COURSE SPECIFICATIONS

Faculty of Pharmacy

Fifth Year - Second Term

2018-2019

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COURSE SPECIFICATIONS

Industrial Pharmacy -2

Fifth year – second Term 2018-2019

Course specification of Industrial Pharmacy-2

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Pharmaceutics department

Academic year Level: Fifth year/Second term

Date of specification approval: December 2018

B- Basic information:

Title: Industrial pharmacy-2 Code: PC527

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 1 hrs/week

Tutorials: ---

Total: 2.5 hrs/week

C- Professional information:

1-Overall aim of the course

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

- Illustrate the properties and manufacturing of different types of tablets, packaging materials, particle size reduction process and apparatus as well as the requirements for GMP and quality control. Handle, Compound, dispense and label tablets safely and effectively. Apply GMP guidelines in pharmacy practice and interpret experimental results. Interact effectively and work as a member of a team.

2- Intended Learning Outcomes of Industrial pharmacy-2 (ILOs)

A- Kno	owledge and Understanding								
a1	Demonstrate different types of tablets								
a2	Illustrate different method for tablet preparation, coating and								
42	evaluation, different packaging materials.								
	Illustrate different problems associated with tablet coating, outline the								
a3	principle, mechanism and structures of different instruments used in								
	particle size reduction								
a4	Explain advantage and disadvantages of different packaging materials								
ат	and quality control test for packaging materials								
B- Pro	fessional and Practical skills								
b1	Solve different problems associated with tablet preparation and tablet								
01	coating								
b2	Demonstrate different apparatus used in particle size reduction								
C- Inte	ellectual skills								
c1	Differentiate between different techniques and apparatus used for tablet								
CI	preparation, tablet coating and particle size reduction								
c2	Suggest appropriate apparatus for particle size reduction								
c3	Identify advantages and disadvantages of each packaging materials,								
CS	film coat								
D- Ger	neral and Transferable skills								
d1	Work effectively as a member of team.								
d2	Develop computer and presentation skills.								
d3	Develop problem solving and decision making skills.								

D- Contents:

Week	Lecture contents	Practical session						
No.	(2 hrs/lec.)	(1 hr/lab)						
1	- Types, classes of tablets, advantages and additives used in tablet preparation	Different types of tablets						
2	- Manufacturing of tablets	Tablets preparation						
3	- Problems of tablets	Tableting problems						
4	- Evaluation of tablets	Evaluation of tablets						
5	- Tablet coating	Tablets coating						
6	-Film coat defects	Film coat defects						
7	Mid- term exam							
8	- Particle size reduction	Quiz+ Particle size reduction						
9	Particle size reduction-	Particle size reduction + Activity						
10	- Particle size reduction	Particle size reduction + Activity						
11	- Quality control	Particle size reduction + Activity						
12	- Quality control	Quality control						
13	- Packaging	Practical exam						
14	-Packaging							
15	Written exam+ or	ral exam						

E- Teaching and Learning Methods:

• Lectures

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

F- Student Assessment methods:

1-Written exam to assess: a1, a2, a3, a4, c1, c2, c3

2- Activity to assess: d1, d2

3-Mid- term exam a1, a2, a3, a4, c1, c2, c3

4-Practical exam to assess: b1, b2, c1, c2, d3

5-Oral exam to assess: a1, a1, a2, a3, a4, c1, c2, c3

Assessment schedule

Assessment (1): Written exam	Week 15
Assessment (2): Activity	Week 9, 10, 11
Assessment (3): Mid- term exam	Week 7
Assessment (4): Practical exams	Week 13
Assessment (5): Oral exam	Week 15

Weighting of Assessment

Assessment method	Marks	Percentage
Written exam	50	50%
Practical exam and activities	20	20%
Oral exam	15	15%
Midterm exam	10	10%
Activities	5	5%
TOTAL	100	100%

G- Facilities required for teaching and learning:

Black (white) boards, data show.

H- List of References:

1- Course Notes: Student book of Industrial Pharmacy-2 approved by Pharmaceutics department (2019/2020)

2- Essential Books:

- i- Bentley's text book of Pharmaceutics by Rawlins, E. A., 8th ed (2010).
- ii- Ansels Pharmaceutical Dosage forms and drug delivery systems 8/ed, Allen , L .V (2010).

3- Recommended Books

- i- Pharmaceutics: The Science of Dosage Form Design by Aulton, M. E., (2012).
- ii- The theory and Practice of Industrial Pharmacy by Lachman, L., Lieberman, H. A., Kanig, J. L., and Febiger, Philidelphia, USA. (2008).
- iii- Good manufacturing practice for pharmaceuticals, Nally, Joseph.D, Informa Healthcare, (2007).

4- Periodicals and websites:

Journal of pharmaceutical sciences

www.Pubmed.com

www.Sciencedirect.com

Course Coordinators: Prof. Dr. Fakhr El-Din Ghazy

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

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ / 12 / 2018

Matrix I of Industrial Pharmacy-2 course													
		ILOs of industrial pharmacy 2 course											
Course Contents		Knowledge and understanding			Professional and practical skills		Intellectual skills			Transferable and general skills			
	Lectures	a1	a2	a3	a4	b1	b2	c1	c2	c3	d1	d2	d3
1	Types, classes of tablets, advantages and additives used in tablet preparation	X		х									
2	Manufacturing of tablets	A	x	Λ				X					
3	Problems of tablets		X					х					
4	Evaluation of tablets		X					X					
5	Tablet coating		X					X		X	X		
6	Film coat defects			X				X					
7	Mid term	X	X	X	X			X	X	X			
8	Particle size reduction			X				X	X				
9	Particle size reduction			X				x	X				l
10	Particle size reduction			X				X	X				
11	Quality control				X								
12	Quality control				X				X				
13	Packaging				x					x			

14	Packaging				X				X				
15	Written and oral exam	X	X	X	X			Х	X	X			
	Practical session												
1	Different types of tablets	X		X							х	X	х
2	Tablets preparation	A	X	A		X		X			X	X	Х
3	Tableting problems	X					X	X			X	X	Х
4	Evaluation of tablets		X					X			X	X	X
5	Tablets coating		X					x			X	X	Х
6	Film coat defects		A	X				X			X	X	X
7	Midterm	X	х	х	X			X	X	х			
8	Quiz+ Particle size reduction						X		X		X	X	Х
9	Particle size reduction + Activity			X				X		X	X	X	Х
10	Particle size reduction + Activity			X				X		X	X	X	
11	Particle size reduction + Activity			X				X	X	X	x	X	Х
12	Quality control				х				х		х	х	Х
13	Practical exam					Х	X	х	Х				Х

Matrix II of Industrial Pharmacy-2 course

	With A II of Industrial France 2 course											
		NARS	Program	Course	Course content	Sources	Teach	ing and le methods	_	Method of assessment		
		NAKS	ILOS	ILOS	Course content	Sources	Lecture	Practical session	Self learning	written exam	Practical exam	Oral exam
	2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and	A2	a ₁	Types, classes of tablets, advantages and additives used in tablet preparation Film coat defects Particle size reduction	Student book Essential books	x			x		x
		environmental sciences as well as pharmacy practice.		a ₃		Student book Essential books	X			X		X
	2.7	Principles of various instruments and techniques including	A18	a_2	Manufacturing of tablets Problems of tablets Evaluation of tablets Tablet coating	Student book Essential books	x			x		x

	sampling, manufacturing, packaging, labeling, storing and distribution processes in pharmaceutical industry		a ₄	Quality control Packaging	Student book Essential books	x	X	x		x
	Compound, dispense, label, store and distribute medicines effectively and safely.		b1	Different types of tablets Tablets preparation Tableting problems Evaluation of tablets Tablets coating Film coat defects Particle size reduction Quality control	Student book Essential books and practical notes	X				
3.3		В4	U1		Student book Essential books and practical notes		х		х	
			b2		Student book Essential books Internet	X	x			
					Student book Essential books		X		x	
				Manufacturing of	Student book Essential books	X		X		х
	Comprehend and		c1	tablets Problems of tablets	Student book Essential books		X		х	
4.2	apply GLP, GPMP, GSP and	C4		Evaluation of tablets Tablet coating	Student book Essential books	X		X		Х
	GCP guidelines in pharmacy practice.	C4	c2	Film coat defects Particle size reduction	Student book Essential books		X		X	
	•		с3	Quality control Packaging	Student book Essential books Internet	X	X	X		X

					Student book Essential books		X			X	
5.3	Work effectively in a team. D3 And student hook	Practical notes And student book	Х	X		Х	X				
			d1 d2	Activity		Х		X	X		
5.4	Use numeracy, calculation and statistical methods as well as information technology tools.	D5	u2			A	X	A	A	X	
5.10	Implement writing and thinking, problem- solving and decision- making abilities.	D11	d3		Practical notes And student book		X			X	

Course Coordinators: Prof. Dr. Fakhr El-Din Ghazy

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

Pate: 201 / 12 / المقرر من مجلس القسم بتاريخ / 12 / Date: 201 / 12

COURSE SPECIFICATIONS

Phytotherapy -2

Fifth year – second Term 2018-2019

Course Specification of Phytotherapy

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Academic year/Level: Fifth year /Second term

Date of specification approval: 30/9/2019

B- Basic information:

Title: Phytotherapy Code: PG 528

Credit Hours: 3

Lectures: 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

- Describe fundamental knowledge about complementary medicine; in particular herbal medicine and its relation to conventional medicine. In addition, the student will be able to formulate and use herbal medications in some common health problems, and will know its toxicological aspects, regulatory laws of production and forensic pharmacognosy.
- Gain effective presentation skills, teamwork and internet search

2-Intended Learning Outcomes of Phytotherapy

A-	A- Knowledge and Understanding								
a1	Illustrate the principles of alternative medicine (history and forms) and its relation to conventional medicine.								
a2	Outline the principles of herbal medicine preparation and efficacy.								
a3	Summarize the principles of using some herbal medications to relief some common health problems e.g. GIT, cardiovascular, respiratory, urinary, CNS,etc								
a4	Demonstrate principles and approaches about narcotic drugs, nutraceuticals, toxicological aspects of herbal medicines, its concomitant use with conventional medicine, regulations of its production and forensic pharmacognosy.								
a5	Identify pharmacological properties, adverse reactions and contraindications of some herbal medications used in some specific health problems								
B-]	B- Professional and Practical skills								
b1	Diagnose simple health problems e.g. GIT, cardiovascular, respiratory, urinary, CNS,etc.								
b 2	Describe a herbal remedy for treatment of common health problems.								
b 3	Practice patient counselling by using case study.								
C-	Intellectual skills								
c1	Apply knowledge from previously taught pharmacognosy courses in herbal medicine.								
c2	Analyse information using scientific and library based knowledge for using herbal medicine as an alternative medicine.								
D -	General and Transferable skills								
d1	Reprocess information from different sources.								
d2	Work effectively as a member of a team								
d3	Write reports and present it.								
d4	Demonstrate decision making and problem solving skills								

D- Contents:

Week	Lecture (2hrs/week)	Practical session/ activity* (2hrs/week)
No.		
1	-Definition, history and forms of alternative medicine -Herbal medicine versus conventional medicine	- An introduction for use of herbal medicine for treatment of simple health problems.
2	- Herb-drug interaction- Preparation of herbal medications	Activity: Oral presentation for different forms of alternative medicine e.g: Homeopathy, chiropracticetc
3	-Herbal remedies for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation	-Herbal remedies for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation) Activity: Oral presentation for commercially available herbal market preparations used for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation).
4	-Herbal remedies for GIT disorders (intestinal worms, hemorrhoidsetc) - Herbal medications for hepatic disorders	 Herbal remedies used as anthelmintic Herbal remedies used for hemorrhoids Drugs used for hepatic disorders Activity: Oral presentation for commercially available herbal market preparations used for hepatic disorders, hemorrhoids and used as anthelmintic
5	-Herbal medications for renal problems	- Drugs used for renal disorders Activity: Oral presentation for commercially available herbal market preparations used for renal disorders
6	- Herbal medications for CNS disorders	-Drugs used for CNS disorders Activity: Oral presentation for commercially available herbal market preparations used for CNS disorders.
7		Midterm exam
8	-Herbal medications for cardiovascular disorders	- Herbal medications for cardiovascular disorders Activity: Oral presentation for commercially available herbal market preparations used for cardiovascular disorders
9	-Herbal remedies for respiratory tract problems	-Drugs used for cold and other respiratory disorders Activity: Oral presentation for commercially

		available herbal market preparations used for respiratory tract disorders
10	-Herbal medications for	- Herbal medications for diabetes and obesity
	diabetes	Activity: Oral presentation for commercially
	- Herbal medications for obesity	available herbal market preparations used for
		diabetes and obesity
11	-Herbal remedies for	- Herbal drugs used for dermatological use and
	dermatologic use	skeletal disorders
	-Herbal medications for	Activity: Oral presentation for commercially
	skeletal system	available herbal market preparations used for
		dermatological use and skeletal disorders
12	- Nutraceuticals	Final practical exam
	-Narcotic drugs.	
	-Toxicological aspects of herbal medicine	
13	-Regulatory laws for production	Final practical exam
	of herbal remedies	*
	-Forensic Pharmacognosy	
14	Revision	
15	Final written exam	

*Activity:

A group of 3-5 students should collect commercially available herbal products in Egyptian market used to treat certain disease. Each group should submit oral presentation on his report within 5-10 minutes covering main topic e.g. Overview of the plant materials, active ingredients, dosage form, drug interaction, mode of action....etc as well as introduction to the disease.

E- Teaching and Learning Methods:

- Interactive lectures
- Practical sessions
- Case study.
- Role play.
- Self-learning (group discussion, group assignment)
- Teamwork net research.
- Oral presentation skills.

F- Student Assessment Methods:

- 1- Written exam (midterm, final) to assess: a1-5, c1-2.
- 2- Activity to assess: d1-4.
- 3- Practical exam to assess: b1-3, c2-3, d1-4.
- 4- Oral exam to assess: a1-5, c1-2, d4.

Assessment schedule:

Assessment (1): Midterm exam	Week 7
Assessment (2): Activity	Every Week
Assessment (3): Practical exam	Week 12, 13
Assessment (4): Final written exam	Week 15
Assessment (5): Oral exams	Week 15

Weighting of Assessment:

Assessment method	Marks	Percentage
Midterm exam	10	10%
Activity	5	5%
Practical exam	20	20%
Final written exam	50	50%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- For lectures: black (white) board, data show.
- Laboratory equipment: computers and data show.

H- List of References:

1- Course Notes:

Student book of Phytotherapy approved by Pharmacognosy Department (2019).

2- Essential books:

- Andrew C. Herbal Remedies Handbook. 2nd Ed., Published by Dorling Kindersley Ltd., Delhi, 2018
- Lesley B. and Marc C. Herbs and Natural Supplements. 4th Ed., volume 2, Published by Sydney, Edinburg, London & New York, 2015

3- Recommended books:

- Michael H., Joanne B., Jose P. G., Elizabeth M. W., Simon G. Fundamentals of Pharmacognosy and Phytotherapy, 3rd Ed., Published by Elsevier, 2018
- Kuhn M. A. and Winston D. Herbal Therapy Supplements; 2nd Ed. Published by Lippincott, Williams & Wilkins, 2008.

4- Periodicals and websites:

- Fitoterapia, Die Pharmazie , Journal of Natural Products, Phytochemistry ,Planta medica

http://www.elsevier.com/phytochem

http://www.elsevier.com/phytomed

http://www.wiley.co.uk.

http://www.sciencedirect.com

Course Coordinator: Prof. Dr. Assem Mohamed El-

Shazly

Head of Department: Prof. Dr. Amal Amin El-Gendy

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ Date: 30-9-2019

Matrix I of Phytotherapy course

						IL	Os of	f Ph	ytotl	herapy co	urse				
	Course Contents			owle derst	_		Prof and j		ical	Intellectu	al skills		Genera ransfe ski	erabl	
	Lectures	a1	a2	a3	a4	a5	b1	b2	b3	c1	c2	d1	d2	d3	d4
1	-Definition, history and forms of alternative medicine														
1	-Herbal medicine versus conventional medicine	X													
2	- Herb-drug interaction														
2	- Preparation of herbal medications		X												
3	-Herbal remedies for GIT disorders														
3	(mouth disorder, peptic ulcer, diarrhea, constipation			X		X				X	X				
	-Herbal remedies for GIT disorders														
4	(intestinal worms, hemorrhoidsetc)														
	- Herbal medications for hepatic disorders			X		X				X	X				
5	-Herbal medications for cardiovascular disorders			X		X				X	X				
6	-Herbal remedies for respiratory tract problems			x		X				X	X				
7		Mid	term	exam					1		T	1			
8	-Herbal medications for diabetes														
Ů	- Herbal medications for obesity			X		X				X	X				
9	-Herbal medications for renal problems			X		X				X	X				
10	- Herbal medications for CNS disorders			X		X				X	X				
11	-Herbal remedies for dermatologic use														
11	-Herbal medications for skeletal system			X		X				X	X				
12	-Narcotic drugs Nutraceuticals				X										

	-Toxicological aspects of herbal medicine										
13	-Regulatory laws for production of herbal remedies										
13	-Forensic Pharmacognosy		X								
	Practical sessions										
14	- An introduction for use of herbal medicine for treatment of										
14	simple health problems.			x	X	X					
15	Activity: Oral presentation for different forms of alternative										
15	medicine e.g: Homeopathy, chiropracticetc							x	x	X	X
	-Herbal remedies for GIT disorders										
16	(mouth disorder, peptic ulcer, diarrhea, constipation)										
10	Activity: Oral presentation for herbal market preparations used for										
	GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation).			X	X	X		X	X	X	X
	- Herbal remedies used as anthelmintic										
	- Herbal remedies used for hemorrhoids										
17	-Drugs used for hepatic disorders										
	Activity : Oral presentation for herbal market preparations used for										
	hepatic disorders, hemorrhoids and used as anthelmintic			X	X	X		X	X	X	X
	- Herbal medications for cardiovascular disorders										
18	Activity : Oral presentation for herbal market preparations used for										
	cardiovascular disorders			X	X	X		X	X	X	X
10	-Drugs used for cold and other respiratory disorders										
19	Activity : Oral presentation for herbal market preparations used for										
	respiratory tract disorders - Herbal medications for diabetes and obesity			X	X	X		X	X	X	X
20	Activity: Oral presentation for herbal market preparations used fo										
20	1										
	diabetes and obesity			X	X	X		X	X	X	X
21	- Drugs used for renal disorders			X	X	X		X	X	X	X

	Activity : Oral presentation for herbal market preparations used for										
	renal disorders										
	-Drugs used for CNS disorders										
22	Activity : Oral presentation for herbal market preparations used for										
	CNS disorders.			X	X	X		X	X	X	X
	- Herbal drugs used for dermatological use and skeletal disorders										
23	Activity : Oral presentation for herbal market preparations used for										
	dermatological use and skeletal disorders			X	X	X		X	X	X	X
24	Activity										
	Therites							X	X	X	X

				Matrix II of	Phytot	herapy	course					
	tional Academic erence Standards	Program ILOs	Course ILOs	Course contents	Sources	Teac	hing and lea methods	arning	M	ethods of as	sessmen	t
	(NARS)					Lecture	Practical session	Self learning	Written exam	Practical exam	Mid term exam	Oral exam
2.1 5	Underline basis of complementary and alternative medicine	A32	a1 a2	-Definition, history and forms of alternative medicine -Herbal medicine versus conventional medicine - Herb-drug interaction - Preparation of	Stude nt book	X			X		X	х
2.1	Define principles of pharmacy practice (pharmaceutical care and professional		a3	herbal medications -Herbal remedies for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation -Herbal remedies for GIT disorders (intestinal worms,								

pharmacy	A8	hemorrhoidsetc)				
(clinical,						
hospital,		- Herbal				
community),		medications for				
complementary		hepatic disorders				
and alternative		-Herbal medications				
medicine, drug		for cardiovascular				
and poison		disorders				
information,		-Herbal remedies for				
pharmacy laws		respiratory tract				
and		problems				
regulations).		-Herbal medications				
,		for diabetes				
		- Herbal medications				
		for obesity				
		-Herbal medications				
		for renal problems				
		- Herbal medications				
		for CNS disorders				
		-Herbal remedies for				
		dermatologic use				
		-Herbal medications				
		for skeletal system				

		a4	-Narcotic drugs.				
			- Nutraceuticals				
			-Toxicological				
			aspects of herbal				
			medicine				
			-Regulatory laws				
			for production of				
			herbal remedies				
			-Forensic				
			Pharmacognosy				

3.5	Select medicines for a given disease based on its etiology, pathphysiology, possible interactions and age-related factors	B8	b1 b2	- An introduction for use of herbal medicine for treatment of simple health problems. -Herbal remedies for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation) - Herbal remedies used as anthelmintic - Herbal remedies used for hemorrhoids -Drugs used for hepatic disorders - Herbal medications for cardiovascular disorders -Drugs used for cold	practical note		X			X		
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3.10	Advise patients and other health care professionals about safe and proper use of medicines.	B17	b3	and other respiratory disorders - Herbal medications for diabetes and obesity				
				-Drugs used for renal disorders -Drugs used for CNS disorders - Herbal drugs used for dermatological use and skeletal disorders				

4	Integrate the knowledge of physiology, pharmacology and toxic profile for proper selection of OTC and prescribed drugs for the management of different diseases according to their pathogenesis	C14	c1	- Herb-drug interaction - Preparation of herbal medications -Herbal remedies for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation -Herbal remedies for GIT disorders (intestinal worms, hemorrhoidsetc) - Herbal medications for hepatic disorders -Herbal medications for cardiovascular disorders	Stude nt book	X		X	X	X
				for cardiovascular						

Demonstrate professional competence in internet use and gathering D2 D2 Internet Internet Use and gathering Information from different sources to improve professional abilities Internet Intern	4. 4	Analyze a wide range of information including both scientific and librarybased material in pharmacy practice	C19	c2	problems -Herbal medications for diabetes - Herbal medications for obesity -Herbal medications for renal problems - Herbal medications for CNS disorders -Herbal remedies for dermatologic use -Herbal medications for skeletal system					
5.3 Implement tasks D3 d2		professional competence in internet use and gathering information from different sources to improve professional abilities			Oral presentation for herbal medications used for treatment of common health	Intern et				

	as a member of			and				
	a team			recom				
	Implement			m-				
5.9	writing and	D10	d3	ended				
5.7	presentation	D 10	us	books.				
	skills.							
	Develop critical							
	thinking,	D11						
5.1	problem-		44					
0	solving and		d4					
	decision-							
	making abilities							

Course Coordinator: Prof. Dr. Assem Mohamed Mohamed El-Shazly

Head of Department: Prof. Dr. Amal Amin El-Gendy

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ Date: 30-9-2019

COURSE SPECIFICATIONS

Quality Control

Fifth year – second Term 2018-2019

COURSE SPECIFICATIONS

Drug Design

Fifth year – second Term 2018-2019

Course specification of Drug Design

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Medicinal chemistry department

Academic year Level: Fifth year/Second term

Date of specification approval: December 2019

B- Basic information:

Title: Drug Design Code: MC524

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall aim of the course

• On completion of the course, students will be able to illustrate hydrophobic, electronic & steric properties of drugs, outline drug metabolism, describe computer-aided tools used in drug design, identify different proteins as drug target, construct a research study and analyze the results and work effectively as a member of a team.

2-Intended Learning Outcomes of Drug Design (ILOs):

A- Knowledge and Understanding							
a1	Demonstrate hydrophobic, electronic & steric properties of drugs.						
a2	Identify different drug sources, drug discovery, drug targets, QSAR and combinatorial synthesis of drug.						
a3	Outline different phases involved in the development of new drugs						
a4	Describe the drug metabolism and the concept of drug latentiation.						
B- Professional and Practical skills							
b1	Predict the physical, chemical properties and biological activity of organic compounds based on molecular structure and drug-design theories.						
b2	Draw chemical structures using Chem Draw Program and analyze the results.						
b3	Interpret the protein-ligand interaction in 2D and 3D poses utilizing MOE program.						
C- Intellectual skills							
c1	Identify and quantify physico-chemical properties of pharmaceutical preparation.						
c2	Manipulate the basic concepts of drug design, development and targeting.						
c 3	Assess drug receptor interactions and the concerning theories.						
D- General and Transferable skills							
d1	Develop the skills required for continued self-professional development and self learning.						
d2	Work effectively as a member of a team.						
d3	Generate effective and reasonable solutions for rising problems based on the available information.						
d4	Develop and enhance rational thinking problem solving and decision making skills						

D- Contents:

Week No.	Lecture (2hrs/week)	Practical session (2hrs/week)
1	Drug discovery and drug	Theoretical Introduction to drug
_	development - drug targets-	design
	identifying a bioassay	
2	Finding a lead compound -	Henderson–Hasselbalch Equation
	screening of natural products	Identify the Functional Groups,
	and synthetic' banks'	and Predict the Water Solubility
3	Structure determination and	Molecules Building using
	target-orientated drug design	Chemdraw
4		Activity (Problem solving)
4	Application of drug	MOE: Molecules Building and minimization
	development strategy in discovering new drugs	
5	Bioisosterism	MOE: Steric measurements
2	Dioisosterism	Ligand surface mapping & flexible
		alignment
6	Quantitative structure-activity	MOE: Ligand Preparation
	relationships	_
7	Midte	rm exam
8	Electronic effects (σ), Hansch	MOE: Database Creation
	equation	
9	The Craig plot, The Topliss	MOE: Protein Preparation (Part I)
	scheme	
10	Drug-receptor interactions	MOE: Protein Preparation (Part II)
	Forces involved in drug	Activity (case study)
11	receptor interaction	MOE De L'ex Deserve
11	Enzyme as drug target	MOE: Docking Process
12	Receptor as drug target	MOE: Ligand interaction
	Nucleic acid as drug target and	
13	other minor target Prodrugs and drug latentiation	-Practical exam
13	Prodrugs and drug latentiation Bioprecursor prodrugs,	-i i acticai exam
	chemical delivery systems	
14	Combinatorial synthesis and	-Practical exam
	computer-aided design	
15	-Final written exam	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Self -learning (Internet, report writing)
- Problem solving/ Case study.

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4, c2

2- Activity to assess d1, d2, d3

3- Practical exam to assess b1, b2, b3, c1, c3, d3, d4

4- Oral exam to assess a1, a1, a3, a4, c2

Assessment schedule:

Assessment (1): final Written exam	Week 15
Assessment (2): mid-term exam	Week 7
Assessment (3): Activity (problem solving and	Week 3,10
case study)	
Assessment (4): Practical exams	Week 13,14
Assessment (5): Oral exam	Week 15

Weighting of Assessment:

Assessment method	Marks	Percentage
Final written exam	50	50%
Midterm exam	10	10%
Activities	5	5%
Practical exam	20	20%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- 1. For lectures: Black (white) boards, data show.
- 2. For Labs:
 - Drug design Lab

- Chem. Office program to help the students to draw the structures of different drugs
- Other learning material such as computer-based programs/CD, professional standards or regulations and software.

H- List of References:

1- Course Notes:

- Practical notes of drug design approved by medicinal chemistry department 2019/2020.

2- Essential Books:

- -The organic chemistry of drug design and drug action, 3rd edition, Richard B. Silverman and Mark W. Holladay (2015).
- -Wilson & Griswold's Textbook of Organic: Medicinal and Pharmaceutical Chemistry; Wilson, Charles Owens; Beale, John Marlowe; Block, John H.; Block, John H.; Griswold, Ole; Wiley-Interscience (2011).
- -Foye's Principles of Medicinal Chemistry; Williams, David A., William O. Foye, and Thomas L. Lemke; Lippincott Williams and Wilkins (2016).
- -B.p. &U.S Pharmacopia (1988-2017)

3- Recommended books

i- An Introduction to Medicinal Chemistry; Patrick, Graham L, Oxford (2017)

4- Periodicals, Web Sites, etc

http://www.rcsb.org

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

http://www.ekb.eg

http://journals.tubitak.gov.tr/chem/index.php

http://www.pharmacopoeia.co.uk/

www.Pubmed.Com

www.sciencedirect.com

- Course Coordinator: Prof. Dr. Mohamed Elhusseny Elsadek
- Head of department: Prof.Dr. Kamel A. Metwally
- تم مناقشة واعتماد توصيف المقرر من مجلس القسم المقرر بتاريخ :Date

Matrix I of Drug Design Course Course Contents ILOs of Drug Design course Knowledge and Professional General and Intellectual transferable skills understanding and practical skills skills **b1 b2 b3** d1 d2 Lectures **c1 c2 c3 d3** d4a1 **a2 a3 a4** Drug discovery and drug development - drug targets-X X identifying a bioassay Finding a lead compound -screening of natural products and X X synthetic' banks' Structure determination and target-orientated drug design X X Application of drug development strategy in discovering new X X X drugs Bioisosterism X Quantitative structure-activity relationships X Electronic effects (σ), Hansch equation The Craig plot, The Topliss scheme X Drug-receptor interactions X Forces involved in drug receptor interaction Enzyme as drug target X X X Receptor as drug target 11 X X X Nucleic acid as drug target and other minor target X X X Prodrugs and drug latentiation X Bioprecursor prodrugs, chemical delivery systems Combinatorial synthesis and computer-aided design X X

	Practical sessions										
1	Theoretical Introduction to drug design		Х		X						
2	Henderson–Hasselbalch Equation Identify the Functional Groups, and Predict the Water Solubility		X			Х					
3	Molecules Building using Chemdraw			X							
4	MOE: Molecules Building and minimization			X	X						
5	MOE: Steric measurements Ligand surface mapping & flexible alignment				X		X				Х
6	MOE: Ligand Preparation				X						
7	MOE: Database Creation				X						
8	MOE: Protein Preparation (Part I)				X						
9	MOE: Protein Preparation (Part II)				X						
10	MOE: Docking Process				X						
11	MOE: Ligand interaction				Х		X				Х
12	Activities							X	X	X	

Matrix II of Drug Design course

	ional Academic rence Standards	Program Course Course contents ILOs ILOs		Source s	Teaching and learning methods			Methods of assessment			
	(NARS)					Lectur e	Prac tical sessi on	Reports & case study	Written exam	Practical exam	Oral exam
2.2	Physical-chemical properties of various substances used in	[A9]	a1	Quantitative structure- activity relationships	student book	Х			Х		х
	preparation of medicines including			Electronic effects (σ), Hansch equation	student book	х			Х		X
	inactive and active ingredients as well as biotechnology and radio- labeled products.			The Craig plot, The Topliss scheme	student book	х			х		х
2.5	Principles of drug design, development	[A14]	a2	Quantitative structure- activity relationships	student book	X			X		X
	and synthesis.			Electronic effects (σ), Hansch equation The Craig plot, The Topliss scheme Drug discovery and drug development - drug targets- identifying a bioassay Finding a lead compound					х		X

		1	1		ı	1	ı		1	
			-screening of natural							
			products and synthetic'							
			banks'							
			Structure determination							
			and target-orientated drug							
			design							
			Application of drug							
			development strategy in							
			discovering new drugs							
			Enzyme as drug target							
			Receptor as drug target							
			Nucleic acid as drug							
			target and other minor							
			target Prodrugs and drug							
			latentiation							
			Bioprecursor prodrugs,							
			chemical delivery systems							
			Combinatorial synthesis							
			and computer-aided							
			design							
	[A15]	a3	Quantitative structure-	student	X			X		X
	[1113]	u.s	activity relationships	book	A.			Α		11
			Electronic effects (σ) ,	2 2 2 2 2						
			Hansch equation							
			The Craig plot, The							
			Topliss scheme							
				student	37			¥7		**
			Drug discovery and drug	book	X			X		X
			development - drug	JOOK						
			targets- identifying a							
			bioassay							
			Finding a lead compound							
			-screening of natural			ĺ			1	

				products and synthetic' banks' Structure determination and target-orientated drug design					
				Application of drug development strategy in discovering new drugs Bioisosterism					
				Enzyme as drug target Receptor as drug target Nucleic acid as drug target and other minor target Prodrugs and drug latentiation					
				Bioprecursor prodrugs, chemical delivery systems					
2.8	Principles of pharmacokinetics and biopharmaceutics with applications in therapeutic drug monitoring, dose modification and bioequivalence studies.	[A19]	a4	Prodrugs and drug latentiation Bioprecursor prodrugs, chemical delivery systems	student book	X		X	X

3.11	Conduct research studies and analyze the results.	[B19]	b1	Theoretical Introduction to drug design	Practical notebook	X	Х	
				Henderson–Hasselbalch Equation Identify the Functional Groups, and Predict the Water Solubility	Practical notes	x	х	
			b2	Molecules Building using Chemdraw	Practical notes	x	X	
				MOE: Molecules Building and minimization	Practical notes	х	X	
			b3	Theoretical Introduction to drug design Molecules Building using Chemdraw MOE: Molecules Building and minimization MOE: Steric measurements Ligand surface mapping & flexible alignment MOE: Ligand Preparation MOE: Database Creation MOE: Protein Preparation MOE: Docking Process	Practical notes	x	X	

				MOE: Ligand interaction							
				Activity	Practical notes/Inter net		X	X		X	
4.3	Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations.	[C6]	c1	Henderson–Hasselbalch Equation Identify the Functional Groups, and Predict the Water Solubility	Practical notes		х			х	
4.6	Apply the principles of bio – informatics and computer –aided tools in drug design.	[C11]	c2	Application of drug development strategy in discovering new drugs Drug-receptor interactions Forces involved in drug receptor interaction Enzyme as drug target Receptor as drug target Nucleic acid as drug target and other minor target	student book	X			х		х

4.11	Assess drug interactions, ADRs and pharmacovigilance.	[C16]	с3	MOE: Steric measurements Ligand surface mapping & flexible alignment MOE: Ligand interaction	Practical notes/ internet/ess ential books	x	Х	Х	
5.5	Practice independent learning needed for continuous professional development.	[D6]	d1	Activity	Practical notes/ internet/ess ential books	X	Х	Х	
5.3	Work effectively in a team.	[D3]	d2	Activity	Practical notes/ internet/ess ential books	X	х	х	
5.10	Implement writing and thinking, problem solving and decision making skills	D11	d3 d4	MOE: Steric measurements Ligand surface mapping & flexible alignment MOE: Ligand interaction	Practical notes/ internet/ess ential books	Х	х	х	

COURSE SPECIFICATIONS

Production of Raw Materials

Fifth year – second Term 2018-2019

Course Specification of Production of drug raw materials for (2019/2020)

A- Course specifications:

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

Major or Minor element of programs: Major

• Department offering the course: Pharm. Organic

chemistry

Academic year Level: fifth year /Second term

Date of specification approval:

B- Basic information:

Title: Production of drug raw materials Code:POC314

Lectures: 2 hrs/week

Practical: 2 hrs/week

• Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1- Overall aim of the course

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

- Illustrate the basic principles of protein, lipids, nucleotides, polymer chemistry
- Illustrate the principles of heterocyclic chemistry including pharmaceutically active drugs
- Illustrate different synthetic routes of heterocyclic nuclei as well as peptide and polymer synthesis
- Outline laboratory synthesis of different pharmaceutically active heterocyclic nuclei such as pyrazole, imidazole, quinoline and triazole.
- Adopt ethical, legal chemistry lab safety guidelines in dealing with chemicals and chemistry instruments.

2- Intended Learning Outcomes

Kno	owledge and Understanding
a1	Illustrate the principles of proteins, lipids, nucleosides, nucleotides and polymers chemistry.
a2	Illustrate the basic principles of bioinformatics as an advanced tool for bioscience related discplines
а3	outline different synthetic pathways for pharmaceutical heterocyclic compounds including commercially available drugs
Pro	fessional and Practical skills
b1	Handle basic laboratory equipments and chemicals effectively and safely.
b2	synthesize different pharmaceutically active nuclei including pyrazole, imidazole, triazole, quinoline derivatives.
Inte	llectual skills
c1	Suggest appropriate methods of synthesis of different heterocyclic compounds as well as peptides and polymer synthesis
c2	Adopt principles of bioinformatics as an advanced tool applied in bioscience and drug design related disciplines
Ger	neral and Transferable skills
d1	Implement tasks as a team member with other students in the lab
d2	Gain experience in data base mining and bioinformatics online resources
d3	Adopt ethical, legal chemistry labs safety guidelines
d4	Organize time and put plan
d5	Implement writing skills through lab reports and discussion of results

3- Course Contents

Weeks	Lecture contents (2hrs/week.)	Practical session (2 hrs/lab)
First week	AMINO ACIDS : Classification and nomenclature	Laboratory safety measuresSynthesis of Benzotriazole
Second week	AMINO ACIDS : Peptide synthesis	 Purification/crystalizati on of Benzotriazole
Third week	LIPIDS: Fatty acids	 Synthesis of benzoimidazole Activity (internet search)
Fourth week	NUCLEOSIDES , NUCLEOTIDES	 Purification/crystalizati on of Benzoimidazole
Fifth week	NUCLEIC ACIDS	 Synthesis of 3,5- dimethyl pyrazol
Sixth week	SYNTHETIC POLYMERS	Purification/crystalizati on of 3,5-dimethyl pyrazol
Seventh week	Midterm exam	
Eighth week	Bioinformatics: Principles	Bioinformatic lab
Ninth week	Bioinformatics: applications	Bioinformatics lab
Tenth week	HETEROCYCLIC CHEMISTRY Classification of heterocyclic compounds, nomenclature	 Synthesis of quinazoline dione Activity (bioinformatic report)
Eleventh week	HETEROCYCLIC CHEMISTRY: five membered rings	Purification/crystalizati on of quinazoline dione
Twelfth week	HETEROCYCLIC CHEMISTRY: Five-membered heterocyclic rings with two heteroatoms	Virtual synthesis lab
Thirteenth week	HETEROCYCLIC CHEMISTRY: six-membered heterocyclic rings	Final Practical exam
Fourteenth week	HETEROCYCLIC CHEMISTRY: six-membered heterocyclic rings with two nitrogen atoms	•

Fifteenth week	Final exam	•
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Teaching and Learning Methods:

- Lectures
- Practical session
- Self learning (Internet search....)

Student Assessment methods:

• Periodical exam to assess: a1, a3, c1

• Written exams to assess: a1, a2, a3, c1, c2

• Practical exams to assess: b1, b2, d3, d4

Oral exam to assess: a1, a2, a3, c1, c2

• Activities to assess: c2, d2, d5

Assessment schedule

Assessment (1): Written exams	Week 15
Assessment (2): Practical exams	Week 13
Assessment (3): Oral exams	Week 15
Assessment (4): Activity	Week 3,10
Assessment (5): Periodical exams	Week7

Weighting of Assessment

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

Facilities required for teaching and learning:

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

- Course Coordinators: Prof. Dr/ Said A. H. El-Feky
- **Head of Department:** Prof. Dr. Hanan Abdel-Razik Abdel-Fattah
- Date:

	Matrix I of Produ	ıctio	n of d	lrug	raw m	ateri	als C	ours	e				
	Course Contents		IL	Os of	Produ	ction	of dru	ıg raw	y mat	erials	cour	se	
			owledge derstane		ai prac	ssional nd etical ills		ectual ills	Ge	eneral a	and trai skills	nsferab	le
	Lectures	a1	a2	a3	b1	b2	c1	c2	d1	d2	d3	d4	d5
1	AMINO ACIDS: Classification and nomenclature	X											
2	AMINO ACIDS : Peptide synthesis	X					X						
3	LIPIDS: Fatty acids	X											
4	NUCLEOSIDES , NUCLEOTIDES	X					X						
5	NUCLEIC ACIDS	X					Х						
6	SYNTHETIC POLYMERS	X					X						
7	Bioinformatics: Principles		X					X					
8	Bioinformatics: applications		X					X					
9	HETEROCYCLIC CHEMISTRY Classification of heterocyclic compounds, nomenclature			X			X						
10	HETEROCYCLIC CHEMISTRY: five membered rings			X			X						
11	HETEROCYCLIC CHEMISTRY: Five-membered heterocyclic rings with two heteroatoms			X			X						
12	HETEROCYCLIC CHEMISTRY: six-membered heterocyclic rings			X			X						
13	HETEROCYCLIC CHEMISTRY: six-membered heterocyclic rings with two nitrogen atoms			X			Х						

	Practical sessions									
1	Laboratory safety measuresSynthesis of Benzotriazole		Х	X		X		X		
2	Purification/crystalization of Benzotriazole		X	X		X		X		
3	Synthesis of benzoimidazole		Х	X		X		X		
4	Purification/crystalization of Benzoimidazole		Х	X		X		X		
5	• Synthesis of 3,5-dimethyl pyrazol		X	X		X		X		
6	• Purification/crystalization of 3,5-dimethyl pyrazol		Х	X		X		X		
7	Bioinformatic lab	х			X	X	X			
8	Synthesis of quinazoline dione		X	X		X		X		
9	• Purification/crystalization of quinazoline dione		Х	X		X		X		
10	Virtual synthesis lab	X			X	X	X			
11	Activity (internet search)					X	X		X	X
12	Activity (bioinformatic report)				_	X	X		X	X

Matrix II of Production of drug raw materials course

	ional Academic rence Standards	Program ILOs	Course ILOs	Course contents	Source s		aching ning m	g and ethods		lethods of ssessment	
	(NARS)					Lectur e	Prac tical sessi on	Reports & case study	Written exam	Practical exam	Oral exam
2.2	Physical-chemical properties of various	[A9]	a1	AMINO ACIDS : Classification and	student book	х			X		Х
	substances used in preparation of			nomenclature AMINO ACIDS : Peptide synthesis	student book	X			Х		Х
	medicines including inactive and active ingredients as well as biotechnology and radio- labeled products.			LIPIDS: Fatty acids NUCLEOSIDES , NUCLEOTIDES NUCLEIC ACIDS SYNTHETIC POLYMERS	student book	x			X		х
2.5	Principles of drug design, development	[A14]	a2	Bioinformatics: Principles Bioinformatics:	student book	х			X		X
	and synthesis.			applications HETEROCYCLIC CHEMISTRY					X		X
		[A15]	a3	Classification of heterocyclic compounds,	student book	Х			Х		X
				nomenclature HETEROCYCLIC CHEMISTRY: five	student book	X			Х		Х

				membered rings HETEROCYCLIC CHEMISTRY: Five- membered heterocyclic rings with two heteroatoms HETEROCYCLIC CHEMISTRY: six- membered heterocyclic rings HETEROCYCLIC CHEMISTRY: six- membered heterocyclic rings with two nitrogen atoms					
3.2	Handle and dispose chemicals and pharmaceutical preparations safely.	B2	b1	 Laboratory safety measures Synthesis of Benzotriazole 	Practical notebook	X		X	
3.4	Extract, isolate, synthesize, purify, identify, and /or standardize active substances from different origins.	В7	B2	Purification/crystali zation of Benzotriazole					

				quinazoline dione • Purification/crystali zation of quinazoline dione						
4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	[C10]	c1	Laboratory safety measures Synthesis of Benzotriazole Purification/crystali zation of Benzotriazole Synthesis of benzoimidazole Purification/crystali zation of Benzoimidazole Synthesis of 3,5-dimethyl pyrazol Purification/crystali zation of 3,5-dimethyl pyrazol Synthesis of quinazoline dione Purification/crystali zation of quinazoline dione	Practical notes		x		x	
4.6	Apply the principles of bio – informatics and computer –aided tools in drug design.	[C11]	c2	Bioinformatic lab Virtual synthesis lab	student book	х		х		х

5.3	Work effectively in a team.	[D3]	d1	Laboratory safety measures Synthesis of Benzotriazole Purification/crystali zation of Benzotriazole Synthesis of benzoimidazole Purification/crystali zation of Benzoimidazole Synthesis of 3,5-dimethyl pyrazol Purification/crystali zation of 3,5-dimethyl pyrazol Bioinformatic lab Synthesis of quinazoline dione Purification/crystali zation of quinazoline dione Purification/crystali zation of quinazoline dione Virtual synthesis lab Activity (internet search) Activity	Practical notes/ internet/ess ential books		X	X	X	
				• Activity (bioinformatic report)						
5.4	Use numeracy, calculation and statistical methods as well as information technology tools.	D5	d2	Virtual synthesis lab		Х	X			

5.7	Adopt ethical, sales and safety guidelines	D7	d3	Laboratory safety measures Synthesis of Benzotriazole Purification/crystali zation of Benzotriazole Synthesis of benzoimidazole Purification/crystali zation of Benzoimidazole Synthesis of 3,5-dimethyl pyrazol Purification/crystali zation of 3,5-dimethyl pyrazol Synthesis of 2,5-dimethyl pyrazol Synthesis of quinazoline dione	Practical notes/ internet/ess ential books	x	X	x	
5.8	Demonstrate creativity and time management abilities.	D9	d4	Activity (internet search)Activity	Internet		Х		
5.9	Implement writing and presentation skills.	D10	d5	(bioinformatic report)			X		

COURSE SPECIFICATIONS

Clinical Nutrition

Fifth Year- Elective Courses 2018-2019

Course Specifications of Clinical Nutrition 2018-2019

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Biochemistry Department

Academic year/Level: 2018-2019, Fifth year/Second term

Date of specification approval: 27/8/2018

B- Basic information:

Title: Clinical Nutrition Code: BC524

Credit Hours:

• Lectures : 2 h/week

• Practical: 2 h/week

• Tutorials: ---

• Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to explain the principles of clinical nutrition, pathophysiology, diet therapy and management of different diseases.

2-Intended Learning Outcomes of Clinical Nutrition (ILOs):

A-]	Knowledge and Understanding
a1	Outline the principles of clinical nutrition and types of nutrients.
a2	Illustrate the body energetics, electrolytes, pH in health and disease state.
a3	Demonstrate the etiology and clinical features of obesity, diabetes, hypertension, cardiovascular diseases, electrolytes and acid base imbalances.
a4	Discuss the principles of diet therapy and management of different diseases.
a5	Illustrate drug-food interaction and food allergies
B- I	Professional and Practical skills
b1	Specify therapeutic and dietary interventions of obesity, diabetes, hypertension, cardiovascular diseases, electrolytes and acid base imbalances.
b2	Recommend laboratory tests for diagnosis of different diseases.
b3	Advise patients about balanced diet to promote the efficiency of medication.
C- I	Intellectual skills
c1	Suggest life style modifications to prevent obesity, diabetes, hypertension, cardiovascular diseases, electrolytes and acid base imbalances.
c2	Select the appropriate drugs and dietary regimens for various disease conditions.
D- (General and Transferable skills
d1	Develop communications skills with public, patients and other health care professionals.
d2	Work effectively as a member of a team.
d3	Use numeracy and computation in determination of body mass index, body weight and atherogenic index.
d4	Practice independent learning needed for continuous professional development.
d5	Write and present reports.
d6	Implement critical thinking and decision making skills.

D- Contents:

Week No.	Lecture (2 h/ week)	Practical session (2 h/week)
1	- Types of nutrients of balanced diet (macronutrients, micronutrients)	
2	Energy requirement and energy expenditureDiet and therapyNutritional assessment and food pyramids	ObesityCase studies for obesity
3	- Obesity (Definition, assessment, factors affecting obesity)	Determination of body mass indexSuggestion of life style modification
4	Management of obesityDrugs of choice for treatment of obesity	Metabolic syndromeCase studyCalculation of atherogenic index
5	 Diabetes mellitus (DM) Nutrition therapy and recommendation for DM Drug of choice for treatment of DM 	- Activity (report) Nutrition and anemia
6	 Definition and types of cardiovascular diseases (CVD) Risk factors for CVD Drug of choice for treatment of CVD 	- Diabetes - Case study
7	Midterm exam	
8	 - Management of CVD - Diet for hypertensive patients - Drugs of choice for treatment of hypertension 	ElectrolytesCase study for electrolytes imbalance
9	Electrolytes importanceSodium (functions, homeostasis)	- Case study for acid base imbalance
10	-Sodium imbalances: Hypernatremia (signs, symptoms, Pathophysiology, diagnosis, treatment, management) Hyponatremia (signs, symptoms, pathophysiology, diagnosis, treatment, management)	- Case study for hyoertension
11	- Potassium imbalances (hyperkalemia, hypokalemia)	- Case study for myocardial infarction
12	- Calcium imbalances (hypercalcemia,	- Collective case studies

	hypocalcemia)	
	- Magnesium imbalances (hypermagnesemia,	
	hypomagnesemia)	
	- The body and pH	- Activity (report)
	- pH control (control of acids, control of	Nutrition and pregnancy
13	bases)	
13	- Acidosis (respiratory acidosis, metabolic	
	acidosis, signs, symptoms, compensation,	
	treatment)	
	- Alkalosis (respiratory alkalosis, metabolic	Practical exam
14	alkalosis, signs, symptoms, compensation,	
	treatment)	
15	- Final exam	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Case study
- Self learning (activity, reports, internet search, group discussion...) about nutrition and anemia and nutrition and pregnancy.

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4,a5, c1, c2, d3, d6

2- Practical exam to assess b1, b2, b3, d1, d2, d3, d6

3- Activities to assess d4, d5

Assessment schedule:

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

Weighing of Assessment:

Assessment method	Marks	Percentage
Final Written exam	50	50%
Practical exam	20	20%
Activity	5	5%
Midterm exam	10	10%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

• Black (white) board, Data show, laboratory equipments and chemicals.

H- List of References:

1- Course Notes:

- Student book of Clinical Nutrition approved by biochemistry department 2018-2019.
- Practical notes of Clinical Nutrition approved by biochemistry department 2018-2019.

2- Essential books:

- Advanced Human Nutrition, Denis M Medeiros, Robert E.C. Wildman, 4th edition, 2018
- Public health nutrition, Buttriss, Judith; Kearney, John M.; Lanham-New, Susan; Welch, Ailsa, 2018
- Food and Nutrition: What Everyone Needs to Know, P. K. Newby, 2018

3- Recommended books:

• Integrative Nutrition: A Whole-Life Approach to Health and Happines, Joshua Rosenthal, 2018

- Nutrition in the prevention and treatment of abdominal obesity, Ronald Watson, 2018
- Nutrition in Lifestyle Medicine, James M. Rippe, 2017

4- Periodicals and websites:

- Egyptian J. of biochem. and molecular biology.
- British J. of nutrition
- Arab J. of Laboratory Medicine,
- J. of Cardiovascular diseases.
- www.Pubmed.Com

• www.sciencedirect.com.

Course Coordinators: Prof. Dr. Hoda Elsayed Head of Department: Prof. Dr. Sahar Elswefy

تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ 27-8-8-2018

	Matrix I of Clinical Nutrition Course																
		ILOs of Clinical Nutrition Course															
	Course Contents			Knowledge and understanding				Professional and practical skills		Intellectual skills		General and transferable skills					
						_						14	10		7.4	7.5	
	Lectures	a1	a2	a3	a4	a5	b1	b2	b3	c1	c2	d1	d2	d3	d4	d5	d6
1	Types of nutrients of balanced diet (macronutrients, micronutrients)	X				X											
2	Energy requirement and energy expenditure- Diet and therapy- Nutritional assessment and food pyramids		X		X					X				X			x
3	Obesity (Definition, assessment, factors affecting obesity)			X										x			
4	Management of obesity- Drugs of choice for treatment of obesity				X					X	x						
5	Diabetes mellitus (DM)-Nutrition therapy and recommendation for DM- Drug of choice for treatment of DM			X	X					X	x						
6	Definition and types of cardiovascular diseases (CVD)- Risk factors for CVD- Drug of choice for treatment of CVD			X	X						X						
7	Management of CVD- Diet for hypertensive patients- Drugs of choice for treatment of hypertension				X					X	X						
8	Flectrolytes importance- Sodium (functions		X														
9	Sodium imbalances: Hypernatremia (signs, symptoms, pathophysiology)- Hyponatremia (signs, symptoms, pathophysiology, diagnosis, treatment, management)		x	X	х					X	X						

10	Potassium imbalances (hyperkalemia, hypokalemia)		X	X		[
10			Λ	Λ												
11	Calcium imbalances (hypercalcemia, hypocalcemia)- Magnesium imbalances (hypermagnesemia, hypomagnesemia)		X	X												
12	The body and pH- pH control (control of acids, control of bases)		X													
13	Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms, compensation, treatment)		X	X	x				X	X						
14	Alkalosis (respiratory alkalosis, metabolic alkalosis, signs, symptoms, compensation, treatment)		X	X	X				X	X						
15	Revision- Open discussion													X		
	Practical sessions															
1	Introduction to clinical nutrition Calculation of BMR - TEE					X							X			
2	Obesity and cases						X	X					X			X
3	Determination of BMI Suggestion of life style modification						X	X					X			
4	Metabolic syndrome and case study Calculation of atherogenic index						X	X					X			
5	Activity (report)										X	X		X	X	
6	Diabetes and case study						X	X					X			
7	Electrolyte and case study						X	X					X			
8	Case study for acid base imbalance						X	X					X			
9	Case study for hypertension						X	X					X			X
10	Case study for myocardial infarction						X	X					X			X
11	Collective case study						X	X					X			X
12	Revision					X	X	X			X	X	X			X
13	Activity (Report)													X	X	

Matrix II of Clinical Nutrition Course

A	National Academic Reference	Program	Course	Course contents	Sources	Teach	ing and lo	_	Method of assessment				
Standards (NARS)		ILOs	ILOs			Lecture	Practical session	Self learning	Written exam	Practical exam	Periodical exam	Oral exam	
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A7 A8	al	Types of nutrients of balanced diet (macronutrients, micronutrients)	Student book Essential books	x			x		x	x	
2.11	Principles of body function in health and disease states as well as basis of	A24 A25	a2	Energy requirement and energy expenditure- Diet and therapy- Nutritional assessment and food pyramids	Student book Essential books	x			x		x	х	

genomic and different biochemical pathways regarding their correlation with different		Electrolytes importance- Sodium (functions, homeostasis)	Student book Essential books	x		x	x	x
diseases.		Sodium imbalances: Hypernatremia (signs, symptoms, pathophysiology)- Hyponatremia (signs, symptoms, pathophysiology, diagnosis, treatment, management)	Student book Essential books	X		X	X	X
		Potassium imbalances (hyperkalemia, hypokalemia)	Student book Essential books	Х		X	х	х
		Calcium imbalances (hypercalcemia, hypocalcemia)- Magnesium imbalances (hypermagnesemia, hypomagnesemia)	Student book Essential books	x		X	x	x
		The body and pH- pH control (control of acids, control of bases)	Student book Essential books	X		x	х	x

				Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms, compensation, treatment)	Student book Essential books	x		x	х	х
				Alkalosis (respiratory alkalosis, metabolic alkalosis , signs, symptoms, compensation, treatment)	Student book Essential books	X		X	x	x
	Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmacotherapeutic approaches			Obesity (Definition, assessment, factors affecting obesity)	Student book Essential books	x		X		x
			a3	Diabetes mellitus (DM)- Nutrition therapy and recommendation for DM- Drug of choice for treatment of DM	Student book Essential books Recommended books Internet	X	X	x		x
2.12		A27 A28		Definition and types of cardiovascular diseases (CVD)- Risk factors for CVD- Drug of choice for treatment of CVD	Student book Essential books Recommended books Internet	x	X	x		x
				Sodium imbalances: Hypernatremia (signs, symptoms, pathophysiology)- Hyponatremia (signs, symptoms, pathophysiology, diagnosis, treatment,	Student book Essential books Recommended books Internet	х	x	x		х

				management)						
				Potassium imbalances (hyperkalemia, hypokalemia)	Student book Essential books	X		X		x
				Calcium imbalances (hypercalcemia, hypocalcemia)- Magnesium imbalances (hypermagnesemia, hypomagnesemia)	Student book Essential books	x		x		x
				Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms, compensation, treatment)	Student book Essential books Recommended books Internet	x	X	X		х
				Alkalosis (respiratory alkalosis, metabolic alkalosis , signs, symptoms, compensation, treatment)	Student book Essential books Recommended books Internet	x	X	X		x
2.15	Basis of complementary and alternative	A32	a4 a5	Energy requirement and energy expenditure- Diet and therapy- Nutritional assessment and food pyramids	Student book Essential books	x		X		x
	medicine			Management of obesity- Drugs of choice for treatment of obesity	Student book Essential books Recommended	X	X	X		X

				Diabetes mellitus (DM)- Nutrition therapy and recommendation for DM- Drug of choice for treatment of DM	books Internet	x		X	x		х
				Definition and types of cardiovascular diseases (CVD)- Risk factors for CVD- Drug of choice for treatment of CVD		х		X	X		Х
				Management of CVD- Diet for hypertensive patients- Drugs of choice for treatment of hypertension		x		X	X		x
				Sodium imbalances: Hypernatremia (signs, symptoms, pathophysiology)- Hyponatremia (signs, symptoms, pathophysiology, diagnosis, treatment, management)	Student book Essential books Recommended books Internet	x		Х	x		x
				Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms, compensation, treatment)	Student book Essential books Recommended books Internet	х		X	x		х
				Alkalosis (respiratory alkalosis, metabolic alkalosis , signs, symptoms, compensation, treatment)	Student book Essential books Recommended books Internet	x		X	X		х
3.5	Select medicines	В8	b1	Case study for obesity	Practical notes		X			X	

	based on understanding of			Case study for Diabetes mellitus		X		x	
	etiology and			Case study for CVD		X		X	
	pathophysiology of diseases			Case study for hypertension		x		x	
				Case study for electrolytes imbalance		Х		X	
				Case study for acid-base imbalance		X		X	
Ex NARs	Perform different analytical tests for blood and body fluids to determine the functional state of different body organs	B12	b2	Obesity and cases Determination of BMI Suggestion of life style modification Metabolic syndrome and case study Calculation of atherogenic index Diabetes and case study Electrolyte and case study Case study for acid base imbalance Case study for hypertension Case study for myocardial infarction Collective case study	Practical notes	x		x	
	Advise patients			Case study for obesity		X		X	
	and other health care			Case study for Diabetes mellitus		X		X	
3.10	professionals about safe and	B18	b3	Case study for CVD	Practical notes	 X	 	X	
	proper use of medicines.			Case study for hypertension		X		x	

	I	l	İ		l I	I	Ī		I	İ	İ	ı I
				Case study for electrolytes imbalance			X			X		
				Case study for acid-base imbalance			X			X		
				Management of obesity- Drugs of choice for treatment of obesity		X		X	X		x	X
				Diabetes mellitus (DM)- Nutrition therapy and recommendation for DM- Drug of choice for treatment of DM	Student book Essential books	X		X	X		X	X
	Utilize the pharmacological basis of			Definition and types of cardiovascular diseases (CVD)- Risk factors for CVD- Drug of choice for treatment of CVD	Recommended books Internet	х		х	х		х	х
4.9	therapeutics in the proper selection and use of drugs in various disease	C14	c1 c2	Management of CVD- Diet for hypertensive patients- Drugs of choice for treatment of hypertension		х		х	х		х	Х
	conditions.			Sodium imbalances: Hypernatremia (signs, symptoms, pathophysiology)- Hyponatremia (signs, symptoms, pathophysiology, diagnosis, treatment, management	Student book Essential books Recommended books Internet	x		x	x		x	x
				Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms,		х		х	X		X	x

				compensation, treatment)								
				Alkalosis (respiratory alkalosis, metabolic alkalosis , signs, symptoms, compensation, treatment)		x		X	x		X	х
				Case study for obesity			X			X		
				Case study for Diabetes mellitus			X			x		
	Communicate			Case study for CVD			X			X		
5.1	clearly by verbal and written	D1	d1	Case study for hypertension	Practical notes		X			X		
	means			Case study for electrolytes imbalance			X			X		
				Case study for acid-base imbalance			X			X		
	Work effectively						X			X		
5.3	in a team	D3	d2	Activity	Practical notes		X			X		
							X			X		
	Use numeracy, calculation and statistical			Energy needed (energy requirement and energy expenditure)	Student book Essential books	X			X		X	x
5.4	methods as well	D4	d3	Determination of body			X			X		
	as information			mass index	Practical notes		X			X		
	technology tools			Calculation of athergenic index	114646411404		X			X		
5.5	Practice independent learning needed	D6	d4	Revision- Open discussion	Student book Essential books Recommended	X		X				X
	for continuous professional				books Internet	X		X				X

	development					x		X				x
				Activity (report)	Recommended books Internet		х	x		x		
5.9	Implement writing and presentation skills	D10	d5	Activity (report)	Recommended books Internet		Х	х		х		
				Energy needed (energy requirement and energy expenditure)	Student book Essential books	X			X		х	X
	Implement			Case study for obesity	Practical notes		X			X		
5.10	writing and thinking, problem-	D11	d6	Case study for Diabetes mellitus	Practical notes		X			X		
	solving and			Case study for CVD	Practical notes		X			X		
	decision- making abilities.			Case study for hypertension	Practical notes		X			X		
				Case study for electrolytes imbalance	Practical notes		X			X		
				Case study for acid-base imbalance	Practical notes		X			X		

Course Coordinators: Prof. Dr. Hoda Elsayed

Head of Department: Prof. Dr. Sahar Elswefy

تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ 27-8-8-2018

COURSE SPECIFICATIONS

Accounting and Business
Administration

Fifth year – second Term 2018-2019

توصيف مقرر المحاسبة وإدارة الأعمال الصيدلية

جامعة الزقازيق كليـة الصـيدلة

أ- مواصفات المقرر:

البرنامج أو البرامج التي يقدم من خلالها المقرر: بكالوريوس الصيدلة

المقرر يمثل عنصرا رئيسيا أو ثانويا بالنسبة للبرامج: ثانوياً

القسم العلمي المسئول عن البرنامج: -------

القسم الذي يدرس المقرر: كلية التجارة-قسم إدارة الأعمال

مستوى العام الأكاديمي: الفرقة الخامسة/ التيرم الثاني

تاريخ اعتماد التوصيف: سبتمبر 2018

(ب) البيانات الأساسية:

العنوان : محاسبة و إدارة أعمال صيدلية

الساعات المعتمدة: ---

المحاضرات: ساعه أسبوعيا

العملى: ---

الدروس العملية: ---

المجموع: ساعة في الأسبوع

(ج) البيانات المهنية:

1) الأهداف العامة للمقرر:

عند إتمام المقرر سوف يكون الطالب قادر على الالمام بالمفاهيم والاتجاهات المختلفة

الكود: BA510

للإدارة.

2) النتائج التعليمية المستهدفة لمقرر المحاسبة و إدارة الأعمال الصيدلية:

معرفة والفهم	أ _ الم
يعرف نظريات الإدارة الحديثة وأسس تطبيقها في ظل العولمة.	11
يلم بالمعارف والمهارات المتعلقة بالتخطيط، التنظيم ،اتخاذ القرارات ،القيادة ،الرقابة والاتصال.	اً 2
يوضح طرق إدارة المشروعات الصغيرة (الصيدلية) وتحديد الأهداف والموارد وتوزيع الوظائف.	31
يعرف كيفية عمل دراسة جدوى اقتصادية لإنشاء صيدلية.	4١
لهارات الذهنية	ج- اله
يقيم بعض النماذج لشركات الأدوية الناجحة ومعرفة أسباب نجاحها والاستفادة منها.	ج1
يطبق المباديء الاقتصادية في إدارة الصيدلية، وفي در اسة الجدوى الاقتصادية للمشروعات الصيدلية.	ج2
هارات العامة والمنقولة	د_ الم
يعمل بكفاءة كأحد أفراد الفريق.	د1
يستخدم المصادر الالكترونية ونظم المعلومات في الإدارة.	د2
يختار الشكل القانوني المناسب للمنظمة.	د3
يكتسب مهارات التفكير الإبداعي واتخاذ القرارات الذكية وتبسيط إجراءات العمل.	د4
ينمي مهارة إدارة الوقت والتخطيط الاستراتيجي.	د5
يطور مهارات التفكير النقدي و اتخاذ القرارات و معالجة المشكلات التي تواجه مديري الصيدليات وشركات الأدوية.	د6

د_ المحتويات:

المحاضرة (1ساعة/ الأسبوع)	الأسبوع
مفاهيم الإدارة والأعمال.	1
المتغيرات العالمية التي تؤثر على الصيدلي	2
بعض المفاهيم الحديثة لمواجهتها.	
ثقافة المنظمة الملتزمة بالجودة.	3
أخلاقيات الأعمال والمسئولية الإجتماعية	4
المنظمات.	
التنبؤ وبتاء القدرة على الرؤيا المستقبلية.	5
التخطيط: طرق إعداد الخطط الاستراتيجية.	6
امتحان نصف الفصل	7
أسس اتخاذ القرارات الذكية للصيدلي المتميز.	8
إدارة الوقت كأداة لتحقيق التميز .	9
إدارة الازمات وطرق مواجهتها.	10
دراسة جدوى إنشاء المشروع الجديد.	11
طرق إدارة الصراع ومواجهتها.	12

طرق الإدارة ضمن فريق العمل	
مهارات الاتصال داخل المنظمة.	13
التنسيق وتنظيم الأعمال	14
الرقابة كأداة لتحقيق الخطط المحددة.	
	15
الامتحان التحريري	

هـ أساليب التعليم و التعلم:

• المحاضرات

و-أساليب تقييم الطلبة:

1- الامتحان التحريري يقيم: أ1و أ2و أ3و أ4و ج1وج2 د1ود2ود3ود4ود5و د6

الجدول الزمنى التقييم:

الاسبوع السابع	تقييم (1): الامتحان نصف الفصلي
الأسبوع الخامس عشر	تقييم (2): الامتحان التحريري النهائي

ترجيح التقييم:

النسب المئوية	الدرجات	طريقة التقييم
%20	10	امتحان نصف الفصل
%80	40	الامتحان التحريري النهائى
%100	50	الإجمالي

ز- التسهيلات اللازمة للتعليم و التعلم:

1- للمحاضرات: اللوحات (البيضاء) و السوداء و جهاز العرض المرئي (داتا شو).

ي- قائمة المراجع:

1- مذكرات: مذكرة القسم2- كتب مقترحة

أصول ومبادئ إدارة الأعمال

3- دوريات علمية أو نشرات الخ

التنظيم والإدارة

منسق المقرر: أ.د / عزة أحمد الشربيني التاريخ:

							ال	أعم	دارة	<u> 1 ä</u>	سفوف	24	
				ودة	المنش	لتعلم	تائج ا	<u>:</u>					
	اصلية	ة و تو	ت عام	مهاراد	ı	المهارات المعرفة والفهم الفكرية				معرفة	ונ	محتويات المقرر	
د6	62 52 42 32 22 1					ج2	ج1	41	31	اً 2	اً 1		
											X	مفاهيم الإدارة والأعمال	1
	x										X	المتغيرات العالمية التي تؤثر على الصيدلي بعض المفاهيم الحديثة لمواجهتها	2
				X							X	ثقافة المنظمة الملتزمة بالجودة	3
			X								X	أخلاقيات الأعمال والمسئولية الإجتماعية للمنظمات	4
X							X			X		التنبؤ وبناء القدرة على الرؤيا المستقبلية	5
	X									X		التخطيط: طرق إعداد الخطط الاستراتيجية	6
		X								X		أسس اتخاذ القرارات الذكية للصيدلي المتميز	7
	X					X			X			إدارة الوقت كأداة لتحقيق التميز	8
						X				X		إدارة الازمات وطرق مواجهتها	9
X						X	X	X				دراسة جدوى إنشاء المشروع الجديد	10
						X			X			طرق إدارة الصراع ومواجهتها	11
					X	X			X			طرق الإدارة ضمن فريق العمل	12
	X									X		مهارات الاتصال داخل المنظمة	13
										X		التنسيق وتنظيم الأعمال الرقابة كأداة لتحقيق الخطط المحددة	14

مصفوفة 2 إدارة أعمال											
أسلوب التقييم الامتحان التحريري	التعلم التعلم الذاتي	التعليم و الدروس العملية	أساليب المحاضرة	المصدر	محتويات المقرر	نتائج التعلم المنشودة للمقرر	نتائج التعلم المنشودة للبرنامج	المعايير الأكاديمية المرجعية القومية (NARS)			
х			Х	الكتاب	مفاهيم الإدارة والأعمال. المتغيرات العالمية التي تؤثر على الصيدلي بعض المفاهيم الحديثة ثقافة المنظمة الملتزمة بالجودة. فلاقيات الأعمال والمسئولية الإجتماعية المنظمات.	1-1	A6	2.1 Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.			
X			X	الكتاب	التنبؤ وبتاء القدرة على الرؤيا المستقبلية. التخطيط: طرق إعداد الخطط الاستراتيجية. أسس اتخاذ القرارات الذكية للصيدلي المتميز. إدارة الازمات وطرق مهارات الاتصال داخل مهارات الاتصال داخل المنظمة. التنسيق وتنظيم الأعمال. الخطط المحددة.	2-1	A 37	2.18 Principles of management including financial and human resources			
x			x	الكتاب	إدارة الوقت كأداة لتحقيق التميز. طرق إدارة الصراع ومواجهتها. طرق الإدارة ضمن فريق العمل.	3-1	A38	2.19 Principles of drug promotion, sales and marketing, business administration, accounting and pharmacoeconomics			
x			X	الكتاب	دراسة جدوى إنشاء المشروع الجديد	4-1					
X			X	الكتاب	التنبؤ وبتاء القدرة على الرؤيا المستقبلية. دراسة جدوى إنشاء المشروع المجديد.	ج-1	C17	4.12 Apply the principles of pharmacoeconomics in promoting			

x		X	الكتاب	إدارة الوقت كأداة لتحقيق التميز. التميز. إدارة الازمات وطرق مواجهتها. دراسة جدوى إنشاء المشروع الجديد. طرق إدارة الصراع ومواجهتها. طرق الإدارة ضمن فريق العمل.	ج-2		cost/effective pharmacotherapy
X		X	الكتاب	طرق الإدارة ضمن فريق العمل.	1-2	D3	5.3 Work effectively in a team.
				المتغيرات العالمية التي تؤثر على الصيدلي بعض المفاهيم الحديثة لمواجهتها. ثقافة المنظمة الملتزمة بالجودة. مهارات الاتصال داخل المنظمة.	د-2	D5	5.4 Use numeracy, calculation and statistical methods as well as information technology tools
X		X	الكتاب	أخلاقيات الأعمال و المسئولية الإجتماعية للمنظمات.	3-2	D7	5.6 Adopt ethical, legal and safety guidelines
x		x	الكتاب	أسس اتخاذ القرارات الذكية للصيدلي المتميز .	د-4	D8	5.7 Develop financial, sales and market management skills
x		x	الكتاب	التخطيط: طرق إعداد الخطط الاستراتيجية. إدارة الوقت كأداة لتحقيق التميز.	د-2	D9	5.8 Demonstrate creativity and time management abilities.
x		x	الكتاب	التنبؤ وبناء القدرة على الرؤيا المستقبلية. دراسة جدوى إنشاء المشروع الجديد.	63	D11	5.10 Implement writing and thinking, problem- solving and decision- making abilities

منسق المقرر: أ.د / عزة أحمد الشربيني التاريخ: