis and Central dogma of molecular biology	a6, c1, c2, c3, d4	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 12	PCR and applications	a9, b2, c5, c6, d2, d4	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 13	Types and causes of mutations	a8, b1, b2, b4, c3, c6	Lectures and practical training, discussion and brain storming	Written, practical and oral exams	
Week # 14	Metabolic interrelationships	a2, b1, b3, c1, c4, d1, d4	Lectures and practical training, discussion and brain storming	Written and oral exams	
Week # 15	Catabolism of DNA	a7, c1, c2, c3, d4	Lectures and practical training, discussion and brain storming	Written and oral exams	

Course coordinator: Prof. Dr. Nabil Mohie

Head of department: Prof. Dr. Ramadan Ahmed Aldomany

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy (Clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmacognosy
Academic Year / Level	Third level/ Semester 5
Date of specification approval	9/ 2020

#### **A- Basic Information**

Title :Phytochemistry 2	Code :PG 505
Credit Hours :3	Lecture :2
Tutorial:	Practical :1

#### **B- Professional Information**

#### 1. Overall aims of course

Upon successful completion of this course, the students should be able to understand:

- The chemistry and biological activity of alkaloids and glycosides, in addition to hallucinating and anti-cancer drugs.
- The different techniques of chromatography and separation.

# 2. Intended learning outcomes of course (ILOs)

# a- Knowledge and understanding:

**Upon successful completion of this course, the student must be able to:** 

- a1-Describe the chemistry of glycosides and alkaloids, in addition to hallucinating and anti-cancer drugs.
- a2-Identify botanical occurrence, extraction, isolation, identification and determination procedures of alkaloids.
- a3- Describe different types of hallucinating and anti-cancer drugs
- a4- Describe the different chromatographic techniques and types.

#### **b- Intellectual skills**

- b1- Demonstrate the chemical structures and uses of different groups of phytochemical classes.
- b2-predict the possible leads to new drugs depending on natural product templates.
- b3- Select the different methods used for quantitative and qualitative determination of different groups of phytochemical classes.

# c- Professional and practical skills

- c1- Demonstrate and Analyze different groups of natural products e.g glycosides and alkaloids.
- c2- Analyze different groups of natural products e.g glycosides and alkaloids.
- c3- Analyze different groups of natural products e.g hallucinating and anti-cancer drugs
- c4-Formulate different groups of natural products e.g hallucinating and anti-cancer drugs

# d- General and transferable skills

- d1-Retrieve information from different data sources
- d2- Demonstrate creative thinking and problem solving abilities about separation of glycosides mixtures
- d3- Communicate verbally

#### 3. Contents

Week	Topic	Total credit hours	Lecture	Practical
1	Glycosides: Introduction and classification	3	2	1
2	Glycosides: Anthraquinone	3	2	1
3	Glycosides:Cardiac	3	2	1
4	Glycosides:Flavonoid, saponin, cyanogenetic and thioglycosides.	3	2	1
5	Alkaloids; Introduction, isolation &purification	3	2	1
6	Alkaloids; non heterocyclic, pridine & piperidine.	3	2	1
7	Periodical exam			
8	Alkaloids; tropane	3	2	1
9	Alkaloids; qinoline & isoquinoline.	3	2	1
10	Alkaloids; Indole & purine.	3	2	1
11	Alkaloids; Imidazole, steroid & tropolone.	3	2	1
12	Chromatography: -Introduction, column chromatography and electrophoresis.	3	2	1
13	-Thin layer & paper chromatography	3	2	1
14	HPLC, GC, Gel filteration, Ion exchange.	3	2	1
15	Anti-cancer & hallucinating drugs	3	2	1

# 4. Teaching and learning methods

a. Lectures  $(\sqrt{\ })$ b. Practical training / laboratory  $(\sqrt{\ })$ c. Seminar / Workshop  $(\sqrt{\ })$ d. Class Activity

e. E-learning  $(\sqrt{\ })$ f. Smart board  $(\sqrt{\ })$ 

## 5. Student assessment methods

Periodical exam	To assess	The ability of students to follow-up
		The course subjects.
Practical exam	To assess	The gained experience in laboratory
		methods and techniques.
Written exam	To assess	The overall outcomes
Oral exam	To assess	The ability of students in expressing
		presenting their knowledge clearly
		and in systemic approach

## **Assessment schedule**

Assessment 1	Periodical exam	Week	7
<b>Assessment 2</b>	Practical exam	Week	10,11
<b>Assessment 3</b>	Written exam	Week	16, 17
<b>Assessment 4</b>	Oral	Week	16, 17

# Weighting or assessments

Periodical Examination	10	<b>%</b>
Practical Examination	25	<b>%</b>
Written Examination	50	%
Oral Examination	15	%
Total	100	%

#### 6. List of references

#### Course notes

Notes on phytochemistry and lab manual prepared in the form of a book authorized by the department staff.

#### Essential books (text books)

- Saxena, Mamta, et al. "Phytochemistry of medicinal plants." *Journal of pharmacognosy and phytochemistry* 1.6 (2013).
- Dewick, P. M. Medicinal Natural Products, A biosynthetic approach. 2002, John Wiley & Sons, New York .
- Smith, Ivor, ed. *Chromatography*. Elsevier, 2013.

#### Recommended books

Bruneton. J. Pharmacognosy Phytochemistry Medicinal plants 2nd ed. 1999, Lavoisier *Publishing*, Paris.

-Robbers, J.E.; Spedie, M.R. and Tyler, V.E. Pharmacognosy and Pharmacobiotechnology. 1996, Lippincott Williams & Wilkins

#### Websites

www.biomedcentral.com

www.medscape.com

http://www.sciencedirect.com/

http://www.ncbi.nlm.nih.gov/

### 7. Facilities required for teaching and learning

- -Class rooms.
- -E-learning
- Smart board
- -Laboratory facilities including chemicals, flames, water baths, chemical hood, and essential facilities to perform the practical lessons. —Library.
- Data Show
- -Computers.

-Internet.

#### **Course coordinator:**

Dr.Ahmed Gohar

# **Head of Department:**

Dr. Ramadan Eldomany

Date: 9 /2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Phytochemistry 2 Course code: PG 505

Teaching and Lestures   Lectures   Student   Lectures   Methods   Assessment   Methods   Metho	Course	title: Phytochemistry 2		Course code: 1	r G 303
Week # 1         Glycosides: Introduction and classification         a1,b1,b2,c1,c2,d1,d2 d3         Lectures         Written, and practical and practica			ILOs		
More   March		Lectures			
Week # 2         Glycosides: Anthraquinone         al,bl,b2,c1,c2,d1,d2 d3         Lectures and practical training practical and oral exams         Written, practical and oral exams           Week # 3         Glycosides: Cardiac         al,c2,d1,d2,d3         Lectures and practical training practical and practical and practical and practical and practical and practical and practical training oral exams         Written, practical and practical training oral exams           Week # 4         Glycosides: Flavonoid, saponin, cyanogenetic and thioglycosides.         al,a1,b2,b1,b2,b3,c1,c2 d1,d2,d3         Lectures and practical training oral exams         Written, practical and oral exams           Week # 5         Alkaloids; Introduction, isolation & pricinine & piperidine.         al,a2,b1,b2,b3,c1,c2 d1,d2,d3         Lectures and practical practical and training oral exams         Written, practical and oral exams           Week # 7         Periodical exam         al,a2,b1,b2,b3,c1,c2 d1,d2,d3         Lectures and practical training oral exams         Written, practical and oral exams           Week # 9         Alkaloids; qinoline & isoquinoline.         al,a2,a4,b2,b3,c2,d1 d2,d3         Lectures and practical training oral exams         Written, practical and oral exams           Week # 10         Alkaloids; Inidazole, steroid &tropolone.         al,a2,a4,b2,b3,c2,d1 d2,d3         Lectures and practical training oral exams         Written, practical and oral exams           Week # 12         Chromatography: -Introduction, column chromatography and electr	Week # 1	· · · · · ·		Lectures	· ·
Week # 3         Glycosides: Cardiac         al,c2,d1,d2,d3         practical training practical and oral exams         practical and oral exams           Week # 4         Glycosides: Flavonoid, saponin, cyanogenetic and thioglycosides.         al,b1,b2,c1,c2,d1,d2         Lectures and practical and oral exams         Written, practical and oral exams           Week # 5         Alkaloids; Introduction, isolation & purification         al,a2,b1,b2,b3,c1,c2 d1,d2,d3         Lectures and practical training         Written, practical and oral exams           Week # 6         Alkaloids; non heterocyclic, pridine & piperidine.         al,a2,b1,b2,b3,c1,c2 d1,d2,d3         Lectures and practical and oral exams         Written, practical and oral exams           Week # 7         Periodical exam         al,a2,b1,b2,b3,c1,c2 d1,d2,d3         Lectures and practical and oral exams         Written, practical and oral exams           Week # 9         Alkaloids; qinoline & isoquinoline.         al,a2,a4,b2,b3,c2,d1 d2,d3         Lectures and practical and oral exams         Written, practical and oral exams           Week # 10         Alkaloids; Imidazole, steroid &tropolone.         al,a2,a4,b2,b3,c2,d1 d2,d3         Lectures and practical and oral exams         Written, practical and oral exams           Week # 12         Chromatography: -Introduction, column chromatography         al,a2,a4,b2,b3,c2,d1 d2,d3         Lectures         Written, practical and oral exams           Week # 13         -Thin layer		and classification			
Week # 3         Glycosides: Cardiac         a1,e2,d1,d2,d3         Lectures and practical training         oral exams           Week # 4         Glycosides: Flavonoid, saponin, cyanogenetic and thioglycosides.         a1,b1,b2,c1,c2,d1,d2         Lectures and practical practical training         Written, practical and oral exams           Week # 5         Alkaloids; Introduction, isolation & purification         a1,a2,b1,b2,b3,c1,c2 d1,d2,d3         Lectures and practical and practical and practical and practical and practical training         Written, practical and oral exams           Week # 7         Periodical exam         Alkaloids; tropane.         a1,a2,b1,b2,b3,c1,c2 d1,d2,d3         Lectures and practical and practica	Week # 2	Glycosides: Anthraquinone			
Week # 3         Glycosides:Cardiac         a1,c2,d1,d2,d3         Lectures and practical training rational oral exams         Written, practical and oral exams           Week # 4         Glycosides:Flavonoid, saponin, cyanogenetic and thioglycosides.         a1,b1,b2,c1,c2,d1,d2 .d3         Lectures and practical training practical and oral exams         Written, practical and oral exams           Week # 5         Alkaloids; Introduction, isolation & purification         a1,a2,b1,b2,b3,c1,c2 .d1,d2,d3         Lectures and practical training practical and oral exams           Week # 7         Periodical exam         a1,a2,b1,b2,b3,c1,c2 .d1,d2,d3         Lectures and practical practical training practical and oral exams           Week # 9         Alkaloids; tropane.         a1,a2,a4,b2,b3,c2,d1 .d2,d3         Lectures and practical practical training practical and oral exams           Week # 9         Alkaloids; Indole & purine.         a1,a2,a4,b2,b3,c2,d1 .d2,d3         Lectures and practical and oral exams           Week # 10         Alkaloids; Imidazole, steroid &tropolone.         a1,a2,a4,b2,b3,c2,d1 .d2,d3         Lectures and practical and oral exams           Week # 12         Chromatography: -Introduction, column chromatography and electrophoresis.         a4,d1,d2,d3         Lectures         Written, practical and oral exams           Week # 13         -Thin layer & paper chromatography         a4,d1,d2,d3         Lectures         Written, practical and oral exams			,d3	-	
Week # 4         Glycosides; Flavonoid, saponin, cyanogenetic and thioglycosides.         a1,b1,b2,c1,c2,d1,d2 and practical practical practical and oral exams         Lectures and practical training practical and oral exams         Written, practical and oral exams           Week # 5         Alkaloids; Introduction, isolation & purification         a1,a2,b1,b2,b3,c1,c2 and practical training         Lectures and practical training practical training         Written, practical and oral exams           Week # 6         Alkaloids; non heterocyclic, pridine & piperidine.         a1,a2,b1,b2,b3,c1,c2 and practical training         Lectures and practical training         Written, practical and oral exams           Week # 7         Periodical exam         a1,a2,b1,b2,b3,c1,c2 and practical training         Lectures and practical training         Written, practical and oral exams           Week # 9         Alkaloids; qinoline & isoquinoline.         a1,a2,a4,b2,b3,c2,d1 and practical training         Lectures and practical training         Written, practical and oral exams           Week # 10         Alkaloids; Indole & purine.         a1,a2,a4,b2,b3,c2,d1 and practical training         Lectures and practical training         Written, practical and oral exams           Week # 11         Alkaloids; Imidazole, steroid & tropolone.         a1,a2,a4,b2,b3,c2,d1 and practical training         Lectures and practical training         Written, practical and oral exams           Week # 12         Chromatography:	Week # 3	Glycosides:Cardiac	a1,c2,d1,d2,d3		
Week # 4 Supposition of saponin, cyanogenetic and thioglycosides.         al,b1,b2,c1,c2,d1,d2 and practical practical practical and oral exams         Lectures and practical and practical and practical and oral exams         Written, practical and oral exams           Week # 5 Alkaloids; Introduction, isolation & purification         al,a2,b1,b2,b3,c1,c2 and d1,d2,d3         Lectures and practical and oral exams         Written, practical and oral exams           Week # 6 Periodical exam         Alkaloids; non heterocyclic, pridine & piperidine.         al,a2,b1,b2,b3,c1,c2 and d1,d2,d3         Lectures and practical and oral exams         Written, practical and oral exams           Week # 7 Periodical exam         Alkaloids; tropane.         al,a2,b1,b2,b3,c1,c2 and d1,d2,d3         Lectures and practical practical practical and oral exams         Written, practical and oral exams           Week # 9 Alkaloids; qinoline & isoquinoline.         al,a2,a4,b2,b3,c2,d1 and d2,d3         Lectures and practical practical and oral exams         Written, practical and oral exams           Week # 10 Alkaloids; Inidazole, steroid &tropolone.         al,a2,a4,b2,b3,c2,d1 and d2,d3         Lectures and practical and practical and oral exams         Written, practical and oral exams           Week # 12 Introduction, column chromatography and electrophoresis.         al,d1,d2,d3         Lectures         Written, practical and oral exams           Week # 13 Introduction, introduction, column chromatography         al,d1,d2,d3         Lectures         Written, practical and oral exams </td <td></td> <td></td> <td></td> <td>-</td> <td></td>				-	
Saponin, cyanogenetic and thioglycosides.	Week # 4		11110 1 0 11 10		
Week # 5    Alkaloids; Introduction, isolation & purification   a1,a2,b1,b2,b3,c1,c2   Lectures and practical and oral exams   Written, practical and oral exams	vveek#4				
Week # 5  Week # 6  Alkaloids; Introduction, isolation & purification  Week # 6  Alkaloids; non heterocyclic, pridine & piperidine.  Week # 7  Week # 8  Alkaloids; tropane.  Week # 9  Alkaloids; qinoline & al,a2,b1,b2,b3,c1,c2 ,d1,d2,d3  Week # 9  Alkaloids; qinoline & al,a2,b1,b2,b3,c2,d1 ,d2,d3  Week # 10  Alkaloids; Indole & purine.  Week # 11  Alkaloids; Indole & purine.  Week # 12  Chromatography: -Introduction, column chromatography and electrophoresis.  Week # 13  Week # 14  HPLC, GC, Gel filteration, Ion exchange.  Week # 15  Alkaloids; Indole & purine al,a2,c1,c2,c3,c4,d1, lectures and practical training and evams  Written, practical and practical training and evams  Written, practical and practical training al,a2,a4,b2,b3,c2,d1 lectures and practical training and evams  Written, practical and practical training al,a2,a4,b2,b3,c2,d1 lectures and practical training and evams  Written, practical and oral exams  Activity  Written, practical and oral exams  Week # 14  HPLC, GC, Gel filteration al,a3,c1,c2,c3,c4,d1, lectures and practical and oral exams  Written, practical and oral exams  Week # 14  HPLC, GC, Gel filteration al,a3,c1,c2,c3,c4,d1, lectures and practical and oral exams  Written, practical and oral exams			,d3	-	-
Week # 10   Alkaloids; Indole & purine.   Week # 11   Alkaloids; Imidazole, steroid & tropolone.   Week # 12   Chromatography: -Introduction, column chromatography and electrophoresis.   Week # 13   Chromatography and electrophoresis.   Week # 14   HPLC , GC , Gel filteration , Into exchange.   Week # 15   Alkaloids; Indole & purine al, a2, d1, d2, d3   Lectures and practical moral exams   Practical and oral exams   Practical and oral exams   Practical and oral exams   Practical and oral exams   Written, practical and oral exams   Week # 12   Chromatography:					
Week # 6       Alkaloids; non heterocyclic, pridine & piperidine.       al,a2,b1,b2,b3,c1,c2, d1,d2,d3       Lectures and practical	Week # 5	· · · · · · · · · · · · · · · · · · ·			′
Week # 6       Alkaloids; non heterocyclic, pridine & piperidine.       a1,a2,b1,b2,b3,c1,c2,d1,d2,d3       Lectures and practical training       Written, practical and oral exams         Week # 7       Periodical exam       a1,a2,b1,b2,b3,c1,c2,d1,d1,d2,d3       Lectures and practical training       Written, practical and oral exams         Week # 9       Alkaloids; qinoline & isoquinoline.       a1,a2,a4,b2,b3,c2,d1,d2,d3       Lectures and practical training       Written, practical and oral exams         Week # 10       Alkaloids; Indole & purine.       a1,a2,a4,b2,b3,c2,d1,d2,d3       Lectures and practical training       Written, practical and oral exams         Week # 11       Alkaloids; Imidazole, steroid &tropolone.       a1,a2,a4,b2,b3,c2,d1,d2,d3       Lectures and practical practical training       Written, practical and oral exams         Week # 12       Chromatography: - Introduction, column chromatography and electrophoresis.       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 13       -Thin layer & paper chromatography       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 14       HPLC , GC , Gel filteration , Ion exchange.       a4,c1,c2,d1,d2,d3       Lectures       Written, and oral exams         Week # 15       Anti-cancer & hallucinating       a1,a3,c1,c2,c3,c4,d1,       Lectures       Written, and oral exams		isolation & purification	,d1,d2,d3	-	
Week # 10  Week # 11  Alkaloids; Imidazole, steroid & tropolone.  Week # 12  Chromatography: -Introduction, column chromatography and electrophoresis.  Week # 13  Week # 14  Week # 14  HPLC, GC, Gel filteration, Ion exchange.  Week # 15  Alkaloids, inin interocyclic, d1,d2,d3  Alkaloids; practical and oral exams  Alkaloids; tropane.  al,a2,b1,b2,b3,c1,c2	Week # 6	Alkalaida nan hataraayalia	a1 a2 b1 b2 b3 c1 a2		
Week #7         Periodical exam           Week #8         Alkaloids; tropane.         a1,a2,b1,b2,b3,c1,c2,d1,d2,d3         Lectures and practical training and oral exams         Written, practical and oral exams           Week #9         Alkaloids; qinoline & isoquinoline.         a1,a2,a4,b2,b3,c2,d1,d2,d3         Lectures and practical training and oral exams         Written, practical and oral exams           Week #10         Alkaloids; Indole & purine.         a1,a2,a4,b2,b3,c2,d1,d2,d3         Lectures and practical training and oral exams         Written, practical and oral exams           Week #11         Alkaloids; Imidazole, steroid &tropolone.         a1,a2,a4,b2,b3,c2,d1,d2,d3         Lectures and practical training and oral exams         Written, practical and oral exams           Week #12         Chromatography: -Introduction, column chromatography and electrophoresis.         a4,d1,d2,d3         Lectures         Written, practical and oral exams           Week #13         -Thin layer & paper chromatography         a4,d1,d2,d3         Lectures         Written, practical and oral exams           Week #14         HPLC , GC , Gel filteration , Ion exchange.         a4,c1,c2,d1,d2,d3         Lectures         Written, and oral exams           Week #15         Anti-cancer & hallucinating         a1,a3,c1,c2,c3,c4,d1,         Lectures         Written, and oral exams					′
Week # 8       Alkaloids; tropane.       a1,a2,b1,b2,b3,c1,c2,d1,d2,d3       Lectures and practical training practical and oral exams         Week # 9       Alkaloids; qinoline & isoquinoline.       a1,a2,a4,b2,b3,c2,d1,d2,d3       Lectures and practical and oral exams         Week # 10       Alkaloids; Indole & purine.       a1,a2,a4,b2,b3,c2,d1,d2,d3       Lectures and practical and oral exams         Week # 11       Alkaloids; Imidazole, steroid &tropolone.       a1,a2,a4,b2,b3,c2,d1,d2,d3       Lectures and practical and oral exams         Week # 12       Chromatography: -Introduction, column chromatography and electrophoresis.       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 13       -Thin layer & paper chromatography       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 14       HPLC , GC , Gel filteration , Ion exchange.       a4,c1,c2,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 15       Anti-cancer & hallucinating       a1,a3,c1,c2,c3,c4,d1, Lectures       Written, and Activity       Written, and Activity		pridifie & piperidifie.	,01,02,03	-	
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Week#9       Alkaloids; qinoline & isoquinoline.       a1,a2,a4,b2,b3,c2,d1 d2,d3       Lectures and practical and oral exams         Week#10       Alkaloids; Indole & purine.       a1,a2,a4,b2,b3,c2,d1 d2,d3       Lectures and practical and oral exams         Week#11       Alkaloids; Imidazole, steroid &tropolone.       a1,a2,a4,b2,b3,c2,d1 d2,d3       Lectures and practical practical and oral exams         Week#12       Chromatography: Introduction, column chromatography and electrophoresis.       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week#13       -Thin layer & paper chromatography       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week#14       HPLC, GC, Gel filteration , Ion exchange.       a4,c1,c2,d1,d2,d3       Lectures       Written, practical and oral exams         Week#15       Anti-cancer & hallucinating       a1,a3,c1,c2,c3,c4,d1, Lectures       Written, and oral exams	Week # 8	Alkaloids; tropane.	a1,a2,b1,b2,b3,c1,c2	Lectures and	Written,
Week # 9       Alkaloids; qinoline & isoquinoline.       a1,a2,a4,b2,b3,c2,d1 ,d2,d3       Lectures and practical training       Written, practical and oral exams         Week # 10       Alkaloids; Indole & purine.       a1,a2,a4,b2,b3,c2,d1 ,d2,d3       Lectures and practical training       Written, practical and oral exams         Week # 11       Alkaloids; Imidazole, steroid &tropolone.       a1,a2,a4,b2,b3,c2,d1 ,d2,d3       Lectures and practical training Activity       Written, practical and oral exams         Week # 12       Chromatography: - Introduction, column chromatography and electrophoresis.       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 13       -Thin layer & paper chromatography       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 14       HPLC , GC , Gel filteration , Ion exchange.       a4,c1,c2,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 15       Anti-cancer & hallucinating       a1,a3,c1,c2,c3,c4,d1, Activity       Lectures       Written, and oral exams		1		-	
isoquinoline.  Week # 10 Alkaloids; Indole & purine.  Alkaloids; Imidazole, steroid & tropolone.  Week # 12 Chromatography: -Introduction, column chromatography and electrophoresis.  Week # 13 -Thin layer & paper chromatography -Thomatography -Thin layer & paper chromatography -Thin layer & paper at a4,d1,d2,d3 -Thin layer & paper chromatography -Thin layer & pape	*** * " 0				
Week # 10       Alkaloids; Indole & purine.       a1,a2,a4,b2,b3,c2,d1 ,d2,d3       Lectures and practical training       Written, practical and oral exams         Week # 11       Alkaloids; Imidazole, steroid &tropolone.       a1,a2,a4,b2,b3,c2,d1 ,d2,d3       Lectures and practical training Activity       Written, practical and oral exams         Week # 12       Chromatography: -Introduction, column chromatography and electrophoresis.       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 13       -Thin layer & paper chromatography       a4,d1,d2,d3       Lectures       Written, practical and oral exams         Week # 14       HPLC , GC , Gel filteration , Ion exchange.       a4,c1,c2,d1,d2,d3       Lectures Activity       Written, and oral exams         Week # 15       Anti-cancer & hallucinating       a1,a3,c1,c2,c3,c4,d1, Activity       Lectures       Written, and oral exams	Week # 9	_			
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Week # 11       Alkaloids; Imidazole, steroid &tropolone.       a1,a2,a4,b2,b3,c2,d1 ,d2,d3       Lectures and practical training Activity       Written, practical and oral exams         Week # 12       Chromatography:				-	
steroid &tropolone.  Week # 12 Chromatography: -Introduction, column chromatography and electrophoresis.  Week # 13 -Thin layer & paper chromatography  Week # 14 HPLC, GC, Gel filteration , Ion exchange.  Week # 15 Anti-cancer & hallucinating  Ativity  a4,d1,d2,d3   Dectared and practical training practical and oral exams  a4,d1,d2,d3   Lectures   Written, practical and oral exams  Written, practical and oral exams  a4,d1,d2,d3   Lectures   Written, and oral exams  Written, and oral exams				training	oral exams
Week # 12  Chromatography: -Introduction, column chromatography and electrophoresis.  Week # 13  -Thin layer & paper chromatography  Week # 14  HPLC, GC, Gel filteration , Ion exchange.  Week # 15  Anti-cancer & hallucinating  Training Activity  a4,d1,d2,d3  Lectures  Written, practical and oral exams  Written, practical and oral exams  Written, practical and oral exams  Written, and oral exams	Week # 11	Alkaloids; Imidazole,	a1,a2,a4,b2,b3,c2,d1		Written,
Week # 12       Chromatography:		steroid &tropolone.	,d2,d3		*
Week # 12       Chromatography:		_			oral exams
-Introduction, column chromatography and electrophoresis.  Week # 13 -Thin layer & paper chromatography  Week # 14 HPLC, GC, Gel filteration Jon exchange.  Week # 15 Anti-cancer & hallucinating a1,a3,c1,c2,c3,c4,d1, Lectures Written, and Activity Activity  Weiten, and Activity Activity  Practical and oral exams  Written, and oral exams  Written, and oral exams	Week # 12	Chromatography:	a4 d1 d2 d3	•	Written.
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Week # 14 HPLC, GC, Gel filteration , Ion exchange.  Week # 15 Anti-cancer & hallucinating a1,a3,c1,c2,c3,c4,d1, Lectures Activity  Written, and oral exams  Written, and oral exams		ciromatograpny			*
, Ion exchange.  Week # 15  Anti-cancer & hallucinating a1,a3,c1,c2,c3,c4,d1, Lectures Written, and	Week # 14	HPLC . GC . Gel filteration	a4,c1,c2,d1.d2.d3	Lectures	
Week # 15 Anti-cancer & hallucinating a1,a3,c1,c2,c3,c4,d1, Lectures Written, and			, , , , , , , . ,	Activity	oral exams
10 10	Week # 15		a1,a3,c1,c2,c3,c4,d1,	Lectures	Written, and
		_		Activity	oral exams

Course coordinator: Dr. Ahmed Gohar Head of Department: Dr. Ramadan Eldomany

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy (Clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmaceutical Technology
Department supervising the course	
Academic Year / Level	Third level/ Semester 5
Date of specification approval	9/ 2020

## **A- Basic information:**

Title: Pharmacy Administration	Code : PT 506
<b>Total Credit Hours :2</b>	Lecture :2
Tutorial :	Practical :

#### **B- Professional Information**

#### 1. Overall aims of course

**Upon successful completion of this course, the students should be able to understand:** 

- Management, registration of accounting operations and financial ledger, daily ledger, and preparation of the pharmacy audit skills in addition to oversight in the area of pharmaceutical trade and industry.
- planning profitability of pharmaceutical organization of manufacture, planning, selling of pharmaceutical products.

# 2. Intended learning outcomes of course (ILOs)

# a- Knowledge and understanding:

Upon successful completion of the course, the students should be able to :

- a1- Describe the basics of pharmacy administration.
- a2- Discuss the concepts of management skills in addition to oversight in the area of pharmaceutical trade and industry.
- a3- Describe the Measuring the profitability of the pharmacist activity and the preparation of the budget for pharmacies.
- a4- Identify the management ways of different types of pharmaceutical

organizations.

a5- Know the administration plans and executive managements tools of pharmaceutical organizations.

#### **b- Intellectual skills**

- b1- Recognize skills necessary for the registration of accounting
- b2- Recognize the counting operations and financial ledger, daily ledger, and preparation of the pharmacy audit

### c- Professional and practical skills

- c1- Correlate skills necessary for the registration of accounting operations and financial ledger, daily ledger, and preparation audit.
- c2- Assess the profitability of the pharmacist activity and the preparation of the budget for pharmacies.
- c3- Analyze Planning selling prices of pharmaceutical products.

### d- General and transferable skills

- d1-Communicate clearly by verbal and written means
- d2- Retrieve and evaluate information in the field of pharmaceutical formulation.
- d3-Demonstrate critical thinking, problem solving, decision making abilities, leadership and team working abilities.

#### 3. Contents

Week	Topic	Total credit hours	Lecture	Practical (credit hours)
1	Concept of pharmaceutical business administration	2	2	
2	The administrative and financial concepts in the planning and control of the pharmaceutical activity and trade.	2	2	
3	Financial accounting for the pharmaceutical issues:-Daily ledger.	2	2	
4	Ledger and the preparation of the balance sheet.	2	2	
5	Inventories.	2	2	
6	Final accounts and measuring the profitability of pharmaceutical activity.	2	2	

7	Periodical Exams			
8	The financial position of pharmaceuticals.	2	2	
9	Cost accounting of manufacturing activity:- Theories measuring the manufacturing costs.	2	2	
10	Measurement of the manufacturing results in pharmaceutical companies.	2	2	
11	Planning of the profitability of pharmaceutical manufacturing.	2	2	
12	Pricing of pharmaceutical products.	2	2	
13	OTC merchandising, advertising,	2	2	
14	OTC merchandising, advertising (cont.)	2	2	
15	Interpersonal communication, and interprofessional relations and patient consultation.	2	2	

# 4. Teaching and learning methods

_	O	,
a. Lectur	res	$(\sqrt{})$
c. Semin	ar / Workshop	$(\sqrt{})$
d. Class	Activity	$(\sqrt{})$
e. E-lear	rning	$(\sqrt{})$
f. Smart	t board	$(\sqrt{})$

# 5. Student assessment methods

Written mid-term	To assess	The ability of students to follow-up
exam		the course subjects.
Written final exam	To assess	The overall outcomes.

## **Assessment schedule**

Assessment 1	Mid-term exam	Week	7
Assessment 2	Final exam	Week	16,17

# Weighting or assessments

_			
	Mid-Term Examination	10	<b>%</b>
ſ	Final-Term Examination	90	%
Ī	Total	100	%

#### 6. List of references

#### Course notes

Notes and lab manual prepared by the department staff.

#### Essential books (text books)

- •Abood, R.R. (2011). Pharmacy practice and law (6th ed.). Sudbury, Mass. : Jones and Barlett Publisher.
- Chisholm-Burns, M., Vaillancourt, A.M. & Sheperd, M. (eds.) (2011). Pharmacy management, leardership, and finance. Sudbury, Mass.: Jones and Bartlett Publishers.

#### Recommended books

- •DeCoske, M.A., Tyron, J.E. & White, S. J.(2011). The pharmacy leadership field guide :cases and advice for everyday situations.Bethesda, Md. : American Society of Health-System Pharmacists, Inc.
- •Zgarrick, D.P., Alston, G.L., Moczygemba, L.R. and Desselle, S.P. (Eds.). (2016). Pharmacy management: essentials for all practice settings (4th ed.). New York: McGraw-Hill Medical.

#### Websites

www.pubmed.com

www.sciencedirect.com

### 7. Facilities required for teaching and learning

- Class rooms.
- Data show.
- Smart board.
- Unit for distance learning.
- Computers.
- Internet.
- Library.

#### **Course coordinator:**

Dr. Magdy Thabet

#### **Head of Department:**

Prof. Dr. Abdelaziz Elashmawy

Date: 9/2020

#### **Course Plan**

Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment Course title: pharmacy administration Course code: PT506

Course true: pharmacy administration			Teaching and	Student
	<b>Course Contents</b>	ILOs	Learning and Learning Methods	Assessment Methods
Week # 1	Concept of pharmaceutical business administration	a1	Lectures	Written and oral exams
Week # 2	The administrative and financial concepts in the planning and control of the pharmaceutical activity and trade.	a2,d1	Lectures and seminar.	Written and oral exams
Week # 3	Financial accounting for the pharmaceutical issues:- Daily ledger.	a1,b2,d1	Lectures and seminar.	Written and oral exams
Week # 4	Ledger and the preparation of the balance sheet.	a1,b2,d3	Lectures and seminar.	Written and oral exams
Week # 5	Inventories	a1,a2,d1	Lectures and seminar.	Written and oral exams
Week # 6	Final accounts and measuring the profitability of pharmaceutical activity.	a2,b1,c2,d1	Lectures	Written and oral exams
Week # 7	Midterm exam			
Week # 8	The financial position of pharmaceuticals.	b1, b2,c1,d2	Lectures and seminar.	Written and oral exams
Week # 9	Cost accounting of manufacturing activity:- Theories measuring the manufacturing costs.	b2,c1,c2	Lectures	Written and oral exams
Week # 10	Measurement of the manufacturing results in pharmaceutical companies	a4,a5,d1	Lectures and seminar.	Written and oral exams
Week # 11	Planning of the profitability of pharmaceutical manufacturing.	a4,a5,d2	Lectures and seminar.	Written and oral exams
Week # 12	Pricing of pharmaceutical products.	a3,c2,c3	Lectures	Written and oral exams
Week # 13	OTC merchandising, advertising,	a2,a3	Lectures	Written and oral exams
Week # 14	OTC merchandising, advertising (cont.)	a1,a2,a3	Lectures	Written and oral exams
Week # 15	Interpersonal communication, and interprofessional relations and patient consultation.	a2,a3	Lectures	Written and oral exams

### **Course coordinator:**

Dr. Magdy Thabet

**Head of Department:** 

Prof. Dr. Abdelaziz Elashmawy

Date: 9/2020

# Kafrelsheikh University, Faculty of Pharmacy

# **Course Specifications**

Program on which the course is given	Bachelor in Pharmacy(Clinical
	Pharmacy
Major or minor element of program	Major
Department offering the course	Microbiology and Immunology
Department supervising the course	Microbiology and Immunology
Academic Year / Level	Third level/ Semester 5
Date of specification approval	September 2020

## **A- Basic information:**

Title : Pharmaceutical Microbiology	Code : PM 704
Credit Hours :3	Lecture :2
Tutorial :	Practical :1

#### **B- Professional Information**

#### 1. Overall aims of the course

#### Upon successful completion of this course, the students should be able to understand:

- the use of antibiotics, their mechanism of action and resistance .
- the medical and pharmaceutical uses of antiseptics, disinfectants and antibiotics.
- the different sources of microbial contamination and microbial spoilage of pharmaceutical dosage forms.
- the methodology of preserving pharmaceutical preparations and the factors affecting the process.
- the different techniques used in evaluation of different biocides and antibiotics.
- the suitable method of sterilization for any pharmaceutical preparations.

# 2. Intended learning outcomes of the course (ILOs)

# a- Knowledge and understanding:

#### On successful completion of the course, the student should be able to:

- a1. classify antibiotics, and non antibiotics antimicrobial agents.
- a.2 discuss uses, mechanisms of action , resistance and evaluation of antimicrobial agents.
- a3. Know The methods of microbial contamination of pharmaceutical preparations.
- a4.know the different methods of sterilization
- a5. Describe the validation procedures for sterile and non-sterile products.

#### **b-** Intellectual skills

- b1. Predict the most suitable antibiotic for treatment certain infection.
- b2. Recognize experimental techniques in evaluation of antimicrobial agents.
- b3. Predict different sources of microbial contamination during pharmaceutical preparation.
- b4.Recognize the suitable sterilization methods for different pharmaceuticals.

### c- Professional and practical skills

- c1. Test for the susceptibility of the microorganisms (sensitivity) to different antimicrobial agents.
- c2. Use effectively the best preservative, disinfectant or antiseptic.
- c3. Assess the potency of antimicrobial agents (pure and in pharmaceutical dosage form) by various assay methods.
- c4. Test the sterility of various sterile products.
- c5. Examine how to maintain a sterile area for manufacturing or testing sterile products.

#### d- General and transferable skills

- d1. Construct the proper method for sterilization of different materials.
- d2. Retrieve the general laboratory safety and aseptic techniques protocols.
- d3. Assess different antimicrobial agents based on the results obtained in the laboratory.
- d4.Write report about sterile products.

#### 3. Contents

5. Contents					
Week	Topic	credit hours	Lecture	Practical	
1	Introduction & Classification types of Antibiotics .	3	2	1	
2	Mode of action of Antibiotics.	3	2	1	
3	Antibiotic drug combination				
4	Bacterial resistance to antibiotics	3	2	1	
5	Clinical use and missuse of antibiotics.	3	2	1	
6	Microbiological assay of antibiotics, vitamins	3	2	1	
7	periodical exam				
8	Classification of non antibiotic antimicrobial agents, mode of action &	3	2	1	

	Resistance.			
9	Applications of non antibiotic antimicrobial agents & Evaluation.	3	2	1
10	Microbial contamination of pharmaceutical products & problems	3	2	1
11	Microbial spoilage of pharmaceutical products			
12	Intoduction to Sterilization and Official methods of sterilization	3	2	1
13	Validation of Sterilization process.	3	2	1
14	Microbiological quality of pharmaceuticals	3	2	1
15	Aseptic area and testing of pyrogins	3	2	1

# 4. Teaching and learning methods

a. Lectures	(√)
b. Practical training / laboratory	(√)
c. presintation	(√)
d. E-learning	$(\sqrt{})$

# 5. Student assessment methods

periodical exam	To assess	The ability of students to follow-up
		The course subjects.
Practical exam	To assess	The gained experience in laboratory
		methods and techniques.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.
Written final exam	To assess	The overall outcomes.

# **Assessment schedule**

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

# Weighting or assessments

Periodical Examination	10	<b>%</b>
Final-Term Examination	50	%

Oral Examination	15	<b>%</b>
<b>Practical Examination</b>	25	%
Semester Work		<b>%</b>
Other types of assessment		<b>%</b>
Total	100	<b>%</b>

#### 6. List of references

Course notes

Notes and lab manual of pharmaceutical mcrobiology prepared by department staff members

Essential books (text books)

- W.B. Hugo & A.D. Russell, 2011, Pharmaceutical Microbiology Blackwell Scientific Publication.
- Black, J.C., 2017, Microbiology Principles & Applications (10th edition).

#### Websites

- Google scholar: https://scholar.google.com.eg/
- Pubmed: http://www.ncbi.nlm.nih.gov/pubmed
- Science Direct: http://www.sciencedirect.com/

### 7. Facilities required for teaching and learning

- -Class rooms.
- -Laboratory facilities (microscopes, incubator, autoclave, laminar flow). —Library.
- Data show
- -Computers. -Internet.

#### **Course coordinator:**

Professor Dr. Mohamed Emara

# **Head of Department:**

**Professor Dr.** Ramadan Ahmed Aldomany

Date: 9 /2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: : Pharmaceutical Microbiology Course code: PM 704 Course Contents Student ILOs Teaching Assessment and Learning **Methods** Methods Week a1,d2 Written, Introduction & Classification Lectures # 1 ,practical practical and types of Antibiotics. oral exams Week Mode of action of Antibiotics. a2,b1 Lectures Written, # 2 ,practical practical and oral exams Week b2,c1,c3,d3 Lectures Written, Antibiotic drug combination #3 ,practical practical and oral exams Week Written, a2,b2,c1,c3,d3 Lectures Bacterial resistance to # 4 ,practical practical and antibiotics presentation oral exams Week a2,b1 Written, Clinical use and missuse of Lectures # 5 ,practical practical and antibiotics. presentation oral exams Week a2,b2,c1,c3,d3 Microbiological assay of Lectures Written, #6 ,practical, practical and antibiotics, vitamins presentation oral exams Week periodical exam # 7 Week a1,a2,b2,c1,c3, Lectures Written, Classification of non #8 d3 ,practical, practical and antibiotic antimicrobial presentation oral exams agents, mode of action & Resistance. Week a2,b2,c1,c2,c3, Lectures Written, Applications of non antibiotic # 9 ,practical, practical and antimicrobial agents presentation oral exams &Evaluation. Week a3,b3,c4 Written, Lectures Microbial contamination of # 10 ,practical practical and pharmaceutical products & presentation oral exams problems Week Written, Microbial spoilage of a3,b3,c4 Lectures # 11 practical and ,practical, pharmaceutical products presentation oral exams Week Intoduction to Sterilization a4,b4,c4,d1 Lectures Written, # 12 ,practical , practical and and Official methods of presentation oral exams sterilization Week Validation of Sterilization a5,c4,d4 Lectures Written, # 13 ,practical, practical and process. presentation oral exams Week Written and oral c4,c5 Lectures Microbiological quality of # 14 exams pharmaceuticals

c4,c5,d2,d4

Lectures

Written and oral

exams

Course coordinator: Professor Dr. Mohamed Emara

Aseptic area and testing of

pyrogins

Week

# 15

Head of department: Professor Dr. Ramadan Ahmed Aldomany

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in pharmacy (clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmacology & Toxicology
Department supervising the course	
Academic Year / Level	Fourth year, seventh semester
Date of specification approval	09/2020

#### **A- Basic Information**

Title: Pharmacology 1	Code: PO701
Credit Hours: 3	Lecture: 2
	Practical: 2

### **B- Professional Information**

#### 1. Overall aims of the course

### Upon successful completion of this course, the students should:

- Know general informations about pharmacology including the pharmacokinetics and pharmacodynamics of drugs
- Understand the mechanism of action of different drugs affecting the autonomic nervous system, cardiovascular system and renal system.
- Assess the use and the side effects of such drugs.
- Practically screen drugs affecting the autonomic nervous system in laboratory animals.

# 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

- a1.State general principles of pharmacology and define the concepts of pharmacokinetics, pharmacodynamics and pharmacotherapeutics
- a2. List the different categories of parasympathetic- and sympathetic-acting drugs
- a3. Define hypertension and drug therapy.
- a4. Recognize the different types of cardiac diseases, such as arrhythmia and congestive heart failure, and list the different types of drugs used in management of this disorder.
- a5. Discuss the drug categories to treat renal failure.

#### **b- Intellectual skills**

b1. Demonstrate the receptor theory and compare between, agonists and antagonists, compare between sympathetic and parasympathetic nervous systems, explain the different categories of parasympathomimetics and parasympatholytics with respect to their pharmacological, effects on various organ systems, side effects and drug

interaction, and discuss the sympathomimetics and sympatholytics with respect to their general properties, metabolism, pharmacological effects and toxicity.

- b2. Differentiate between the different categories of anti- hypertension as well as anti-arrhythmic.
- b3. Correlate the different pharmacologic interventions used to manage CHF especially cardiac glycosides and illustrate the nature of angina pectoris and different types of drugs that used to manage it.
- b4. Differentiate between different types of diuretics.

### c- Professional and practical skills

- c1. Demonstrate the in vitro experiments on isolated organs from laboratory animals.
- c2. Carry out the dose-response relationship of the different drug preparations.
- c3. Recognize the pharmacological effects of different autonomic drugs in invivio experiments
- c4. Select suitable cardiovascular drugs according to patients criteria

#### d- General and transferable skills

- d1. Develop interpersonal skills; the ability to interact effectively with patients, the public and health care professionals; including communication, both written and oral.
- d2. Communicate clearly by verbal means and appreciate the joint effort in teamwork
- d3. Retrieve and evaluate information from different sources.
- d4. Demonstrate critical-thinking abilities.

### 3. Contents

Week	Topic	Total	Lecture	Practical
		contact		
		hours		
1	General pharmacology	4	2	2
2	General pharmacology	4	2	2
3	Pharmacological actions of	4	2	2
	drugs acting on autonomic			
	nervous system			
4	Pharmacological actions of	4	2	2
	drugs acting on autonomic			
	nervous system (cont.)			
5	Pharmacological actions of	4	2	2

	drugs acting on autonomic			
	nervous system(cont.)			
6	Pharmacological actions of	4	2	2
	drugs acting on autonomic	•	_	<b>–</b>
	nervous system (cont.)			
7	Semseter work			
8	Pharmacological actions of	4	2	2
	drugs acting on autonomic	_		_
	nervous system (cont.)			
9	Pharmacological actions of	4	2	2
	drugs acting on			
	cardiovascular system			
10	Pharmacological actions of	4	2	2
	drugs acting on			
	cardiovascular system			
	(cont.)			
11	Pharmacological actions of	4	2	2
	drugs acting on			
	cardiovascular			
	system(cont.)			
12	Pharmacological actions of	4	2	2
	drugs acting on			
	cardiovascular system			
	(cont.)			
13	Pharmacological actions of	4	2	Revision
	drugs acting on			
	cardiovascular system			
<u> </u>	(cont.)			
14	Pharmacological actions of	2	2	Practical exam
	drugs acting on kidney	_		
15	Pharmacological actions of	2	2	Practical exam
	drugs acting on kidney			

# 4. Teaching and learning methods

a. Lectures	$(\sqrt{})$
b. Practical training / laboratory	()
c. Seminar / Workshop	( )
d. Class Activity	$(\sqrt{})$
e. E- learning	(√)
f. Smart board	$(\sqrt{})$

# 5. Student assessment methods

Semester work	To assess	The ability of students to follow-up
		The course subjects.
Practical exam	To assess	The gained experience in laboratory
		methods and techniques.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.

Written final exam	To assess	The overall outcomes.
written imai exam	10 assess	The overall outcomes.

#### Assessment schedule

Assessment 1	Semester work	Week	7
<b>Assessment 2</b>	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

### Weighting or assessments

Final-Term Examination	50	%
Oral Examination	15	<b>%</b>
<b>Practical Examination</b>	25	<b>%</b>
Semester Work	10	<b>%</b>
Total	100	<b>%</b>

#### 6. List of references

Course notes

Notes on pharmacology (Department of Pharm./Tox.

Essential books (text books)

The Pharmacological Basis of Therapeutics (2008).Goodman & Gilman's. 12 <sup>th</sup> edition. The McGraw-Hill Companies

#### Recommended books

- -Basic & Clinical Pharmacology (2003). G. Katzung.9th ed.Lavoisier S.A.S.
- -Pharmacology (2007). Rang H.P.& Dale M. 7<sup>th</sup> Edition. Churchill Livingston London
- -Lippincott Modern Pharmacology (2009). C. Champe, A. Harvey and Denise R. (illustrated pharmacology Review).6 <sup>th</sup> ed. Lippincott Williams & Wilkins

#### Websites

- -www.biomedcentral.com
- -www.Pubmed.com
- -www.medscape.com

# 7. Facilities required for teaching and learning

- Class rooms.
- Laboratory facilities (isolated organs, kymographs).
- The practical part of this course includes identification of the pharmacological effects of some neurotransmitters on isolated organs)
- PCCAL package.
- Library.
- Data show
- Computers.
- Internet.

Course coordinator: Dr. Sherin Zakaria

Head of Department: Dr. Sherin Zakaria

Date: / 9/2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Pharmacology-1 Course code: PO701

Course Contents		ILOs	Teaching and Learning Methods	Student Assessment Methods	
Week # 1	Basic principles of drug actions	a1, b1, c1, d4	Lectures and practical training	Written, practical and oral exams	
Week #	Pharmacological actions of drugs acting on autonomic nervous system	a2, b1, c1,c2,c3, d1, d2, d3	Lectures and practical training, discussion	Written, practical and oral exams	
Week #	Pharmacological actions of drugs acting on autonomic nervous system (cont.)	a2, b1, c1,c2,c3, d1, d2, d3	Lectures and practical training	Written, practical and oral exams	
Week #	Pharmacological actions of drugs acting on autonomic nervous system(cont.)	a2, , b1, c1,c2,c3, d1, d2, d3	Lectures and practical training, discussion	Written, practical and oral exams	
Week # 5	Pharmacological actions of drugs acting on autonomic nervous system (cont.)	a2, b1, c1,c2,c3, d1, d2, d3	Lectures and practical training	Written, practical and oral exams	
Week #	Pharmacological actions of drugs acting on autonomic nervous system (cont.)	a2, b1, c1,c2,c3, d1, d2, d3	Lectures and practical training, e-learning, discussion	Written, practical and oral exams	
Week #	Semester work				
Week #	Pharmacological actions of drugs acting on autonomic nervous system (cont.)	a2, b1, c1,c2,c3, d1, d2, d3	Lectures and practical training, e-learning	Written, practical and oral exams	
Week # 9	Pharmacological actions of drugs acting on cardiovascular system	a3, a4, b2, b3, c4, d1, d3, d4	Lectures and practical training, brain storming	Written, practical and oral exams	
Week # 10	Pharmacological actions of drugs acting on cardiovascular system(cont.)	a3, a4, b2, b3, c4, d1, d3, d4	Lectures and practical training, case study, brain storming	Written, practical and oral exams	
Week # 11	Pharmacological actions of drugs acting on cardiovascular system (cont.)	a3, a4, b2, b3, c4, d1, d3, d4	Lectures and practical training, case study, brain storming	Written, practical and oral exams	
Week # 12	Pharmacological actions of drugs acting on cardiovascular system(cont.)	a3, a4, b2, b3, c4, d1, d3, d4	Lectures and practical training, case study	Written, practical and oral exams	
Week # 13	Pharmacological actions of drugs acting on cardiovascular system (cont.)	a3, a4, b2, b3, c4, d1, d3, d4	Lectures and practical training, case study	Written, practical and oral exams	
Week # 14	Pharmacoloical actions of drugs acting on kidney	a5 , b4, c4, d2, d3.	Lectures, brain storming	Written and oral exams	
Week # 15	Pharmacoloical actions of drugs acting on kidney (cont.)	a5, b4, c4, d2, d3.	Lectures	Written and oral exams	

Course coordinator: Dr. Sherin Zakaria **Head of department:** Dr. Sherin Zakaria

Bachelor in Pharmacy
(Clinical pharmacy)

Course Specification
2020-2021

Fourth Level / Semester (7)

# Kafrelshiekh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in pharmacy (clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Clinical pharmacy
Department supervising the course	Clinical pharmacy
Academic Year / Level	Fourth level, semester 7
Date of specification approval	9/2020

#### **A- Basic Information**

Title: hospital pharmacy	Code: PP703
<b>Total Credit Hours :3</b>	Lecture :2
Tutorial:	Practical: (1 credit hour)

#### **B- Professional Information**

#### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to **Understand**:

- the concepts and structure of a hospital and hospital pharmacy department, information about I.V. admix*tures, pharmacy and therapeutic* committee and manufacturing units in hospitals, hospital formulary, radio-pharmaceuticals and nuclear pharmacy, skills in receiving and classifying a request in a logical order, obtaining additional information from the inquirer in a professional and tactful manner, and determining actual needs of the inquirer, in-patients, outpatients and ambulatory patients with respect to filling prescriptions, counseling and rational patient-oriented drug use. *Identify* surgical dressing and sutures, plasma substitute, central sterile supply unit and its management, manufacture of sterile and non-sterile products.

# 2. Intended learning outcomes of the course (ILOs)

# a- Knowledge and understanding:

On successful completion of the course, the students should be able to:

- a1. Describe the fundamental aspects of hospital pharmacy service.
- a2. Define the basis of IV admixture and sterile product preparation.
- a3. Identify the rule of pharmacy and therapeutic committee and drug formulary

a4. Demonstrate how to handle cytotoxic drugs and radioisotops.
 of medicine and patient information and reporting of adverse reactions to medicines.

#### **b- Intellectual skills**

- b1- interpret a systematic procdure for managing cytotoxic and radioisotop medications.
- b2- Select various types of rounds with the rest of health care team.
- b3- interpretipatient profile and medication histories for in-patients and out-patients.
- b4-. analyze and solve problems with respect to drug compatibilities and IV admixtures..

### c- Professional and practical skills

- c1. demonstrate and design the most appropriate form of drug formulary and essential drug list.
- c2. assess separation of narcotic and controlled drugs from other drugs.
- c3- analyze the rationale and patient-oriented drug use.

### d- General and transferable skills

- d1-evaluate information from a variety of sources, including libraries, databases and internet.
- d2- assess independently or as a part of medical team in different hospital settings.
- d3- Demonstrate creativity and time management skills.
- d4- Implement presentation, writing reports and interviewing skills.

#### 3. Contents

Week	Topic	Total credit	Lecture	Practical
		hours		
1	Responsibilities of	3	2	1
	hospital staff			
2	Hospital and its	3	2	1
	organization			
3	Pharmacy and	3	2	1
	therapeutic			
	committee			
4	Hospital formulary	3	2	1
5	In-patient pharmacy	3	2	1
6	Out-patient	3	2	1

	pharmacy			
7	Midterm Exam			
8	Iv admixture	3	2	1
9	Handling of	3	2	1
	Cytotoxic Drugs			
10	Handling of	3	2	1
	Cytotoxic Drugs			
11	Pharmacist and	3	2	1
	radioisotopes			
12	Drug	3	2	1
	incompatibility			
13	Bed round of the	3	2	1
	clinical pharmacist			
14	Revision	2	2	Practical
				exam
15	Final Exam	2	2	Practical
				exam

# 4. Teaching and learning methods

a. Lectures	(√)
b. practical	$(\sqrt{})$
c. Case study	$(\sqrt{})$
d. Class Activity (discussion, brain storm)	( √)
e. E-learning	( √)
f. smart board	()

# 5. Student assessment methods

Written periodical	To assess	The ability of students to follow-up
exam		the course subjects.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.
Practical exam	To assess	The gained experience in case
		management.
Written final exam	To assess	The overall outcomes.

# **Assessment schedule**

Assessment 1	Periodical exam	Week	7
<b>Assessment 2</b>	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

# Weighting or assessments Marks/%

Periodical Examination	10	%
1 ci iodicai Examination	10	/0

Final-Term Examination	50	%
Oral Examination	15	%
<b>Practical Examination</b>	25	%
Total	100	%
	marks	
	(%)	

### 6. List of references

Course notes

Hospital pharmacy notes for fourth level

Practical hospital pharmacy notes for fourth level

Essential books (text books)

- 1-A Pathophysiologic Approach (2019). Dipiro JT. McGraw-Hill (Ed).11<sup>th</sup> edition
- 2-Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th Edition
- 3- Applied Therapeutics, The clinical Use of Drugs(2017) Koda-Kimble MA(  $11^{\rm Ed}$ ).
- -4Hospital pharmacy 2<sup>nd</sup> edition, ed. Martin Stephens

#### Websites

www.pubmed.com www.medscape.com www.Guidelines.org

# 7. Facilities required for teaching and learning

- -Class rooms.
- -Library.
- Datashows.
  - E-learningSmart boards
- -Computers. -Internet.

### **Course coordinator:**

Dr. Ahmed Amin

**Head of Department:** 

Prof. Dr. Abdelaziz Elashmawy

Date: 9/2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: hospital pharmacy Course code: PP703

Course ti	se title: hospital pharmacy Course code: PP			e: PP703
C	ourse content	ILOs	Teaching and Student Learning Assessmen Methods Methods	
Week#1	Responsibilities	a1, a3, b2, b3,	Lectures and class	Written, practicial and
	of hospital staff	b4	activity (discussion, brain storm)	oral exams
Week #	Hospital and its	4	Lectures and class activity (discussion,	Written, practicial and oral exams
2	organization	a1	brain storm)	oral exams
Week # 3	Pharmacy and		Lectures and practical (case	Written, practicial and oral exams
3	therapeutic	a3	study) , class	
	committee		activity (discussion, brain storm)	
Week #	Hospital		Lectures and	Written, practicial and
4	formulary	a3, c1	practical (case study) , class	oral exams
	Torritarary	,	activity (discussion, brain storm	
Week #	In-patient		Lectures and practical (case	Written, practicial and oral exams
5	pharmacy	b2, b3, c3	study) , class	oral exams
	1 3		activity (discussion, brain storm	
Week # 6	Out-patient		Lectures and practical (case	Written, practicial and oral exams
	pharmacy	<b>b2</b> , <b>b3</b>	study), class activity (discussion,	
Week #			brain storm Lectures and	Writton practicial and
7	Midterm Exam		practical (case	Written, practicial and oral exams
			study) , class activity (discussion,	
Week #	Iv admixture		brain storm Lectures and	Written, practicial and
8	iv admixture	a1, a3, b2, b3,	practical (case study) , class	oral exams
		<b>b4</b>	activity (discussion,	
Week #	Handling of		brain storm Lectures and	Written, practicial and
9	Cytotoxic	a1	practical (case study) , class	oral exams
	Drugs	aı	activity (discussion, brain storm	
Week #			Lectures and	Written, practicial and
10	Handling of	<b>.2</b>	practical (case study), class	oral exams
	Cytotoxic	<b>a3</b>	activity (discussion, brain storm	
Week #	Drugs		Lectures and	Written, practicial and
11	Pharmacist and	o.2 o.1	practical (case	oral exams
	radioisotopes	a3, c1	study) , class activity (discussion,	
Week #	Dena		brain storm Lectures and	Written, practicial and
12	Drug	b2, b3, c3	practical (case study), class	oral exams
	incompatibility	<i>112</i> , 113, C3	activity (discussion, brain storm	
Week #	Bed round of		Lectures and	Written, practicial and
13	the clinical	b2, b3	practical (case study) , class	oral exams
	pharmacist	N2, NJ	activity (discussion, brain storm	
Week #			Lectures and class	Written, practicial and
14	Responsibilities		activity (discussion, brain storm	oral exams
Week #	of hospital staff	-1 -2 L2 L2	Lectures and class	Written, practicial and
JI COIL IF	Hospital and its	a1, a3, b2, b3,	activity (discussion,	oral exams

15	organization	h4	brain storm	
	or Samme action	₽.		

# **Course coordinator:**

Dr. Ahmed Amin

# **Head of Department:**

Prof. Dr. Abdelaziz Elashmawy

Date: 9/2020

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy(Clinical
	Pharmacy
Major or minor element of program	Major
Department offering the course	Microbiology and Immunology
Department supervising the course	Microbiology and Immunology
Academic Year / Level	Fourth level/ Semester 7
Date of specification approval	September 2020

### **A- Basic information:**

Title: Clinical Microbiology	Code : PM 502
Credit Hours :3	Lecture :2
Tutorial :	Practical :1

### **B- Professional information:**

### 1-Overall Aims of the Course:

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

- the complex interaction between microorganism and the human host ;including outcome of infection.
- microbial infection process including virulence factors,pathogenisis, clinical pictures for different microbial dieases.
- different diagnostic procedures, treatment of different microbial infections including bacterial and fungal infection.
- Cellular processes involved in the interactions between viruses and their host and pathogenesis, diagnosis, and treatment & how to prevent important human viral infections.

# 2. Intended Learning Outcomes (ILOs):

# a- Knowledge and understanding:

On successful completion of the course, the student should be able to:

- a1. Define the terms of infection , pathogen , commensal, opportunistic infection and nosocomial infection .
- a.2 Know the clinical symptoms and treatment of different microbial diseases
- a3. Know the virulence factors and pathogenisis of different microbial diseases

• a4.Discuss diseases caused by diffrenet types of viruses.

#### **b-** Intellectual skills

- b1. Recognize the clinical symptoms of microbial infections.
- b2. Predict the mechanism of different microbial diseases.
- b3. predict treatment of different microbial infections.
- b4. Utilize specific preventive and control measures to prevent infections spread in the community.

### c- Professional and practical skills

- c1. Use effectively clinical samples in aseptic way.
- c2. Use microbiological laboratory tests in order to isolate and identify different pathogens in some clinical sample.
- c3. Demonestrate the different techniques for diagnosis of different microbial diseases

### d- General and transferable skills

- d1.Communicate effectively with the medical stuff in different hospital setting
- d2. Demonstrate in writing and orally for analysis of specialized or general issue of microbial infection.

#### 3. Contents

Week	Topic	credit	Lecture	Practical
		hours		
1	Introduction to microbial infection	3	2	1
2	Bacteriology- Gram positive	3	2	1
	cocci			
3	Gram positive cocci	3	2	1
4	Gram positive bacilli	3	2	1
5	Gram negative cocci	3	2	1
6	Mycobacterium group	3	2	1
7	Periodecal exam			
8	Gram negative bacilli	3	2	1
9	Gram negative bacilli (cont.)	3	2	1
10	Gram negative bacilli (cont.)	3	2	1
11	Chylamydiae,Rickettsiae	3	2	1
12	Mycology	3	2	1
13	DNA viruses	3	2	1
14	RNA viruses	2	2	Practical
				exam
15	RNA viruses	2	2	Practical
				exam

# 4. Teaching and learning methods

a. Lectures

 $(\checkmark)$ 

b. Practical training / laboratory

 $(\sqrt{})$ 

c. presintation	<b>(</b> √ )
d. brain storming	()
e. Discussion	()
f. E-learning	$(\sqrt{})$

### 5. Student assessment methods

periodical exam	To assess	The ability of students to follow-up
		The course subjects.
Practical exam	To assess	The gained experience in laboratory
		methods and techniques.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.
Written final exam	To assess	The overall outcomes.

### **Assessment schedule**

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

# Weighting or assessments

Periodical Examination	10	%
Final-Term Examination	50	%
Oral Examination	15	%
<b>Practical Examination</b>	25	%
Semester Work		%
Other types of assessment		%
Total	100	%

#### 6. List of references

Course notes

Notes and lab manual of clinical Microbiology prepared by department staff members

Essential books (text books)

- Brown, A. E. (2005) Benson's Applications. Laboratory Manual Microbiology. 9th edn. McGraw-Hill: Boston.
  - Jawetz Melnick & Adelbergs Medical Microbiology 27 E (Lange)
     27th Edition
  - Bailey & Scott's Diagnostic Microbiology 14th Edition

#### Websites

http://bcs.whfreeman.com/immunology6e/default.asp

www.sciencedirect.com

www.ekb.eg

# 7. Facilities required for teaching and learning

- -Class rooms.
- -Laboratory facilities (autocalve, incubator, oven, laminar flow).
- -Library.
- Data show

-Computers.	-Internet.	
Course coordinator:		
Dr. Hany Kenawy		
Head of Department:		
Professor Dr. Ramadan Ahmed Aldo	omany	

Date: 9 /2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Clinical Microbiology Course code: PM 502

Course	title: Clinical Microbiology		code: PIVI 5U	
	Course Contents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction to microbial infection	a1	Lectures and practical	Written, practical and oral exams
Week # 2	Bacteriology- Gram positive cocci	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures and practical	Written, practical and oral exams
Week # 3	Gram positive cocci	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures and practical	Written, practical and oral exams
Week # 4	Gram positive bacilli	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 5	Gram negative cocci	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 6	Mycobacterium group	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 7	Periodecal exam			
Week # 8	Gram negative bacilli	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 9	Gram negative bacilli (cont.)	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 10	Gram negative bacilli (cont.)	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 11	Chylamydiae,Rickettsiae	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 12	Mycology	a2,a3,b1,b2,b3 ,b4,c1,c2,c3,d1 ,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 13	DNA viruses	a2,a3,b1,b2,b3 ,b4,c3,d1,d2	Lectures ,practical,brai n storming, discussion and presentation	Written, practical and oral exams
Week # 14	RNA viruses	a2,a3,b1,b2,b3 ,b4,c3,d1,d2	Lectures , brain storming,	Written and oral exams

			discussion and presentation	
Week # 15	RNA viruses	a2,a3,b1,b2,b3 ,b4,c3,d1,d2	Lectures,brai n storming, discussion and presentation	Written and oral exams

### **Course coordinator:**

Dr. Hany Kenawy	
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**Head of department: Professor Dr.** Ramadan Ahmed Aldomany

# Kafrelsheikh University, Faculty of Pharmacy

# **Course Specifications**

<b>Programme on which the course is given</b>	Bachelor in Pharmacy
	(Clinical Pharmacy)
Major or minor element of programme	Major
Department offering the course	Microbiology & Immunology
Department supervising the course	Microbiology & immunology
Academic Year / Level	fourth level, second 7
Date of specification approval	9/2020

#### **A- Basic Information**

Title: Pharmaceutical	Code: PM703
Biotechnology	
Credit Hours :3	Lecture :2
Tutorial:	Practical:1

### **B- Professional Information**

### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to understand:

The basic knowledge about biotechnology ,microbial optimization , tissue culture and genetic engineering in addition to production of various pharmaceuticals through biotechnology and how to carry out QC of biotech produced products and the basis of gene therapy

# 2. Intended learning outcomes of the course (ILOs)

# a- Knowledge and understanding:

On successful completion of the course, the student should be able to:

- **a.1.** Know the theories of molecular biology and genetic engineering
- **a.2.** Define the techniques used in biotechnology ...
- **a.3.** Understand bases of biotechnology in the industrial sector.
- **a.4** Define the methods available for quality control of biotech produced product.
- **a.5** Define the gene therapy.

#### **b- Intellectual skills**

**b.1.** Predict the optimum conditions of production of pharmaceuticals through

#### biotechnology

- **b.2.** Demonstrate creativity in the identification of industrial production problems and their solutions.
- **b.3.** Analyze and interpret biological data.
- **b.4.** Predict the methods used for QC of biotech produced products.
- **b.5** Demonstrate the gene therapy.

## c- Professional and practical skills

- **c.1.** Assess fermentation operating parameters.
- **c.2.** Demonstrate methods of antibiotics, hormons, vaccines production
- **c.3**. Demonstrate different production techniques of monoclonal antibodies.
- **c.4**. assess the methods of microbial bioconversion.

### d- General and transferable skills

- d. 1. Work effectively in multidisciplinary teams to achieve objectives.
- d. 2. Demonstrate appropriate communication tools to disseminate information to a variety of audiences.
- d.3 demonstrate the biotech products.

### 3. Contents

Week	Topic	Credit hours	Lecture	practical
1	Introduction to biotechnology	3	2	1
2	Genetic engineering	3	2	1
3	Tissue culture	3	2	1
4	Microbial growth and optimization conditions	3	2	1
5	Antibiotics production	3	2	1
6	Production of hormons	3	2	1
7	Periodical exam			
8	Production of vaccines	3	2	1
9	Production of enzymes	3		1
10	Applications of Monoclonal antibodies	3	2	1

	in pharmaceutical market			
11	Applications of Monoclonal antibodies in pharmaceutical market ( continue)	3	2	1
12	Gene therapy	3	2	1
13	Gene therapy (continue)	3	2	1
14	Quality control of biological products as vaccines, antibodies,	2	2	Practical exam
15	Quality control of biological products as vaccines, antibodies, (continue)	2	2	Practical exam

# 4. Teaching and learning methods

a. Lectures  $(\sqrt{\phantom{a}})$ b. Practical training / laboratory  $(\sqrt{\phantom{a}})$ c. E-Learning  $(\sqrt{\phantom{a}})$ 

### 5. Student assessment methods

periodical exam	To assess	The ability of students to follow-up	
		The course subjects.	
Practical exam	To assess	The gained experience in laboratory	
		methods and techniques.	
Oral exam	To assess	The ability of students in expressing	
		and presenting their knowledge	
		clearly and in systematic approach.	
Written final exam	To assess	The overall outcomes.	

# **Assessment schedule**

Assessment 1	periodical exam	Week	7
<b>Assessment 2</b>	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

# Weighting or assessments

Periodical Examination	10	%
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Final-Term Examination	50	%
Oral Examination	15	%
<b>Practical Examination</b>	25	%
Semester Work		<b>%</b>
Other types of assessment		%
Total	100	<b>%</b>

## 6. List of references

Course notes

Essential books (text books)

- Brock-Biology of Microorganisms (Madigan, Martinko and Parker, 2003)

#### Recommended books

- Pharmaceutical Biotechnology. Crommelin, D.J.A. (et al.) (Eds.) (2019)
- Advances in Pharmaceutical Biotechnology. Patra, J.K. (et al.) (Eds.) (2020)0

Websites

### http://www.pubmed.com

# 7. Facilities required for teaching and learning

- 1. Personal Computer (available for each staff member).
- 2. Power Point Displayer (Data-Show); available for the usual lectures and Labs.
- 3. Lecture Halls.
- 4. Computer Hall with enough devices and internet connection.
- **5.** Meeting rooms for office hours.

### **Course coordinator:**

Dr. Mohamed Asad

# **Head of Department:**

**Professor Dr.** Ramadan Ahmed Aldomany

Date: 9 /2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Pharmaceutical biotechnology Course code: PM703

	Course title: Pharmaceutical biotechnology Course code: PM703				
Co	urse Contents	ILOs	Teaching and	Student	
			Learning Methods	Assessment Methods	
Week	Introduction to	a1	Lectures ,	Written and	
# 1	biotechnology		practical	oral exams	
	oroteennology				
Week	Genetic	a1,d2	Lectures ,	Written and	
# 2			practical	oral exams	
Week	engineering Tissue culture	a2,b1,c4,d1,d2,d3	Lectures ,	Written and	
# 3	Tissue culture		practical	oral exams	
Week # 4	Microbial	a3,b1,b3	Lectures , practical	Written and oral exams	
# <b>-</b>	growth and		practical	oral exams	
	optimization				
	conditions				
Week	Antibiotics	a3,b2,b3,c1,c2,d2,d3	Lectures ,	Writtel and	
# 5	production		practical	oral exams	
	Production				
Week	Production of	a3,b2,b3,c1,c2,d2,d3	Lectures ,	Written and	
# 6	hormons	, , , , , , , , , , , , , , , , , , , ,	practical	oral exams	
	normons				
Week	Semester				
# 7					
Week	works	23 h2 h3 c1 c2 d2 d2	Loctures	Written and	
# 8	Production of	a3,b2,b3,c1,c2,d2,d3	Lectures , practical	oral exams	
	vaccines				
14/		-2 52 52 -1 -2 42 42	Lastrona	Multipu	
Week # 9	Production of	a3,b2,b3,c1,c2,d2,d3	Lectures , practical	Written and oral exams	
" •	enzymes		F. 200.00.		
34/		-2 -2 -2 -2 -2 -4 -12	Lastrona	Multipu	
Week # 10	Applications of	a2,a3,b2,b3,c3,d1,d2	Lectures , practical	Written and oral exams	
	Monoclonal		p. 200.001	3. a. a.a.ma	
	antibodies in				
	pharmaceutical				
	market				
Week # 11	Applications of	a2,a3,b2,b3,c3,d1,d2	Lectures , practical	Written and oral exams	
# <b>11</b>	Monoclonal		practical	oral Callis	
	antibodies in				
	pharmaceutical				
	market (				
	continue)				
Week # 12	Gene therapy	a5,b5,c4,d3	Lectures , practical	Written and	
# 12			ргасисаг	oral exams	
Week	Gene therapy	a5,b5,c4,d3	Lectures ,	Written and	
# 13	(continue)		practical	oral exams	
	,				
Week	Quality control	a4,b4,c4,d1	Lectures	Written and	
# 14	of biological			oral exams	
		1	L	l	

	products as vaccines, antibodies,			
Week # 15	Quality control of biological products as vaccines , antibodies, ( continue)	a4,b4,c4,d1	Lectures	Written and oral exams

Course coordinator: **Dr.** Mohamed Asad

**Head of department: Professor Dr.** Ramadan Ahmed Aldomany

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy (Clinical
	pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmaceutical Technology
Department supervising the course	
Academic Year / Level	Fourth level/ Semester 7
Date of specification approval	9/2020

## **A- Basic information:**

Title: Controlled Drug Delivery	Code: PT 704
Credit Hours: 2	Lecture: 2
Tutorial :	Practical :

# **B- Professional information:**

### 1. Overall aims of course:

Upon successful completion of this course, the students should be able to:

 Know the principles and types of controlled release and to have a good knowledge on the most common mechanisms in rate controlled release pharmaceutical products.

# 2. Intended learning outcomes of course (ILOs)

# a- Knowledge and understanding:

On successful completion of the course, the graduate should be able to efficiently demonstrate the essential knowledge and understanding of:

- a1- Describe basics and concepts of controlled drug delivery systems.
- a2- Explain the types of controlled release dosage forms, advantages and limitation for each system.
- a3- Discuss diffusion and dissolution of controlled drug delivery systems.
- a4- Outline colloidal dispersion systems.

### **b- Intellectual skills**

b1-Illustrate the different types of controlled release products

# c- Professional and practical skills

c1-Analyze novel problems and plan strategies for their solution

### d- General and transferable skills

- d1-Communicate clearly by verbal and written means
- d2- Retrieve and evaluate information in the field of pharmaceutical formulation.
- d3-Demonstrate critical thinking, problem solving, decision making abilities, leadership and team working abilities.
- d4-Evaluate different controlled release systems.

### 3. Contents

Week	Topic	Total credit hours	Lecture	Practical (credit hours)
1	Introduction of Controlled drug delivery systems.	2	2	
2	Mechanisms used in rate controlled pharmaceutical products	2	2	
3	Reservoir devices, matrix devices.	2	2	
4	Diffusion controlled implants, Transdermal patches.	2	2	
5	Encapsulated and matrix dissolution systems.	2	2	
6	Osmotic, mechanical systems.	2	2	
7	Periodical exam.			
8	Swelling, erosion controlled systems.	2	2	
9	Parenteral controlled release systems.	2	2	
10	Quality control for controlled release products.	2	2	
11	Colloidal dispersion systems.	2	2	
12	Delivery systems for targeting specific sites.	2	2	
13	Pharmacist monitoring role for patients use controlled	2	2	

	release dosage form.			
14	Pharmacist monitoring role for patients use controlled release dosage form.	2	2	
15	Revision and open discussion	2	2	

# 4. Teaching and learning methods

a. Lectures	(√)
b. Class Activity	(√ )
e. E-learning	(√)
f. Smart board	(√)

### 5. Student assessment methods

Written periodical	To assess	The ability of students to follow-up
exam		the course subjects.
Written final exam	To assess	The overall outcomes.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.

# **Assessment schedule**

Assessment 1	periodical exam	Week	7
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

# Weighting or assessments

Periodical Examination	10	%
Final-Term Examination	75	%
Oral Examination	15	%
Total	100	%

### 6. List of references

Course notes

Notes and lab manual prepared by the department staff.

Essential books (text books)

Hand book of pharmaceutical controlled release technology.

#### Recommended books

- 1. Aulton's The Science Of Dosage Form Design
- 2. Ansel. Pharmaceutical dosage forms and drug delivery systems.
- 3. Remington the science and practice of pharmacy
- 4. International journal of drug delivery

#### Websites

www.pubmed.com			
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www.sciencedirect.com

# 7. Facilities required for teaching and learning

- Class rooms.
- Computers. Internet.
- Data show.
  - Library.

## **Course coordinator:**

Dr. Mohamed Fathy

# **Head of Department:**

Prof. Dr. AbdelAziz El-Said

**Date:** 9/2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: controlled drug delivery system

Course code: PT704

	Course Contents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction of Controlled drug delivery systems.	a1,d1	Lectures and class activity	Written and oral exams
Week # 2	Mechanisms used in controlled rate pharmaceutical products	a1,d1,d2	Lectures and class activity	Written and oral exams
Week # 3	Reservoir devices, matrix devices.	a1,a2,b1,d3	Lectures and class activity	Written and oral exams
Week # 4	Diffusion controlled implants, Transdermal patches.	a2,a3,b1,d3	Lectures and class activity	Written and oral exams
Week # 5	Encapsulated and matrix dissolution systems.	a1,a2,b1,a3	Lectures and seminar.	Written and oral exams
Week # 6	Osmotic, mechanical systems.	a1,a2,a3,b1	Lectures	Written and oral exams
Week # 7	Periodical exam.			Written and oral exams
Week # 8	Swelling, erosion controlled systems.	a2,a3,b1,d1 ,d2,d3	Lectures and class activity	Written and oral exams
Week # 9	Parenteral controlled release systems.	a1,a2,b1,d3,d4	Lectures and class activity	Written and oral exams
Week # 10	Quality control for controlled release products.	a1,a2,b1,c1 ,d1,d2	Lectures and class activity	Written and oral exams
Week # 11	Colloidal dispersion systems.	a1,a4,d1,d2	Lectures and class activity	Written and oral exams
Week # 12	Delivery systems for targeting specific sites.	a1,a2,b1,c1,d3	Lectures and class activity	Written and oral exams
Week # 13	Pharmacist monitoring role for patients use controlled release dosage form.	a1,a2,c1,d3	Lectures and class activity	Written and oral exams
Week # 14	Pharmacist monitoring role for patients use controlled release dosage form.	a1,a2,b1, c1,d3	Lectures	Written and oral exams
Week # 15	Revision and open discussion	a1,a2,a3,a4, b1,c1,d3	Lectures	Written and oral exams

### **Course coordinator:**

Dr. Mohamed Fathy

Head of Department:

Prof. Dr. Ramadan Eldomany

**Date:** 9/2020

# Kafrelsheikh University, Faculty of Pharmacy

### **Course Specifications**

Programme on which the course is	Bachelor in Pharmacy(Clinical
given	Pharmacy
Major or minor element of programme	Major
Department offering the course	Microbiology and Immunology
<b>Department supervising the course</b>	Microbiology and Immunology
Academic Year / Level	Fourth level/ Semester 7
Date of specification approval	September 2020

### **A- Basic Information**

Title: Public health and preventive	Code: MD710
medicine	
Credit Hours :2	Lecture :2
Tutorial:	Practical :

#### **B- Professional Information**

#### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to understand:

- the basic information about epidemiology, etiology, risk factors, risk groups, control and prevention
- the basic information about promoting, maintaining health and preventing disease

# 2. Intended learning outcomes of the course (ILOs)

# a- Knowledge and understanding:

On successful completion of the course, the student should be able to :

- a1. Discuss the basic principles of public health.
- a2. Define the sources of infection and sanitation .
- a3. Describe the body function in health and disease condition

#### **b- Intellectual skills**

- b1. Develop appropriate methods for infection control.
- b2. Promote public health awareness.

# c- Professional and practical skills

- c1. Handle and dispose hazardous chemicals, biological and pharmaceutical preparations safely.
- c2. Monitor and control microbial infections.
- c3. Carry out laboratory tests for diagnosis of various diseases...

# d- General and transferable skills

- d1. Interact effectively in team work.
  d2. Present information clearly in written , electronic and oral forms.

# 3. Contents

Week	Topic	credite	Lecture	Practical
	•	hours		
1	Introduction ,	2	2	
	epidemiologic .			
	characteristtics of			
	infectious diseases			
	and outbreak			
	epidemiology			
2	The dynamics of	2	2	
	infection and the cycle			
	of infection			
3	Preventive and control	2	2	
	of communicable			
	diseases			
4	Non communicable	2	2	
	health problems			
5	(continue)Non	2	2	
	communicable health			
	problems		_	
6	Ocupitional diseases	2	2	
7	Periodical exam			
8	Nosocomial infection	2	2	
9	Airborne diseases	2	2	
10	Food, water and milk	2	2	
	borne diseases			
11	Food, water and milk	2	2	
	borne diseases			
12	Diseases transmitted	2	2	
	primarily from animals			
	to humans and			
	arthropods borne			
	diseases			
13	( continue) Diseases	2	2	
	transmitted primarily			
	from animals to humans			
	and arthropods borne			
	diseases			
14		2	2	
14	Nutrition and family	4	4	

	health			
15	Revision and open	2	2	
	discussion			

# 4. Teaching and learning methods

 $(\sqrt{})$ a. Lectures b. E-Learning  $(\sqrt{\phantom{a}})$ 

### 5. Student assessment methods

Periodical exam	To assess	The ability of students to follow-up
		the course subjects.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.
Written final exam	To assess	The overall outcomes.

### **Assessment schedule**

Assessment 1	Mid-term exam	Week	7
<b>Assessment 2</b>	Final exam	Week	16,17
Assessment 3	Oral	Week	16,17

# Weighting or assessments

Periodical Examination	10	%
Final-Term Examination	75	%
Oral Examination	15	%
Practical Examination		%
Semester Work		%
Other types of assessment		%
Total	100	<b>%</b>

### 6. List of references

Course notes

Notes on Public health

Essential books (text books)

- -Black, J.G.2004, Microbiology principles and applications(6<sup>th</sup> edition)
- -Cedric A. Mims, 2004, medical microbiology.

#### Recommended books

-Gwendolyn R.W.; Burton, Paul G.; Engerl Kirk, Microbiology for the health sciences (11th edition)

Websites

-http://www.cpublichealth.co.nz/ -http://www.amsa.org/cph/

# 7. Facilities required for teaching and learning

-Class rooms.

- -Library.
- Data show (Overhead, video projector)

-Computers. –Internet.

Course coordinator: Prof Dr: Mohamed Emara

**Head of Department:** Prof Dr: Ramadan Ahmed Aldomany

Date: 9/2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Public health and preventive medicine Code: MD710

Course	e uue. Public nealth an	u preventive ineutcine	,	: MD/IO
	Course Contents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction , epidemiologic characteristtics of infectious diseases and outbreak epidemiology	A1,a2,c1,d2	Lectures	Written and oral exams
Week # 2	The dynamics of infection and the cycle of infection	A1,a2,b1,c1,d2	Lectures	Written and oral exams
Week # 3	Preventive and control of communicable diseases	A1,a2,a3,b2,c1,d2	Lectures	Written and oral exams
Week # 4	Non communicable health problems	A1,a2,a3,b1,b2,c2,d2	Lectures	Written and oral exams
Week # 5	(continue)Non communicable health problems	A1,a2,a3,b1,b2,c2,d2	Lectures	Written and oral exams
Week # 6	Ocupitional diseases	A1,a2,a3,b1,b2,c2,d2	Lectures	Written and oral exams
Week # 7	Periodical exam			
Week # 8	Nosocomial infection	A1,a2,a3,b1,b2,c1,c2,d2	Lectures	Written and oral exams
Week # 9	Airborne diseases	A1,a2,a3,b1,b2,c1,c2,c3,d2	Lectures	Written and oral exams
Week # 10	Food, water and milk borne diseases	A1,a2,a3,b1,b2,c1,c2,c3,d2	Lectures	Written and oral exams
Week # 11	Food, water and milk borne diseases	A1,a2,a3,b1,b2,c1,c2,c3,d2	Lectures	Written and oral exams
Week # 12	Diseases transmitted primarily from animals to humans and arthropods borne diseases	A1,a2,a3,b1,b2,c1,c2,d2	Lectures	Written and oral exams
Week # 13	( continue) Diseases transmitted primarily from animals to humans and arthropods borne diseases	A1,a2,a3,b1,b2,c1,c2,d2	Lectures	Written and oral exams
Week	Nutrition and family	A1,a2,a3,b1,b2,c2,d1,d2	Lectures	Written and

# 14	health			oral exams
Week # 15	Revision and open discussion	A1,a2,a3,b1,b2,d1,d2	Lectures	Written and oral exams

**Course coordinator:** Dr: Mohamed Emara

Head of department: Prof Dr: Ramadan Ahmed Aldomany

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Programme on which the course is given	Bachelor in Pharmacy (Clinical
	Pharmacy)
Major or minor element of programme	Major
<b>Department offering the course</b>	Pharmaceutical chemistry
Department supervising the course	
Academic Year / Level	Third Level, semester (6)
Date of specification approval	9/2020

### **A- Basic Information**

<b>Title: Medicinal Chemistry (1)</b>	Code: PC609
Credit Hours: 3	Lecture: 2
<b>Tutorial:</b>	Practical :1

### **B- Professional Information**

#### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to understand:

- The fundamentals of medicinal chemistry.
- The chemistry of different classes of chemotherapeutic Agents, antiviral drugs and cancer chemotherapy.
- SAR (Structure-activity relationship) of different classes of drugs.
- IUPAC rules for naming different drugs.
- Analysis of drugs in different dosage forms using pharmacopeial methods of assay.

# 2. Intended learning outcomes of the course (ILOs)

# a- Knowledge and understanding:

On successful completion of the course, the graduate should be able to:

- a1. Discuss the concept of medicinal chemistry.
- a2. Describe the SAR of different drug classes.
- a3. Know the nomenclature and classfication of Drugs.
- a4. Learn uses of different drug classes
- a5. Demonstrate different synthetic pathways.
- a6. Explain the mode of action of mentioned drugs.

#### **b- Intellectual skills**

- b1. Utilize SAR to interpret the pharmacological activity of certain drugs.
- b2. Recognize IUPAC names and structural formula of drugs.
- b3. Recognize the generic names of drugs and deduce the

- therapeutic utility for each class.
- b4. Assess the structural feature of a compound to physicochemical properties which may affect its biological response or influence its formulation / administration.

# c- Professional and practical skills

- c1. Assess qualitative and quantitative methodology of analysis of drugs.
- c2. Use effectively basic laboratory equipment and chemicals.
- c3. Test impurities of active substances in samples.

### d- General and transferable skills

- d1. Retrieve information from variety of sources.
- d2. Work effectively in a team.
- d3. Create reports and present it.
- d4. Estimate the chemical characters and SAR of drug through its chemical structure.

### 3. Contents

Week	Topic	Total credit hours	Lecture	Practical
1	Introduction to Pharmaceutical Chemistry	3	2	1
2	Physicochemical properties of drugs in relation to biological action	3	2	1
3	Cancer Chemotherapy	3	2	1
4	Cancer Chemotherapy	3	2	1
5	Cancer Chemotherapy	3	2	1
6	Cancer Chemotherapy	3	2	1
7	Mid-term exam			
8	Cancer Chemotherapy	3	2	1
9	Chemotherapeutic Agents-Antimicorbial	3	2	1
10	Chemotherapeutic Agents-Antimicorbial (cont.)	3	2	1
11	Chemotherapeutic Agents-Antimicorbial (cont.)	3	2	1
12	Chemotherapeutic	3	2	1

	Agents-Antimicorbial			
	(cont.)			
	Chemotherapeutic			
13	Agents-Antimicorbial	3	2	1
	(cont.)			
14	Chemotherapeutic	2	2	Practical
14	Agents-Antiviral	<u> </u>	<u> </u>	exam
15	Chemotherapeutic	2	2	Practical
15	Agents-Antiprotozoal	<u> </u>	<u>Z</u>	exam

# 4. Teaching and learning methods

a. Lectures	( √ )
b. Practical training / laboratory	$(\sqrt{})$
c. Class activity	(√)
d. E-learning	(√)
e. Smart board	(√)

## 5. Student assessment methods

Written periodical	To assess	The ability of students to follow-up
exam		The course subjects.
Practical exam	To assess	The gained experience in laboratory methods and techniques.
Written final exam	To assess	The overall outcomes`
Oral exam	To assess	The ability of students in expressing and presenting their knowledge clearly and in systematic approach

# **Assessment schedule**

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14, 15
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	16, 17

# Weighting or assessments

Written periodical Examination	10	%
Practical Examination	25	%
Final Term Examination	50	%
Oral Examination	15	%
Other types of assessment		%
Total	100	%

# 6. List of references

Course notes

Notes on pharmaceutical chemistry prepared and distributed by Dept. of Pharmaceutical Chemistry.

 Lab Manual of pharmaceutical chemistry prepared and distributed by Dept. of Pharmaceutical Chemistry.

#### Essential books (text books)

- 1) William O. Foye, "Principle of Medicinal Chemistry" 7<sup>th</sup> edition (2012), Williams & Wilkins, London.
- 2) Wilson and Gisvold's "Textbook of Organic and Pharmaceutical Chemistry", 12th Ed., Jaime N. Delgado, J.B. Lippincot Co., 2010.
- 3) William O. Foye, "Principle of Medicinal Chemistry" 5<sup>th</sup> edition (2002), Williams & Wilkins, London.
- 4) M.E.Wolff Burger's "Medicinal Chemistry and Drug Discovery ", 7th edition (2010), Wiley-interscience Publication, New York, USA.
- 5) Gennaro (Éditor), "Remington's Pharmaceutical Sciences", 21th edition (2005), Lippincott Williams & Wilkins, Maryland, USA.

#### Recommended books

Wilson and Gisvold's "Textbook of Organic and Pharmaceutical Chemistry", 12<sup>th</sup> Ed., Jaime N. Delgado, J.B. Lippincot Co., 2010.

#### Websites

www.fda.gov , www.mohp.gov , www.emea.org , www.who.int , www.wikipedia.org .

### 7. Facilities required for teaching and learning

- E-learning and smart board.
- -Class rooms.
- -Laboratory facilities.
- Data show
- Computers.
- -Library.
- -Internet.
- Spectrophotometers

#### **Course coordinator:**

**Dr. Tamer Mohamed Ibrahim** 

### **Head of Department:**

#### **Prof.Dr. Ramadan Eldomany**

Date: 9/2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Medicinal Chemistry 1 Course code: PC 609

Cours	Course title: Medicinal Chemistry 1 Course code: FC 009					
Course Contents		ILOs	Teaching and Learning Methods	Student Assessment Methods		
Week # 1	Introduction to Pharmaceutical Chemistry	a1, a2	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 2	Physicochemical properties of drugs in relation to biological action	a1, a2, a6, b1, b2,b4	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 3	Cancer Chemotherapy	a2, a3,a4,a5,a6,b1,b2,b3,b4,c1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 4	Cancer Chemotherapy	a2, a3,a4,a5,a6,b1,b2,b3,b4,c1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 5	Cancer Chemotherapy	a2,a3,a4,a5,a6,b1,b2,b3,b4,c1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 6	Cancer Chemotherapy	a2,a3,a4,a5,a6,b1,b2,b3,b4,c1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 7	Mid-term exam					
Week # 8	Cancer Chemotherapy	a2,a3,a4,a5,a6,b1,b2,b3,b4,c1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 9	Chemotherapeutic Agents- Antimicorbial	a2, a3,a4,a5,a6,b1,b2,b3,b4,c1,c2,c3 ,d1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 10	Chemotherapeutic Agents- Antimicorbial (cont.)	a2, a3,a4,a5,a6,b1,b2,b3,b4,c1,c2,c3 ,d1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 11	Chemotherapeutic Agents- Antimicorbial (cont.)	a2, a3,a4,a5,a6,b1,b2,b3,b4,c1,c2,c3 ,d1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 12	Chemotherapeutic Agents- Antimicorbial (cont.)	a2, a3,a4,a5,a6,b1,b2,b3,b4,c1,c2,c3 ,d1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 13	Chemotherapeutic Agents- Antimicorbial (cont.)	a2, a3,a4,a5,a6,b1,b2,b3,b4,c1,c2,c3 ,d1,d2,d3	Lectures, practical training, discussion and brain storming	Written, practical and oral exams		
Week # 14	Chemotherapeutic Agents-Antiviral	a2, a3,a4,a5,a6,b1,b2,b3,b4 ,d1,d2,d3.	Lectures, discussion and brain storming	Written and oral exams		
# 14 Week # 15	Chemotherapeutic Agents- Antiprotozoal	a2,a3,a4,a5,a6,b1,b2,b3,b4,d1,d2,d3	Lectures, discussion and brain storming	Written and oral exams		

Course coordinator: Dr. Tamer Mohamed Ibrahim Head of department: prof. Dr. Ramadan Eldomany

Date: 9/2020

# Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy (Clinical	
	Pharmacy)	
Major or minor element of program	Faculty requirement course	
Department offering the course	Clinical Pharmacy	
<b>Department supervising the course</b>	Clinical pharmacy	
Academic Year / Level	Fourth level, Semester 7	
Date of specification approval	9/2020	

### **A- Basic Information**

Title: Radiopharmaceuticals	Code: <b>PP701</b>
Credit Hours:1	Lecture:1
Tutorial:	Practical:
Total:1	

#### **B- Professional Information**

### 1. Overall aims of course

**Upon successful completion of this course, the students should be able to:** 

Understand the fundamental aspects of nuclear pharmacy, properties of radiopharmaceuticals, their preparation and clinical applications.

# 2. Intended learning outcomes of course (ILOs)

# a- Knowledge and understanding:

**Upon successful completion of this course, the student must be able to:** 

- a1- Describe nuclear pharmacy, radiopharmaceuticals, their properties and types.
- a2- Define the basis of radiopharmaceuticals preparation, handling, calculation and dispensing of their doses.
- a3- Summarize the diagnostic and therapeutic radiopharmaceuticals and their clinical applications.

#### **b- Intellectual skills**

- b1- Recognize ideal and optimal radiopharmaceuticals.
- b2- Utilize a strategy for preparation, handling, and dispensing of radiopharmaceuticals.

# c- Professional and practical skills

- c1. Handle with various types of radiopharmaceuticals with optimal personnel and patient safety.
- c2. Utilize and selection of labeling kit.

# d- General and transferable skills

- d1. Retrieve information from a variety of sources, including the most reputable internet medical information sources
- d2- Demonstrate each section of a published report assessing its appropriateness & how it contributes to fulfill the study objectives d3- Practice extraction the desired drug information from the drug monograph.

### 3. Contents

Week	Topic	No. of hours	Lecture	Tutorial / Practical
1	Introduction to the Concept of nuclear pharmacy, radiopharmaceuticals	1	1	
2	Introduction to the Concept of nuclear pharmacy, radiopharmaceuticals	1	1	
3	Applications of radiopharmaceuticals	1	1	
4	Official radiopharmaceuticals	1	1	
5	Radiopharmaceuticals preparation	1	1	
6	Radiopharmaceuticals preparation	1	1	
7	Mid-term exam			
8	Radiopharmaceuticals preparation	1	1	
9	Diagnostic radiopharmaceuticals	1	1	
10	Diagnostic radiopharmaceuticals	1	1	
11	Therapeutic radiopharmaceuticals	1	1	
12	Therapeutic radiopharmaceuticals	1	1	
13	Preclinical studies of	1	1	

	radiopharmaceuticals			
14	Radiopharmaceuticals in heart disorders	1	1	
15	Radiopharmaceuticals in heart disorders	1	1	

# 4. Teaching and learning methods

a. Lectures	( √ )
b. Practical training / laboratory	( )
c. Seminar / Workshop	( )
d. Class Activity	$(\sqrt{})$
e- E-learning	$(\sqrt{})$
f. Smart boards	$(\sqrt{})$

## 5. Student assessment methods

Written mid-term	To assess	The ability of students to follow-up
exam		The course subjects.
	To assess	
Oral exam	To assess	The ability of students in expressing presenting their knowledge clearly and in systemic approach
Written final exam	To assess	The overall outcomes

## **Assessment schedule**

Assessment 1	Mid-tem exam	Week	7
<b>Assessment 2</b>		Week	
<b>Assessment 3</b>	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

# Weighting or assessments

Mid-Term Examination	10	<b>%</b>
Final-Term Examination	90	<b>%</b>
Oral Examination		%
Practical Examination		<b>%</b>
Semester Work		%
Other types of assessment		<b>%</b>
Total	100	<b>%</b>

# 6. List of references

Course notes

	Dadian	harmaa	auticala	notos	for	students
_	Rathenia	паннас	em care	110116	11111	

Essential books (text books)

Radiopharmaceuticals in nuclear pharmacy and medicine (2017). Richard J Kowalsky and Steven W. Falen.

Recommended books

Handbook of Radiopharmaceuticals (2015). Micheal J Welch and Carol S

Redvanly.

#### Web sites

www.Lexicomp.com

www.Myoclinic.com

www.WHO.com

### 7. Facilities required for teaching and learning

-Class rooms.

- Library.

- Projectors (Overhead, video projector).

- Computers. – Internet

- E-learning. - Smart boards.

### **Course coordinator:**

Dr. Khalid Sobhy

### **Head of Department:**

Prof. Dr. Abdel-Aziz Elashmawy

Course contents - Course ILOs Matrix

Title: Radiopharmaceuticals Code: PP701

Tille: Kaulopharmaceut		415				ie: P	- 4	, <u>J</u> I						
Course Contents	U	nde	rst	and	dge and ling	Inte		ctual	ı	oract	ical	Tr	ansi	ferable
Introduction to the Concept	A1	A2	АЗ	Α4	A5	B1	В2	В3	C1	C2		D1	D2	D3
of nuclear pharmacy, radiopharmaceuticals	J					J			J			J		
Introduction to the Concept of nuclear pharmacy, radiopharmaceuticals	J					J			1				1	
Applications of radiopharmaceuticals		J				J	1			J				J
Official radiopharmaceuticals	<b>√</b>	<b>&gt;</b>				<b>/</b>	J		J			J		J
Radiopharmaceuticals preparation	J	<b>&gt;</b>				J	J			1			J	J
Radiopharmaceuticals preparation	J	<b>&gt;</b>				<b>/</b>	J			J				J
Radiopharmaceuticals preparation	J	J				J	J			J		J		
Diagnostic radiopharmaceuticals			J				J		<b>\</b>				1	<b>J</b>
Diagnostic radiopharmaceuticals		J	J			1	J			1				J
Therapeutic radiopharmaceuticals		J	J				J		J			J		
Therapeutic radiopharmaceuticals		J	<b>√</b>			J	<b>√</b>		J	J		J		
Preclinical studies of radiopharmaceuticals		J				J			J			J	J	
Radiopharmaceuticals in heart disorders		J	J				J		J			J		
Radiopharmaceuticals in heart disorders		J	1				J		J	J				J

### Course coordinator:

Dr. Khalid Sobhy

**Head of Department:** 

Prof. Dr. Abdel-Aziz Elashmawy

### Kafrelshiekh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in pharmacy (clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Clinical pharmacy
<b>Department supervising the course</b>	Clinical pharmacy
Academic Year / Level	Fourth level, semester 7
Date of specification approval	9/2020

#### **A- Basic Information**

Title: Clinical pharmacy 1	Code: PP702
Credit Hours :3	Lecture:2
Tutorial: 1 credit hour	Practical:

#### **B- Professional Information**

#### 1. Overall aims of the course

#### **Upon successful completion of this course, the students should be able to:**

- Study drugs used and their drug interaction
- Definition and concepts on case history, patient management approach, patient history taking and clinical problem solving.
- Practice case study based clinical drug-interactions, adverse drug reactions, drugs interference and clinical laboratory data.

### 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

On successful completion of the course, the graduate should be able to:

- a1- Summarize normal laboratory values.
- a2- Describe concepts of drug interaction and adverse drug reaction.
- a3- Identify the different methods for managing medicines including

dispensing, responding to symptoms, prescribing, provision of medicine and patient information and reporting of adverse reactions to medicines.

#### **b- Intellectual skills**

- b1- Apply SOAP principle on all case studies.
- b2- Analyze medication history to reach problem solving
- b3- Select the most appropriat therapy protocol.

#### c- Professional and practical skills

- c1- Use abnormal laboratory values in diagnosis.
- c2- Select the non-interacting medications.
- c3- Combine the laboratory values during tratment course.
- c4- Design the therapeutic plan.

#### d- General and transferable skills

- d1- Retrieve information from a variety of sources, including libraries, databases and internet.
- d2- Work independently or as a part of team in different pharmaceutical fields.
- d3- Demonstrate creativity and time management skills.
- d4- Implement presentation, writing reports and interviewing skills.

#### 3. Contents

Week	Topic	Total credit hours	Lecture	Tutorial
1	Introduction, Clinical Pharmacy services & activities	3	2	1
2	SOAP	3	2	1
3	SOAP	3	2	1
4	Case history and patient management approach	3	2	1
5	Case history and patient management approach	3	2	1
6	Medication history taking	3	2	1
7	Mid-term exam			
8	Medication history taking	3	2	1
9	Clinical problem solving	3	2	1
10	Drug-interactions	3	2	1
11	Drug-interactions	3	2	1
12	Drug-interactions	3	2	1
13	Adverse drug reactions	3	2	1
14	Adverse drug reactions			Practical exam
15	Drugs interference with clinical laboratory data	3	2	Practical exam

### 4. Teaching and learning methods

a. Lectures	(√)
b. Tutorial (Case study)	$(\sqrt{})$
c. Seminar / Workshop	(-)
d. Class Activity (discussion, brain storm)	(√)
e. E-learning	( √)
f. Smart boards	( √)

#### 5. Student assessment methods

Written mid-term	To assess	The ability of students to follow-up
exam		the course subjects.
Practical exam	To assess	The gained experience in case
		management.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.
Written final exam	To assess	The overall outcomes.

#### **Assessment schedule**

Assessment 1	Mid-term exam	Week	7
Assessment 2	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

### Weighting or assessments Marks/%

Mid-Term Examination	10	<b>%</b>
Final-Term Examination	50	<b>%</b>
Oral Examination	15	<b>%</b>
<b>Practical Examination</b>	25	<b>%</b>
Semester Work		<b>%</b>
Other types of assessment		<b>%</b>
Total	100	<b>%</b>
	marks	
	(%)	

#### 6. List of references

#### Course notes

- Notes in Clinical Pharmacy for fourth level students.
- Practical notes in Clinical Pharmacy for fourth level students.

#### Essential books (text books)

Textbook of therapeutics, drugs and disease management (2017). Helms R, Quan DJ, Herfindal ET(Ed), Williams and Wilkins,  $7^{th}$  Edition.

#### Recommended books

Applied Therapeutics, The clinical Use of Drugs(2015) Koda-Kimble MA(Ed). Lippincott Williams and Wilkins, 10<sup>th</sup> Edition.

Pharmacotherapy A Pathophysiologic Approach (2017). DiPiro JT et

al (Ed). McGraw Hill, 10th Edition.

Websites

www.FDA.gov

www.Medscape.com

www.Myoclinic.com

www.Micromedex.com

### 7. Facilities required for teaching and learning

-Class rooms.

-Tutorial facilities. -Library.

- Projectors

-Computers. -Internet. -smart boards

#### **Course coordinator:**

Dr. Ahmed Amin

### **Head of Department:**

Prof. Dr. Abdel-Aziz Elashmawy

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Clinical pharmacy 1 Course code: PP804

Course			e code: PP8	
Coi	urse Contents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction, Clinical Pharmacy services & activities	a1, a2	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 2	SOAP	b1,c4,d1.d2	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 3	SOAP	b1,c4,d1.d2	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 4	Case history and patient management approach	b2, d2	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 5	Case history and patient management approach	b2, d2	Lectures and Tutorial, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 6	Medication history taking	b2, d2	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 7	Mid-term exam		Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 8	Medication history taking	b2, d2	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 9	Clinical problem solving	b1, b2, c1	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 10	Drug- interactions	a1,a2,b1, b2 ,c2, d1	Lectures and Tutorial, (case study) , class activity (discussion,	Written, practicial and oral exams

			brain storm)	
Week # 11	Drug- interactions	a1,a2,b1, b2 ,c2, d1	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 12	Drug- interactions	a1,a2,b1, b2 ,c2, d1	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 13	Adverse drug reactions	a2, b2, d1, d3, d4	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 14	Adverse drug reactions	a2, b2, d1, d3, d4	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 15	Drugs interference with clinical laboratory data	a1, a2, c1, c3, d2, d3, d4	Lectures and Tutorial, (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams

### **Course coordinator:**

Dr. Ahmed Amin

Head of Department:
Prof. Dr. Abdel-Aziz Elashmawy

Bachelor in Pharmacy
(Clinical pharmacy)
Course Specification
2020-2021
Fifth Level / Semester(9)

### Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in pharmacy (clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmacology & Toxicology
Department supervising the course	
Academic Year / Level	Fifth year, ninth semester
Date of specification approval	09/2020

#### **A- Basic Information**

Title: Clinical Pharmacology	Code: PO906
Credit Hours: 3	Lecture: 2
	Practical: 2

#### **B- Professional Information**

#### 1. Overall aims of the course

#### **Upon successful completion of this course, the students should:**

After completion of the course, the student should have a good ability to select drugs and establish therapeutic regimes according to the pathophysiology of each disease and to foster an attitude of advising the physician based on basic knowledge of therapeutics.

### 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

- a1. Discuss principles of clinical pharmacology.
- a2. Describe the drugs used in the treatment of liver and renal disease, respiratory disease cardiovascular disease, gastrointestinal disease, neurological disorders, as well as anticonvulsants, psychotropics, anxiolytics, bronchodilators and drugs used during pregnancy and lactation
- a3. Describe rational pharmacotherapy of the most common diseases and medical conditions

#### **b- Intellectual skills**

b1. Correlate pharmacological activities of different drugs with therapeutic activity.

### c- Professional and practical skills

c1. Apply the principles of clinical pharmacology and rational pharmacotherapy in clinical practice

#### d- General and transferable skills

- d1. Improved interpersonal skills by interacting effectively with patients and public and health care professionals.
- d2. To retrieve and evaluate information from different sources.
- d3. To demonstrate critical-thinking abilities.
- d4. Team working abilities

### 3. Contents

Week	Topic	Total contact	Lecture	Practical
		hours		
1	Pregnancy and lactation	4	2	2
2	Pregnancy and lactation	4	2	2
3	Medical care at extremes	4	2	2
	of age (elders).			
4	Medical care at extremes	4	2	2
	of age (elders).			
5	Drug metabolism in kidney patient	4	2	2
6	Drug metabolism in kidney patient	4	2	2
7	Semseter work			
8	Drug metabolism in kidney	4	2	2
	patient			
9	Drug metabolism in liver patient	4	2	2
10	Drug metabolism in liver	4	2	2
	patient			
11	Drug metabolism in liver	4	2	2
	patient			
12	Medical care at extremes	4	2	2
	of age (pediatric).			
13	Medical care at extremes	4	2	2
	of age (neonates).			
14	Revision	2	2	Practical exam
15	Revision	2	2	Practical exam

### 4. Teaching and learning methods

a. Lectures  $(\sqrt{\ })$ b. Practical training / laboratory  $(\sqrt{\ })$ c. Seminar / Workshop  $(\sqrt{\ })$ d. Class Activity  $(\sqrt{\ })$ e. E- learning  $(\sqrt{\ })$ f. Smart board  $(\sqrt{\ })$ 

#### 5. Student assessment methods

Semester work	To assess	The ability of students to follow-up	
		The course subjects.	
Practical exam	To assess	The gained experience in laboratory	
		methods and techniques.	
Oral exam	To assess	The ability of students in expressing	
		and presenting their knowledge	
		clearly and in systematic approach.	
Written final exam	To assess	The overall outcomes.	

### **Assessment schedule**

Assessment 1	Semester work	Week	7
Assessment 2	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
Assessment 4	Oral	Week	16,17

### Weighting or assessments

<b>Final-Term Examination</b>	50	<b>%</b>
Oral Examination	<b>15</b>	<b>%</b>
<b>Practical Examination</b>	25	<b>%</b>
Semester Work	10	<b>%</b>
Total	100	<b>%</b>

#### 6. List of references

#### Course notes

- Notes on clinical pharmacology (Department of Pharm./Tox).
- Practical notes of of clinical Pharmacology approved by Pharmacology and Toxicology department 2016.

#### Essential books (text books)

- Basic and Clinical Pharmacology, 13th edition, 2014
- Pharmacotherapy: A Pathophysiologic Approach, 9th edition, 2014.
- Pharmacotherapy Principles and Practice, 3rd edition, 2013

#### Recommended books

- Clinical Pharmacy and Therapeutics, 5e (Walker, Clinical Pharmacy and
- Therapeutics) by Roger Walker BPharm PhD FRPharmS FFPH and Cate Whittlesea BSc MSc PhD MRPharmS (Oct 7, 2011)

- Pharmacotherapy hand book, 9th edition, Barbara G. Wells, 2014

#### Websites

-www.biomedcentral.com

-www.Pubmed.com

-www.medscape.com

### 7. Facilities required for teaching and learning

- Class rooms
- White board
- Data show

Course coordinator: Dr. Sherin Zakaria

Head of Department: Dr. Sherin Zakaria

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Cllinical Pharmacology-1 Course code: PO906

Course C	Contents	ILOs	Teaching	Student
			and Learning	Assessment Methods
Week #	Pregnancy and	a2, b1, c1, d2, d3, d4	Methods Lectures and	Written.
1	lactation	42, 61, 61, 42, 48, 41	practical	practical and
Week#		a2, b1, c1, d2, d3, d4	training Lectures and	oral exams Written.
2 vveek #	Pregnancy and	a2, b1, c1, d2, d3, d4	practical	practical and
	lactation		training,	oral exams
Week #	Medical care at	a1, b1, c1, d2, d3, d4	discussion Lectures and	Written,
3	Medical care at	a1, 01, C1, U2, U3, U4	practical	practical and
	extremes of age		training	oral exams
	(elders).			
Week #	Medical care at extremes of	a3, b1, c1, d2, d3, d4	Lectures and practical	Written, practical and
•	age (elders).		training,	oral exams
			discussion	
Week #	Drug metabolism in kidney	a, a3, b1, c1, d2, d3, d4, d5	Lectures and practical	Written, practical and
	patient		training	oral exams
Week #	Drug metabolism in kidney	a3, b1, c2, d2, d3, d4, d5	Lectures and	Written,
6	patient		practical	practical and oral exams
			training, e- learning,	
			discussion	
Week #	Semseter work			
Week #	Drug metabolism in kidney	a3, b1, c2, d2, d3, d4, d5	Lectures and	Written,
8	patient		practical	practical and oral exams
	r		training, e- learning	
Week #	Drug metabolism in liver	a3, b2, c2, d2, d3, d4	Lectures and	Written,
9	patient		practical training,	practical and oral exams
			brain	orar exams
XX. 1 #		2 1 2 2 12 12 14	storming	Written.
Week # 10	Drug metabolism in liver	a3, b2, c2, d2, d3, d4	Lectures and practical	written, practical and
	patient		training, case	oral exams
			study, brain storming	
Week #	Drug metabolism in liver	a3, b2, c2, d2, d3, d4	Lectures and	Written,
11	patient		practical training, case	practical and oral exams
	pauciit		study, brain	Of al CAdillS
*** * "		0.10.0.10.10.14	storming	XXX to
Week # 12	Medical care at extremes of	a3, b2, c2, d2, d3, d4	Lectures and practical	Written, practical and
	age (pediatric).		training, case	oral exams
Week #	Medical care at extremes of	a4, a5, b2, c2, d2, d3, d4	Lectures and	Written,
13	age (neonates)		practical training, case	practical and oral exams
	age (neonates).		study	Of al CAdillS
Week #	Revision	a, b, c	Lectures,	Written and
14			brain storming	oral exams
Week #	Revision	a, b, c	Lectures	Written and
15				oral exams

Course coordinator: Dr. Sherin Zakaria
Head of department: Dr. Sherin Zakaria

### Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in pharmacy (clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Clinical pharmacy
Department supervising the course	Clinical pharmacy
Academic Year / Level	fifth level, semester 9
Date of specification approval	9/2020

#### **A- Basic Information**

Title: clinical nutrition	Code: PP909
Total Credit Hours :2	Lecture: 1 credit hour
Tutorial:	Practical: 1 credit hour

#### **B- Professional Information**

#### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to **Understand**:

- pharmacotherapy of some critical care disorders and cases involving certain diseases.
- acid-base disorders.
- the principles of enteral and parenteral nutrition, and electrolytes abnormalities

### 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

On successful completion of the course, the students should be able to:

- a1. Demonstrate causes, diagnosis and treatment of some critical conditions.
- a2. learn diagnosis and pharmacotherapy of electrolyte abnormalities.
- a3. report types of nutrition in critical care.

#### **b- Intellectual skills**

- b1. Interpret the critical care and supportive care problems from the available data.
- b2. Select the best diagnosis for the cases of

- critical conditions including acid-base and electrolytes disorders.
- b3. assess the suitable nutrition for different critical conditions.

### c- Professional and practical skills

- c1. Select the laboratory and physical parameters that will be useful in monitoring pharmacotherapy for critical conditions and malnutrition.
- c2. Select the drug of choice, best dose, frequency, and duration for different acid-base and electrolytes abnormalities.
- c3. Prepare and provide the best suitable Nutrition.

### d- General and transferable skills

- d1. Retrieve information from different sources.
- d2. Use internet. .

#### 3. Contents

Week	Topic	Total credit	Lecture	Practical
	•	hours		
1	Introduction	2	1	1
2	Acid-base	2	1	1
	disorders			
3	Acid-base	2	1	1
	disorders			
4	Health nutrition	2	1	1
5	Health nutrition	2	1	1
6	Health nutrition	2	1	1
7	Mid-term exam			
8	Electrolyte	2	1	1
	abnormalities			
9	Electrolyte	2	1	1
	abnormalities			
10	Electrolyte	2	1	1
	abnormalities			
11	Enteral nutrition	2	1	1
12	Enteral nutrition	2	1	1
13	Parenteral	2	1	1
	nutrition			
14	Parenteral	1	1	Practical

	nutrition			exam
15	Parenteral	1	1	Practical
	nutrition			exam

### 4. Teaching and learning methods

a. Lectures	(√)
b. practical	<b>(</b> √)
c. Case study	$(\sqrt{})$
d. Class Activity (discussion, brain storm)	( √)
e. E-learning	()
f. smart board	()

### 5. Student assessment methods

Written periodical	To assess	The ability of students to follow-up
exam		the course subjects.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.
Practical exam	To assess	The gained experience in case
		management.
Written final exam	To assess	The overall outcomes.

### **Assessment schedule**

Assessment 1	Periodical exam	Week	7
<b>Assessment 2</b>	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

### Weighting or assessments Marks/%

Periodical Examination	10	<b>%</b>
Final-Term Examination	50	%
Oral Examination	15	<b>%</b>
Practical Examination	25	%
Total	100	%
	marks	
	(%)	

### 6. List of references

Course notes

Clinical nutrition notes for fifth level
Practical clinical nutrition notes for fifth level

#### Essential books (text books)

- Pharmacotherapy: A Pathophysiologic Approach, 11e, Joseph T. DiPiro, Gary C.
- Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13e, Laurence L. Brunton, Randa Hilal-Dandan, Björn C. Knollmann.
- Applied Therapeutics, The clinical Use of Drugs(2017) Koda-Kimble MA( 11<sup>Ed</sup>).

#### Websites

www.pubmed.com. www.medscape.com. www.Guidelines.org.

### 7. Facilities required for teaching and learning

- -Class rooms.
  - -Library.
- Data show.
- smart board
- E-learning
- -Computers.

-Internet.

### **Course coordinator:**

Dr. khaled Sobhy

#### **Head of Department:**

Prof. Dr. Abdelaziz Elashmawy

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: clinical nutrition Course code: **PP909** 

	title: clinical nutr	ition	Course code: PP909		
C	ourse content	ILOs	Teaching and Learning Methods	Student Assessment Methods	
Week#1	Introduction	a1, b1, b2	Lectures and) class activity (discussion, brain storm)	Written, practicial and oral exams	
Week # 2	Acid-base disorders	a1, b2, c2, d1, d2	Lectures and (case study), class activity (discussion, brain storm)	Written, practicial and oral exams	
Week # 3	Acid-base disorders	a1, b2, c2, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams	
Week # 4	Health nutrition	a3, c3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams	
Week # 5	Health nutrition	a3, c3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams	
Week # 6	Health nutrition	a3, c3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams	
Week #	Midterm		Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams	
Week # 8	Electrolyte abnormalities	a2, b2, c2, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams	
Week # 9	Electrolyte abnormalities	a2, b2, c2, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams	

Week #	Electrolyte	a2, b2, c2, d1,	Lectures and	Written,
10	abnormalities	d2, 52, 62, d1,	practical,	practicial and
	asiioiiiaiitios	42	(case study),	oral exams
			class activity	orar chamo
			(discussion,	
			brain storm)	
Week #	Enteral	a1, a3, b3, c1,	Lectures and	Written,
11	nutrition	c3, d1, d2	practical,	practicial and
	110(01101011	00, 41, 41	(case study),	oral exams
			class activity	
			(discussion,	
			brain storm)	
Week #	Enteral	a1, a3, b3, c1,	Lectures and	Written,
12	nutrition	c3, d1, d2	practical,	practicial and
			(case study),	oral exams
			class activity	
			(discussion,	
			brain storm)	
Week #	Parenteral	a1, a3, b3, c1,	Lectures and	Written,
13	nutrition	c3, d1, d2	practical,	practicial and
			(case study),	oral exams
			class activity	
			(discussion,	
			brain storm)	
Week #	Parenteral	a1, a3, b3, c1,	Lectures and	Written,
14	nutrition	c3, d1, d2	class activity	practicial and
			(discussion,	oral exams
			brain storm)	
Week # 15	Parenteral	a1, a3, b3, c1,	Lectures and	Written,
12	nutrition	c3, d1, d2	class activity	practicial and
			(discussion,	oral exams
			brain storm)	

### **Course coordinator:**

Dr. khaled Sobhy

# Head of Department: Prof. Dr. Abdelaziz Elashmawy

### Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in pharmacy (clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Clinical Pharmacy
Department supervising the course	Clinical Pharmacy
Academic Year / Level	Fifth level, semester 9
Date of specification approval	9/2020

#### **A- Basic Information**

<b>Title: Clinical Pharmacokinetics</b>	Code: PP907
<b>Total Credit Hours :3</b>	Lecture :2
<b>Tutorial:</b>	Practical: (1 credit hour)

#### **B- Professional Information**

#### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to Understand:

- the factors which govern the time course of drug concentration in the body.
- the rates of the transfer processes associated with absorption, distribution, metabolism, and excretion of a drug in the intact subject.

### 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

On successful completion of the course, the students should be able to:

- a1- demonstrate bioequivalence studies.
- a2- Describe the features of one & two compartment model.
- a3-explain the proper dose when shift form IV to oral.
- a4- demonstrate the proper dose in liver and kidney disorders.
- a5- identify dose selection for narrow therapeutic drugs.
- a6- Describe rates and orders of reactions.
- a7- learn Nonlinear PK.

#### **b- Intellectual skills**

- blassess protocols for the pharmacological testing of new drugs.
- b2- demonstrate the chronic toxicity of new drugs.
- b3- Select the common pharmacokinetic parameters which can affect the drug plasma concentration time profile.

#### c- Professional and practical skills

- c1- Use effectively the model of drug kinetic.
- c2- compare between one & two compartment.
- c3-assess dose adjustment, calculation, and recommendation.
- c4-demonstrate bioequivalence studies
- c5- compare the difference between linear & nonlinear PK.
- c6- assess the dosing regimen for patients based on the conditions of each individual patient.

#### d- General and transferable skills

- d1- Implement presentation, writing reports and interviewing skills
- d2- evaluate information from a variety of sources, including libraries, databases and internet.
- d3- arrange effectively in a team and demonstrate time management skills.

#### 3. Contents

Week	Topic	Total credit hours	Lecture	practical
1	Introduction (basic pharmacokinetics, rates and orders)	3	2	1
2	Rate of kinetics process	3	2	1
3	Drug kinetic following single IV dose	3	2	1
4	Drug kinetic following single oral dose	3	2	1
5	Steady state during constant rate infusion	3	2	1
6	Multiple dosing and dosage regimen	3	2	1
7	Mid-term exam			
8	Bioavailability and bioequivalence	3	2	1
9	Bioavailability and bioequivalence (cont.)	3	2	1
10	Two compartment	3	2	1

	pharmacokinetic model			
11	Metabolites and urinary excretion	3	2	1
12	Distribution and drug binding	3	2	1
13	Dose adjustment in renal disorder	3	2	1
14	Intermittent IV dose	2	2	Practical exam
15	Non-linear PK Dosage regimen, age, and diseases state	2	2	Practical exam

### 4. Teaching and learning methods

a. Lectures	( √ )
b. practical	$(\sqrt{})$
c. Case study	$(\sqrt{})$
d. Class Activity (discussion, brain storm)	()
e. E-learning	(√)
f. Smart boards	()

### **5. Student assessment methods**

Periodical exam	To assess	The ability of students to follow-up	
		the course subjects.	
Practical exam	To assess	The gained experience in case	
		management.	
Oral exam	To assess	The ability of students in expressing	
		and presenting their knowledge	
		clearly and in systematic approach.	
Written final exam	To assess	The overall outcomes.	

### **Assessment schedule**

Assessment 1	Periodical exam	Week	7
<b>Assessment 2</b>	Practical exam	Week	14,15
<b>Assessment 3</b>	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

### Weighting or assessments Marks/%

Periodical Examination	10	%
Final-Term Examination	50	%
Oral Examination	15	%
Practical Examination	25	%
Total	100	%
	marks	

#### 6. List of references

#### Course notes

- Lecture notes in Clinical Pharmacokinetics for clinical pharmacy department.
- Practical notes in Clinical Pharmacokinetics for clinical pharmacy department.

Essential books (text books)

Basic clinical pharmacokinetics (2012) Hedaya M (2nd). Applied Therapeutics. 3<sup>rd</sup> Edition.

Recommended books

-Basic pharmacokinetics barker 2017, 6th edition

#### Websites

www.rxKinetics.com www.pharmpress.com

### 7. Facilities required for teaching and learning

-Class rooms.

-Tutorial facilities. -Library.

- Data show

-Computers. -Internet.

- E-learning. - Smart boards.

#### **Course coordinator:**

Dr. khaled Sobhy

### **Head of Department:**

Prof. Dr. Abdel-Aziz Elashmawy

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Clinical Pharmacokinetics Course code: PP907

	title: Clinical Pharm			Student
	Contents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction (basic pharmacokinetics, rates and orders)	a6,c1,d1	Lectures and (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 2	Rate of kinetics process	a2,b3,c2	Lectures and, practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 3	Drug kinetic following single IV dose	a7,b3,c2,c5	Lectures and ,practical; (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 4	Drug kinetic following single oral dose	a2,b1,b3,c2	Lectures and, practical ,(case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 5	Steady state during constant rate infusion	a3,b1,b3,c3	Lectures and practical ,(case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 6	Multiple dosing and dosage regimen	a3,b1,b3,c3,d1	Lectures and, practical ,(case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 7	Mid-term exam		Lectures and, practical ,(case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 8	Bioavailability and bioequivalence	a1,b1,b3,c4,d3	Lectures and ,practical , (case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 9	Bioavailability and bioequivalence (cont.)	a1,b1,b3,c4,d2,d3	Lectures and practical ,(case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 10	Two compartment pharmacokinetic model	a4,a5,c3,c6,d1	Lectures and practical ,(case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 11	Metabolites and urinary excretion	a6,b2,c6,d1	Lectures and, practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 12	Distribution and drug binding	a4,a5,b1,b2,b3,c3,c6, d2	Lectures and, practical,(case study), class activity (discussion, brain storm)	Written, practicial and oral exams

Week # 13	Dose adjustment in renal disorder	a4,a5,b1,b2,b3,c3,c6, d2	Lectures and, practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 14	Intermittent IV dose	a4,a5,c6,d2	Lectures and practical ,(case study) , class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 15	Non-linear PK Dosage regimen, age, and diseases state	a4,a5,b3,c3,c6,d1,d2	Lectures and practical ,(case study) , class activity (discussion, brain storm)	Written, practicial and oral exams

### **Course coordinator:**

Dr. khaled Sobhy

# Head of Department: Prof. Dr. Abdel-Aziz Elashmawy

### Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy (Clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Clinical Pharmacy
Department supervising the course	
Academic Year / Level	Fifth level, semester 9
Date of specification approval	9/2020

#### **A- Basic Information**

Title: oncology	Code : <b>PP908</b>
<b>Total Credit Hours :3</b>	Lecture :2 credit hours
Tutorial:	Practical :1 credit hour

#### **B- Professional Information**

#### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to understand:

- the basic principles of cancer therapeutics including tumor growth, diagnosis, staging, chemotherapy, systematic approach of selection of chemotherapy and their pharmacology.
- principles of oncologic supportive care.
- principles and treatment of some cancer diseases.

### 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

On successful completion of the course, the students should be able to

- al- Demonstrate the principles of tumor growth, diagnosis and staging.
- a2- discuss principle of chemotherapy.
- a3- report oncologic emergencies.
- a4- identify the principles of drug selection for each individual case

#### **b- Intellectual skills**

- b1- demonstrate methods for tumor detection.
- b2- detect a therapeutic plan for tumor treatment based on its stage.

b3- predict response of patient to antitumor drugs.

### c- Professional and practical skills

c1-demonstrate the most appropriate antitumor agent based on its activity, side effects & contraindications.

c2-assess the efficacy of chemotherapy.

c3- conduct a comparison between different cancer types, their etiology, complications and prognosis.

#### d- General and transferable skills

d1- assess in medical team work or independently in different

hospital settings.

d2-implement information from different resources.

#### 3. Contents

Week	Topics	Total	Lecture	Tutorial /
		credit		Practical
		hours		
1	Introduction to oncology	3	2	1
2	Introduction to oncology	3	2	1
3	Introduction to oncology	3	2	1
4	Introduction to oncology	3	2	1
5	Breast cancer	3	2	1
6	Breast cancer	3	2	1
7	Lung cancer	3	2	1
8	Lung cancer	3	2	1
9	lymphoma	3	2	1
10	lymphoma	3	2	1
11	Colorectal cancer	3	2	1
12	leukemia	3	2	1
13	leukemia	3	2	1
14	leukemia	2	2	Practical exam
15	leukemia	2	2	Practical exam

#### 3. Contents

### 4. Teaching and learning methods

a. Lectures

 $(\sqrt{})$ 

b.practical	( √ )
c. case study	$(\sqrt{})$
d. Class Activity (discussion, brain storm)	( √)
e.E- learning	$(\sqrt{})$
f.smart board	$(\sqrt{})$

### 5. Student assessment methods

Written periodical	To assess	The ability of students to follow-up
exam.		The course subjects.
Practical exam	To assess	The ability of students to apply and
		answer the practical question
Oral exam	To assess	The ability of students in expressing and presenting their knowledge
		clearly and in systematic approach.
Written final exam	To assess	The overall outcomes.

### Assessment schedule

Assessment 1	periodical exam	Week	7
	Practical exam	Week	15
<b>Assessment 2</b>	Final exam	Week	16,17
<b>Assessment 3</b>	Oral	Week	16,17

### Weighting or assessments

Periodical Examination	10
Final-Term Examination	50
Oral Examination	15
Practical Examination	25
Total	100
	mark

### 6. List of references

1. Essential Books (Text Books):	<ul> <li>Course notes:</li> <li>Pharmacotherapy 10th edition, 2013.</li> <li>A Pathophysiologic Approach Dipiro JT,McGrw-Hill. 10th edition</li> </ul>
2. Recommended Books:	• Applied therapeutics. Ed kuda kimble eleventh edition. 2017
3. Periodicals, Web Sites:	<ul><li>www.pubmed.com.</li><li>www.medscape.com.</li></ul>
	• www.Guidelines.org.

### 7. Facilities required for teaching and learning

-Class rooms.	
- Data show	- Library.

-Computers.	-Internet.	
Course coordinator:		
Dr.Ahmed Amin		
Head of Department:		
Prof. Dr. Ramadan Eldomany		
Date: 9/2020		

#### **Course Plan**

Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment
Course title: Oncology Course code: PP908

Carr	Course title: Uncolog	ILOs		rse code: PP908
Course Contents		iLUs	Teaching	Student
			and	Assessment
			Learning Methods	Methods
Week # 1	I oncology: Classification of chemotherapeutics and cancer prevention	a1, a2, a3	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 2	oncology: Classification of chemotherapeutics and cancer prevention	a2, a4, b2, b3, c1, c2, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 3	oncology: Classification of chemotherapeutics and cancer prevention	a2, a4, b2, b3, c1, c2, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 4	oncology: Classification of chemotherapeutics and cancer prevention	a2, a4, b2, b3, c1, c2, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 5	Breast cancer	a3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 6	Breast cancer	a3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 7	Lung cancer	a3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 8	Lung cancer	a4, b3, c2, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 9	lymphoma	a4, b3, c2, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 10	lymphoma	a1, a4, b2, c1, c2, c3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 11	Colorectal cancer	a1, a4, b2, c1, c2, c3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain	Written, practicial and oral exams

			storm)	
Week # 12	leukemia	a1, a4, b2, c1, c2, c3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 13	leukemia	a1, a4, b2, c1, c2, c3, d1, d2	Lectures and practical, (case study), class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 14	leukemia	a1, a4, b2, c1, c2, c3, d1, d2	Lectures and class activity (discussion, brain storm)	Written, practicial and oral exams
Week # 15	leukemia	a1, a4, b2, c1, c2, c3, d1, d2	Lectures and class activity (discussion, brain storm)	Written, practicial and oral exams

### **Course coordinator:**

**Dr.Ahmed Amin** 

**Head of Department:** 

Prof. Dr. Ramadan Eldomany

### Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in Pharmacy (Clinical Pharmacy
Major or minor element of program	Major
Department offering the course	Sociology Department/ Faculty of Art
<b>Department supervising the course</b>	Pharmacology
Academic Year / Level	Fifth level, semester 9
Date of specification approval	9/2020

#### **A-Basic Information**

Title: Sociology	Code: HU 903
Credit Hours :1 hr	Lecture :1 hr/week
Tutorial :	Practical:
Total :1 hr	

#### **B- Professional Information**

#### 1. Overall aims of the course

Upon successful completion of this course, the students should be able to:

- understand fundamentals of sociology.
- Deal with social problems.

### 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

On successful completion of the course, the graduate should be able to efficiently demonstrate the essential knowledge and understanding of:

- a1- The social and behavioral sciences relevant to pharmacy.
- a2- Positive interaction.

#### **b- Intellectual skills**

- b1- Recognize how to diagnose social problems.
- b2- Assess how to find solutions for such problems.

### c- Professional and practical skills

- c1-Use clinical data, patient assessment and appropriate medical literatures to optimize therapeutic drug regimens.
- c2-Assess information from other health professionals, medical records and pharmacy records and use this information on behalf of the patient to identify, assess, solve and prevent

drug related problems.

- c3-Use effectively patient counseling to teach the patients about their medications.
- c4- Use effectively the principle of patient communication to gain trust from the patient.

#### d- General and transferable skills

- d1-Develop the ability to solve problems.
- d2- Demonstrate oral and written communication skills.
- d3- Develop good selling, financial, stock management and negotiation skills.

#### 3. Contents

Week	Topic	<b>Total contact</b>	Lecture	Tutorial /
	•	hours		Practical
1	Approach	2	2	
2	Approach (cont.)	2	2	
3	Methods	2	2	
4	Methods (cont.)	2	2	
5	Theories	2	2	
6	Theories (cont.)	2	2	
7	Mid-term exam			
8	Theories	2	2	
9	Theories (cont.)	2	2	
10	MFAP	2	2	
11	MFAP (cont.)	2	2	
12	Systems in Society	2	2	
13	Systems in Society (cont.)	2	2	
14	Technology of social Interaction	2	2	
15	Technology of social Interaction (cont.)	2	2	

<b>4.</b> ′	<b>Teaching</b>	and	learning	methods
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a. Lectures	$(\sqrt{})$
b. Practical training / laboratory	()
c. Seminar / Workshop	(
d. Class Activity	( )
e. Lectures	$(\sqrt{1})$

### 5. Student assessment methods

Written mid-term	To assess	The ability of students to follow-up
exam		The course subjects.
Written final exam	To assess	The overall outcomes.

#### **Assessment schedule**

Assessment 1 Mid-term exam Week 7
Assessment 3 Final exam Week 16,17

Weighting or assessments

Mid-Term Examinati	on	10	<b>%</b>
Final-Term Examina	tion	90	<b>%</b>
Total		100	<b>%</b>

#### 6. List of references

Course notes

- Notes on Sociology approved by the department

Essential books (text books)

Communication skills

Recommended books

Websites

### 7. Facilities required for teaching and learning

- -Class rooms.
- -Laboratory facilities. -Library.
- Projectors (Overhead, video projector)
- -Computers. –Internet.

#### **Course coordinator:**

Dr. Hemmat Basiuony

### **Head of Department:**

Dr. Ales askender

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: **Sociology** Course code: **2258** 

Course title. Sociology Course code. 2256				
Course	Contents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Approach	a1 ,a2 ,b2 ,d1	Lectures	Written exams
Week # 2	Approach (cont.)	a1 ,a2 ,b2 ,d1	Lectures	Written exams
Week # 3	Methods	a2,a3	Lectures	Written exams
Week # 4	Methods (cont.)	a2,a3	Lectures	Written exams
Week # 5	Theories	a1 ,a3, d1	Lectures	Written exams
Week # 6	Theories (cont.)	a1 , ,a3, d1	Lectures	Written exams
Week # 7	Mid-term exam			
Week # 8	Theories	a1,a3 ,d1	Lectures	Written exams
Week # 9	Theories (cont.)	a1,a3 ,d1	Lectures	Written exams
Week # 10	MFAP	a3,b1	Lectures	Written exams
Week #	MFAP (cont.)	a3, b1	Lectures	Written exams
Week # 12	Systems in Society	a1,a3 , a2	Lectures	Written exams
Week # 13	Systems in Society (cont.)	a1,a3 , a2	Lectures	Written exams
Week # 14	Technology of social Interaction	a2 , b2 , c1,c2,d1	Lectures	Written exams
Week # 15	Technology of social Interaction (cont.)	a2 , b2 , c1, c3,d2	Lectures	Written exams

### **Course coordinator:**

Dr. Hemmat Basiuony

### **Head of Department:**

Dr. Ales askender

### Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in pharmacy (clinical pharmacy)	
Major or minor element of program	Major	
Department offering the course	Pharmacology & Toxicology	
Department supervising the course		
Academic Year / Level	Fifth year, ninth semester	
Date of specification approval	09/2020	

#### **A- Basic Information**

Title: Therapeutics 1	Code: PO905		
Credit Hours: 3	Lecture: 2		
	Practical: 2		

#### **B- Professional Information**

#### 1. Overall aims of the course

#### **Upon successful completion of this course, the students should:**

The aim of the course is to provide pharmacy graduates with information on the etiology, clinical signs and symptoms, investigations and principles of treatment of disease important to pharmacists in their development of patient- oriented practice.

### 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

- a1. Recall the underlying principles for the proper choice of drugs in treating major diseases affecting the respiratory system, renal system and blood.
- a2, State the pharmacotherapy-related problems such as drug side effects, interactions, disease limitations and contraindications
- a3. Appreciate the problems met with drug use and management of disease of special populations (elderly or juvenile patients.
- a4. Recall the underlying principles for the proper choice of drugs in treating major diseases affecting the blood and GIT

#### **b- Intellectual skills**

- b1. Analyze and interpret clinical cases, establish different regimens of drug intervention for pharmacotherapy of clinical diseases, and handle different drug-related problems in clinical and/or pharmacy settings.
- b2. Extract relevant information for clinical case notes; discuss problems in therapeutic management of patients, help in recommending the optimal drug for each patient depending on his medical history and council the patient about the proper use

of his prescribed drugs in addition to proposing alternatives should the patient not tolerate his prescribed drugs.

- b3. Consult with clinicians to develop the most suitable treatment strategy, especially for patients suffering from more than one disease, and help to determine drug dosage in geriatric patients and juvenile patients to avoid the development of side effects.
- b4. Educate the patients about their diseases and how to make the best benefit of their medication and teach patients about the effects of drugs, laboratory tests, drugdrug and drug-disease interactions.

### c- Professional and practical skills

- c1. Interpret the finding of different laboratory tests and its relation to disease management.
- c2. Recognize signs and symptoms of diseases.
- c3. Perform different diagnosis of diseases.
- c4. Advice patients and physician of the proper regimens and monitor drug regimen therapeutic outcomes.
- c5. Identify and solve drug-related and patient-related problems while advising other members of health care team on the impact of various drug regimens

#### d- General and transferable skills

- d1. Write reports and give oral presentations
- d2. Use web browsing to locate and use online data bases.
- d3- Work as a drug expert partner of the health care team. d4- Study independently to meet targets with deadlines

#### 3. Contents

Week	Topic	Total contact hours	Lecture	Practical
1	Drugs affecting endocrine system	4	2	2
2	Drugs affecting endocrine system (cont.)	4	2	2
3	Drugs affecting endocrine system (cont.)	4	2	2
4	Drugs affecting endocrine system (cont.)	4	2	2
5	Drugs affecting endocrine	4	2	2

	system(cont.)			
6	Drugs affecting endocrine system	4	2	2
7	Semester work			
8	Pharmacotherapy of infectious diseases	4	2	2
9	Pharmacotherapy of infectious diseases	4	2	2
10	Pharmacotherapy of infectious diseases	4	2	2
11	Pharmacotherapy of infectious diseases	4	2	2
12	Pharmacotherapy of infectious diseases	4	2	2
13	Pharmacotherapy of infectious diseases	4	2	2
14	Pharmacotherapy of infectious diseases	2	2	Practical exam
15	Revision	2	2	Practical exam

### 4. Teaching and learning methods

a. Lectures	$(\sqrt{})$
b. Practical training / laboratory	()
c. Seminar / Workshop	( )
d. Class Activity	(√)
e. E- learning	(√)
f. Smart board	$(\sqrt{})$

### 5. Student assessment methods

Semester work	To assess	The ability of students to follow-up	
		The course subjects.	
Practical exam	To assess	The gained experience in laboratory	
		methods and techniques.	
Oral exam	To assess	The ability of students in expressing	
		and presenting their knowledge	
		clearly and in systematic approach.	
Written final exam	To assess	The overall outcomes.	

### **Assessment schedule**

Assessment 1	Semester work	Week	7
Assessment 2	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

### Weighting or assessments

Final-Term Examination	50	%
Oral Examination	15	%
<b>Practical Examination</b>	25	%
Semester Work	10	%
Total	100	%

#### 6. List of references

Course notes

Notes on Therapeutics 1 (Department of Pharm./Tox.)

Essential books (text books)

The Pharmacological Basis of Therapeutics (2008).Goodman & Gilman's. 12 <sup>th</sup> edition. The McGraw-Hill Companies

-Pharmacotherapy A Pathophysiologic Approach, by Joseph DiPiro , Robert L. Talbert, Gary Yee, Barbara Wells, L. Michael Posey, 9th edition, 2014

#### Recommended books

- Clinical Pharmacy and Therapeutics, 5e (Walker, Clinical Pharmacy and Therapeutics) by Roger Walker BPharm PhD FRPharmS FFPH and Cate Whittlesea BSc MSc PhD MRPharmS (Oct 7, 2011)
- Pharmacotherapy hand book, 9th edition, Barbara G. Wells, 2014

#### Websites

- Google scholar: https://scholar.google.com.eg/
- Pubmed: http://www.ncbi.nlm.nih.gov/pubmed
- Science Direct: http://www.sciencedirect.com/

### 7. Facilities required for teaching and learning

- Class rooms.
- White board
- Data show

Course coordinator: Dr. Shady Allam

Head of Department: Dr. Sherin Zakaria

Date: / 9/2020

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: Therapeutics 1 Course code: PO905

Course C	ontents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week #	Drugs affecting endocrine system	a1, b1, c1, d2, d3, d4	Lectures and practical training	Written, practical and oral exams
Week #	Drugs affecting endocrine system (cont.)	a1, b1, c1, d2, d3, d4	Lectures and practical training, discussion	Written, practical and oral exams
Week #	Drugs affecting endocrine system (cont.)	a1, b1, c1, d2, d3, d4	Lectures and practical training	Written, practical and oral exams
Week #	Drugs affecting endocrine system (cont.)	a2, a5, b1, c1, d2, d3, d4	Lectures and practical training, discussion	Written, practical and oral exams
Week # 5	Drugs affecting endocrine system(cont.)	a2, a3, b1, c1, d2, d3, d4, d5	Lectures and practical training	Written, practical and oral exams
Week #	Drugs affecting endocrine system	a2, a3, b1, c2, d2, d3, d4, d5	Lectures and practical training, e-learning, discussion	Written, practical and oral exams
Week # 7	Semester work			
Week # 8	Pharmacotherapy of infectious diseases	a2, a3, b1, c2, d2, d3, d4, d5	Lectures and practical training, e-learning	Written, practical and oral exams
Week #	Pharmacotherapy of infectious diseases	a4, a5, b2, c2, d2, d3, d4	Lectures and practical training, brain storming	Written, practical and oral exams
Week # 10	Pharmacotherapy of infectious diseases	a4, a5, b2, c2, d2, d3, d4	Lectures and practical training, case study, brain storming	Written, practical and oral exams
Week # 11	Pharmacotherapy of infectious diseases	a4, a5, b2, c2, d2, d3, d4	Lectures and practical training, case study, brain storming	Written, practical and oral exams
Week # 12	Pharmacotherapy of infectious diseases	a4, a5, b2, c2, d2, d3, d4	Lectures and practical training, case study	Written, practical and oral exams
Week # 13	Pharmacotherapy of infectious diseases	a4, a5, b2, c2, d2, d3, d4	Lectures and practical training, case study	Written, practical and oral exams
Week # 14	Pharmacotherapy of infectious diseases	a5, b3, b4, c4, d2, d3, d4, d5	Lectures, brain storming	Written and oral exams
Week # 15	Revision	a5, b3, b4, c4, d2, d3, d4, d5	Lectures	Written and oral exams

Course coordinator: Dr. Shady Allam Head of department: Dr. Sherin Zakaria

### Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor in pharmacy (clinical pharmacy)	
Major or minor element of program	Major	
Department offering the course	Pharmacology & Toxicology	
<b>Department supervising the course</b>		
Academic Year / Level	Fifth year, ninth semester	
Date of specification approval	9/2020	

#### **A- Basic Information**

Title: Toxicology and Forensic	Code :PO904
Chemistry	
Credit Hours: 3	Lecture :2
	Practical :2

#### **B- Professional Information**

#### 1. Overall aims of the course

#### **Upon successful completion of this course, the students should be able to:**

By the end of this course, the students should be able to correctly define the general principles of basic toxicology taking into consideration mutagenesis, carcinogenesis and teratogenesis. In addition, students should estimate the risk of different toxicities including, heavy metals, poisoning with common drugs, poisoning with common chemicals, radiation and radioactive material toxicity, clinical toxicology of specific drug groups. Specific organ toxicities. General management of toxicity with natural toxins, gases, animals and plant toxins, maternal, fetal and neonatal toxicity.

### 2. Intended learning outcomes of the course (ILOs)

### a- Knowledge and understanding:

- a1. Define the general principles of basic toxicology and mechanisms of cellular injury and the mechanisms of mutagenesis, carcinogenesis and teratogenesis.
- a2. Unravel the list of the various toxic chemicals & their classes as well as factors affecting them.
- a3. Define the kinetics of different classes of poisons, pointing out the absorption, distribution, and elimination of toxicants and different factors that regulate their effects in the body.
- a4. Identify and outline the clinical picture of various types of toxicity, their diagnosis & treatment.
- a5. Outline the toxicity profiles of various drugs of the medicinal cabinet.

#### **b- Intellectual skills**

- b1. Judge the factors affecting poison's absorption, distribution and elimination.
- b2. Discriminate between acute toxicity and chronic toxicity as well as teratogenicity and mutagenicity and the toxicological tests that are commonly used for the evaluation of

each.

- b3. Interpret the major classes of toxins and their mechanisms of action on different organs.
- b4. Analyze clinical cases of different groups of drugs. c5- Evaluate and manage various types of poisons.

### c- Professional and practical skills

- c1. Estimate the risk of different toxicities including heavy metals, gases, animals and plant toxins.
- c2 Apply the perfect technique of animal handling and poison injection.
- c3. Use appropriately the basic laboratory equipments safely and efficiently.
- c4. Perform experiments in the lab and field within proper technical, safety and ethical framework.
- c5. Safely handle pharmaceutical materials and chemical agents

### d- General and transferable skills

- d1. Work effectively within a team frame.
- d2. Find out and fulfill effective solutions for problems associated with the practical part of the course.
- d3. Identify targets and work-plans and time to meet targets within deadlines.
- d4. Shaping out the student's skills in an attempt to enhance his/her independency

#### 3. Contents

Week	Topic	Total contact hours	Lecture	Practical
1	General Principles of Toxicology (acute and chronic toxicity)	4	2	2
2	Management of poisoned patients	4	2	2
3	Mechanisms of cellular injury	4	2	2
4	Aspirin toxicity	4	2	2
5	Paracetamol toxicity	4	2	2
6	Corrosives & solvents	4	2	2
7	Semester work			
8	Target organ toxicity (Hepatotoxicity & Nephrotoxicity)	4	2	2
9	Target organ toxicity (Nervous system toxicity, Pulmonary toxicity)	4	2	2
10	Heavy metals	4	2	2
11	Heavy metals	4	2	2
12	Free radical toxicity	4	2	2
13	Hazards of radiation	4	2	2

14	Toxicology of Pesticide	2	2	Practical exam
15	Toxicology of Pesticide	2	2	Practical exam

### 4. Teaching and learning methods

a. Lectures $(\sqrt{\ })$ b. Practical training / laboratory $(\sqrt{\ })$ c. Seminar / Workshop $(\sqrt{\ })$ d. Class Activity $(\sqrt{\ })$ e. E- learning $(\sqrt{\ })$ f. Smart board $(\sqrt{\ })$ 

#### **5.** Student assessment methods

Semester work	To assess	The ability of students to follow-up	
		the course subjects.	
Practical exam	To assess	The gained experience in laboratory	
		methods and techniques.	
Oral exam	To assess	The ability of students in expressing	
		and presenting their knowledge	
		clearly and in systematic approach.	
Written final exam	To assess	The overall outcomes.	

### **Assessment schedule**

Assessment 1	Semester work	Week	7
<b>Assessment 2</b>	Practical exam	Week	14.15
Assessment 3	Final exam	Week	16,17
<b>Assessment 4</b>	Oral	Week	16,17

### Weighting or assessments

Final-Term Examination	50	<b>%</b>
Oral Examination	15	<b>%</b>
Practical Examination	25	%
Semester Work	10	%
Total	100	<b>%</b>

#### 6. List of references

Course notes

Notes on Toxicology (Department of Pharm./Tox., college of Pharmacy,), Approved by department counsil

Essential books (text books)

- Medical Toxicology (1988). Ellenhorn, MJ, Barceloux DO. 1 st editin. John Wiley & Sons
- Comparative Review in Toxicology (1989). Bryson PD. 2  $^{\rm nd}$  ed. Rockville, MD

#### Recommended books

- A Textbook of Modern Toxicology (2004). Ernest Hodgson .3 <sup>rd</sup> Edition, John Wiley & Sons, Inc.
- Casarett & Doull's Essentials of Toxicology, Third Edition (Lange), 3rd edition, 2015

#### Websites

- Google scholar: https://scholar.google.com.eg/
- Pubmed: http://www.ncbi.nlm.nih.gov/pubmed
- Science Direct: http://www.sciencedirect.com/

### 7. Facilities required for teaching and learning

- -Class rooms
- -Laboratory facilities
- Data Show
- Library Computers.
- -Internet

### **Course coordinator:**

Dr. Ahmed Mansour

### **Head of Department:**

Dr. Sherine Zakaria

# Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course title: **Toxicology and Forensic Chemistry**Course code: **PO904** 

Course title: I oxicology and Forensic Chemistry			Course code: PO904	
	Course Contents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	General Principles of Toxicology (acute and chronic toxicity)	a1,c1,d1,d3	Lectures and practical training	Written, practical and oral exams
Week # 2	Management of poisoned patients	a2,c1,d1,d3	Lectures practical training Case study	Written, practical and oral exams
Week#	Mechanisms of cellular injury	a3,b2,c1,d1,d3	Lectures practical training Case study Discussion	Written, practical and oral exams
Week # 4	Aspirin toxicity	a2,a3,a4,a5,b2,c1,d1,d3	Lectures and practical training	Written, practical and oral exams
Week # 5	Paracetam ol toxicity	a2,a3,a4,a5,b1,b2,b3,c1,c3,c4,c5,d1,d3	Lectures and practical training	Written, practical and oral exams
Week #	Corrosives & solvents	a2,a3,a4,a5,b1,b2,b3,c1,c3,c4,c5,d1,d3	Lectures practical training and brain storming	Written, practical and oral exams
Week #	Semester work			
Week # 8	Target organ toxicity (Hepatotoxicity & Nephrotoxicity)	a2,a3,a4,a5,b1,b2,b3,c1,c3,c4,c5,d1,d3	Lectures and practical training	Written, practical and oral exams
Week#	Target organ toxicity (Nervous system toxicity, Pulmonary toxicity)	a2,a3,a4,a5,b1,b2,b3,c1,c3,c4,c5,d1,d3	Lectures and practical training	Written, practical and oral exams
Week # 10	Heavy metals	a2,a3,a4,a5,b1,b2,b3,c1,c3,c4,c5,d1,d3, d4	Lectures and practical training	Written, practical and oral exams
Week # 11	Heavy metals	a2,a3,a4,a5,b1,b2,b3,c1,c3,c4,c5,d1,d3, d4	Lectures and practical training	Written, practical and oral exams
Week # 12	Free radical toxicity	a2,a3,a4,a5,b1,b2,b3,c1,c2,c3,c4,c5,d1,d2,d3	Lectures and practical training	Written, practical and oral exams
Week # 13	Hazards of radiation	a2,a3,a4,a5,b1,b2,b3,c1,c2,c3,c4,c5,d1,d2,d3, d4	Lectures and practical training	Written, practical and oral exams
Week # 14	Toxicology of Pesticide	a2,a3,a4,a5,b1,b2,b3,c1,c2,c3,c4,c5,d1,d2,d3	Lectures	Written and oral exams
Week # 15	Toxicology of Pesticide	a2,a3,a4,a5,b1,b2,b3,c1,c3,c4,c5,d1,d3	Lectures and brain storming	Written and oral exams

Course coordinator: Dr. Ahmed Mansour Head of department: Dr. Sherin Zakaria