COURSE SPECIFICATIONS

Faculty of Pharmacy

Fifth Year – Second Term

2019-2020

CONTENTS:

COURSE SPECIFICATIONS

Industrial Pharmacy -2

Fifth year – second Term
2019-2020

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 2019

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- Knowledge and Understanding	
a1	Demonstrate different types of tablets
a2	Illustrate different method for tablet preparation, coating and evaluation, different packaging materials.
a3	Illustrate different problems associated with tablet coating, outline the principle, mechanism and structures of different instruments used in particle size reduction
a4	Explain advantage and disadvantages of different packaging materials and quality control test for packaging materials
B- Professional and Practical skills	
b1	Solve different problems associated with tablet preparation and tablet coating
b2	Demonstrate different apparatus used in particle size reduction
C- Intellectual skills	
c1	Differentiate between different techniques and apparatus used for tablet preparation, tablet coating and particle size reduction
c2	Suggest appropriate apparatus for particle size reduction
c3	Identify advantages and disadvantages of each packaging materials, film coat…..
D- General 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 No.	Lecture contents (2 hrs/lec.)	Practical session (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+ oral 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, overhead projectors, 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

Date: 2019 / 12 / **تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ**

Matrix I of Industrial Pharmacy-2 course

Course Contents		ILOs of industrial pharmacy 2 course											
		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		x									
2	Manufacturing of tablets		x					x					
3	Problems of tablets		x					x					
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				
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			x	x	x			
Practical session													
1	Different types of tablets	x		x							x	x	x
2	Tablets preparation		x			x		x			x	x	x
3	Tableting problems	x					x	x			x	x	x
4	Evaluation of tablets		x					x			x	x	x
5	Tablets coating		x					x			x	x	x
6	Film coat defects			x				x			x	x	x
7	Midterm	x	x	x	x			x	x	x			
8	Quiz+ Particle size reduction						x		x		x	x	x
9	Particle size reduction + Activity			x				x		x	x	x	x
10	Particle size reduction + Activity			x				x		x	x	x	
11	Particle size reduction + Activity			x				x	x	x	x	x	x
12	Quality control				x				x		x	x	x
13	Practical exam					x	x	x	x				x

Matrix II of Industrial Pharmacy-2 course

NARS		Program ILOS	Course ILOS	Course content	Sources	Teaching and learning methods			Method of assessment		
						Lecture	Practical session	Self learning	written exam	Practical exam	Oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	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
			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
3.3	Compound, dispense, label, store and distribute medicines effectively and safely.	B4	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					
					Student book Essential books and practical notes		x			x	
			b2		Student book Essential books Internet	x	x				
					Student book Essential books		x			x	
4.2	Comprehend and apply GLP, GPMP, GSP and GCP guidelines in pharmacy practice.	C4	c1	Manufacturing of tablets Problems of tablets Evaluation of tablets Tablet coating Film coat defects Particle size reduction Quality control Packaging	Student book Essential books	x			x		x
					Student book Essential books		x			x	
			c2		Student book Essential books	x			x		x
					Student book Essential books		x			x	
			c3		Student book Essential books Internet	x	x		x		x

					Student book Essential books		x			x	
5.3	Work effectively in a team.	D3	d1	Activity	Practical notes And student book	x			x		
							x	x		x	
5.4	Use numeracy, calculation and statistical methods as well as information technology tools.	D5	d2			x		x	x		
							x			x	
5.1o	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**

Date: **2019 / 12 /** **تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ**

COURSE SPECIFICATIONS

Phytotherapy

Fifth year – second Term
2019-2020

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- 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- Professional and Practical skills	
b1	Diagnose simple health problems e.g. GIT, cardiovascular, respiratory, urinary, CNS, ….etc.
b2	Describe a herbal remedy for treatment of common health problems.
b3	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 No.	Lecture (2hrs/week)	Practical session/ activity* (2hrs/week)
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 , chiropractic…..etc
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, hemorrhoids…..etc) - 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 diabetes - Herbal medications for obesity	- Herbal medications for diabetes and obesity **Activity**: Oral presentation for commercially available herbal market preparations used for diabetes and obesity
11	-Herbal remedies for dermatologic use -Herbal medications for skeletal system	- Herbal drugs used for dermatological use and skeletal disorders **Activity**: Oral presentation for commercially available herbal market preparations used for dermatological use and skeletal disorders
12	- Nutraceuticals -Narcotic drugs. -Toxicological aspects of herbal medicine	**Final practical exam**
13	-Regulatory laws for production of herbal remedies -Forensic Pharmacognosy	**Final practical exam**
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 Mohamed El-Shazly

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

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

Matrix I of Phytotherapy course

Course Contents		ILOs of Phytotherapy course													
		Knowledge and understanding					Professional and practical skills			Intellectual skills		General and transferable skills			
	Lectures	**a1**	**a2**	**a3**	**a4**	**a5**	**b1**	**b2**	**b3**	**c1**	**c2**	**d1**	**d2**	**d3**	**d4**
1	-Definition, history and forms of alternative medicine -Herbal medicine versus conventional medicine	x													
2	- Herb-drug interaction - Preparation of herbal medications		x												
3	-Herbal remedies for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation			**x**		**x**				**x**	**x**				
4	-Herbal remedies for GIT disorders (intestinal worms, hemorrhoids…..etc) - 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	**Midterm exam**														
8	-Herbal medications for diabetes - 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 -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 -Forensic Pharmacognosy				x										
Practical sessions															
14	- An introduction for use of herbal medicine for treatment of simple health problems.						x	x	x						
15	**Activity**: Oral presentation for different forms of alternative medicine e.g: Homeopathy , chiropractic…..etc											x	**x**	**x**	**x**
16	-Herbal remedies for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation) **Activity**: Oral presentation for herbal market preparations used for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation).						x	x	x			x	**x**	**x**	**x**
17	- Herbal remedies used as anthelmintic - Herbal remedies used for hemorrhoids -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**
18	- Herbal medications for cardiovascular disorders **Activity**: Oral presentation for herbal market preparations used for cardiovascular disorders						x	x	x			x	**x**	**x**	**x**
19	-Drugs used for cold and other respiratory disorders **Activity**: Oral presentation for herbal market preparations used for respiratory tract disorders						x	x	x			x	**x**	**x**	**x**
20	- Herbal medications for diabetes and obesity **Activity**: Oral presentation for herbal market preparations used fo 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														
22	-Drugs used for CNS disorders **Activity**: Oral presentation for herbal market preparations used for CNS disorders.						x	x	x			x	**x**	**x**	**x**
23	- Herbal drugs used for dermatological use and skeletal disorders **Activity**: Oral presentation for herbal market preparations used for dermatological use and skeletal disorders						x	x	x			x	**x**	**x**	**x**
24	**Activity**											x	x	x	x

Matrix II of Phytotherapy course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Methods of assessment			
						Lecture	Practical session	Self learning	Written exam	Practical exam	Mid term exam	Oral exam
2.15	Underline basis of complementary and alternative medicine	A32	a1	-Definition, history and forms of alternative medicine -Herbal medicine versus conventional medicine	Student book	x			x		x	x
			a2	- Herb-drug interaction - Preparation of herbal medications								
2.1	Define principles of pharmacy practice (pharmaceutical care and professional		a3	-Herbal remedies for GIT disorders (mouth disorder, peptic ulcer, diarrhea, constipation								
			a5	-Herbal remedies for GIT disorders (intestinal worms,								

	pharmacy (clinical, hospital, community…), complementary and alternative medicine, drug and poison information, pharmacy laws and regulations).	A8		hemorrhoids…etc) - Herbal medications for hepatic disorders -Herbal medications for cardiovascular disorders -Herbal remedies for respiratory tract 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								

			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		

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								

4.9	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, hemorrhoids..etc) - Herbal medications for hepatic disorders -Herbal medications for cardiovascular disorders -Herbal remedies for respiratory tract	Student book	x			x		x	x

4.14	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								
5.2	Demonstrate professional competence in internet use and gathering information from different sources to improve professional abilities	D2	d1	**Activity** Oral presentation for herbal medications used for treatment of common health problems	Internet essential							
5.3	Implement tasks	D3	d2									

	as a member of a team				and recom m-ended books.							
5.9	Implement writing and presentation skills.	D10	d3									
5.10	Develop critical thinking, problem-solving and decision-making abilities	D11	d4									

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

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

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

COURSE SPECIFICATIONS

Quality Control

Fifth year – second Term
2019-2020

Course Specification of Quality Control

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

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

Department offering the course: Analytical chemistry Department

Academic year/ Level: Fifth year /Second term

Date of specification approval: Feb. 2020

B- Basic information:

Title: Quality Control Code: AC525

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to explain drug registration and assessment, analytical Problems (sampling, experimental errors, choice of methods of an analysis and validation), drug stability and degradation products, Function group analysis. determination of active ingredients in different dosage forms, Quality assurance of pharmaceuticals G.M.P, ISO and BSI.

2-Intended Learning Outcomes of Quality Control (lLOs):

A- Knowledge and Understanding	
a1	Describe different function group analysis and drug stability.
a2	Demonstrate various analytical techniques for drug analysis and determination of active ingredients in different dosage forms,
a3	Illustrate different analytical Problems (sampling, experimental errors, choice of methods of an analysis and validation)
B- Professional and Practical skills	
b1	Handle basic laboratory equipments & chemicals effectively and safely.
b2	Identify active ingredients quantitatively.
C- Intellectual skills	
c1	Apply GMP guidelines in pharmacy practice.
c2	Choose quantitative and qualitative methodology and assay of raw materials.
c3	Select quantitative and qualitative methodology and assay of pharmaceutical preparations including: (tables, semisolids, eye drops, injection, suppositories and aerosols inhalation).
D- General and Transferable skills	
d1	Improve professional abilities by evaluation information from different sources.
d2	Work effectively as a member of a team.
d3	Adopt safety guidelines
d4	Write reports and present it.

D- Contents:

Week No.	Lecture (2hrs/week)	Practical session (2hrs/week)
1	quality assurance of pharmaceuticals , G.M.P, ISO and BSI	Safety guidness
2	-Analytical Problem: sampling	Assay of Paracetamol tablets. Assay of Isoniazid tablets
3	Analytical Problem: experimental errors	Assay of Glycerol suppositories
4	-Analytical Problem: choice of methods of an analysis and validation	Assay of Chloramphenicol-
5	Drug stability and degradation product (1)	Capsules
6	Drug stability and degradation product (2)	Assay of Chloramphenicol eye drops Assay of Lidocaine injection
7	**Mid term exam**	
8	Introduction to Pharmaceutical Analysis	Assay of Furosemide
9	- Function group analysis -Classical analysis	**Activity(Report)**
10	Function group analysis -Instrumental analysis	Assay of Sodium chloride intravenous infusion
11	Calibration/performance verification of instruments and equipment,	Assay of Salicylic acid ointment
12	Determination of active ingredients in tablets,semisolid and eye drops	**Practical exam**
13	Determination of active ingredients in injection and suppositories	**Practical exam**
14	-Revision	
15	**Final exam**	

E- Teaching and Learning Methods:

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

F- Student Assessment Methods:

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

2- Activity to assess c4, d1, d2, d3, d4

3- Practical exam to assess b1,b2,c1,c2,c3,d1,d2,d3,d4

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

Assessment schedule:

Assessment (1): Written exams	Week 15
Assessment (2): Activity	Week 9
Assessment (3): Practical exams	Week 12,13
Assessment (4): Oral exams	Week 15
Assessment (1): midterm exam	Week 7

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	50	50%
Midterm exam	10	10%
Practical exam	20	20%
activity	5	5%
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 Quality Control approved by Analytical chemistry department 2019.

- Practical notes of Quality Control approved by Analytical chemistry department 2019.

2- Essential Books:

i- Guidance for the Validation of Analytical Methodology and Calibration of Equipment used for Testing of Illicit Drugs in Seized Materials and Biological Specimens, Laboratory and Scientific Section, United Nations Office on Drugs and Crime, 2009

ii- A. Kar, Pharmaceutical Drug Analysis, New Age International (P) Limited, Publishers, New Delhi,2005

iii- B.p. &U.S Pharmacopia (1988-2007)

iv- Chemical Stability of Pharmaceuticals: A Handbook for Pharmacists, 2nd Edition ; Connors K.A., Amidon G.L., Stella V.J.

v- Pharmaceutical Process Validation: An International (Drugs and the Pharmaceutical Sciences Book 129) 3rd Edition, Robert A. Nash, Alfred H. Wachter, 2003

vi- Photostability of drugs and drug formulations; 2nd Edition. Hanne Hjorth Tønnesen (2004)

3- Recommended books

i- Quality assurance of pharmaceuticals : a compendium of guidelines and related materials.Vol. 2, Good manufacturing practices and inspection. – 2nd ed, 2007

3- Periodicals, Web Sites, etc

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

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

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

www.Pubmed.Com

www.sciencedirect.com

Course Coordinator: Prof. Dr. Hisham Ezzat Abdel Lattif

Head of department: Prof. Dr. Hisham Ezzat Abdel Lattif

Date: 2020/2/ تم مناقشة واعتماد توصيف المقرر من مجلس القسم المقرر بتاريخ

Matrix I of Quality Control course

Course Contents		ILOs of Quality Control course													
		knowledge and understanding				professional and practical skills		intellectual skills				General and transferable skills			
Lectures		a1	a2	a3		b1	b2	c1	c2	c3	c4	d1	d2	d3	d4
1	quality assurance of pharmaceuticals , G.M.P, ISO and BSI	x						x							
2	-Analytical Problem: sampling			x											
3	Analytical Problem: experimental errors			x											
4	-Analytical Problem: choice of methods of an analysis and validation			x											
5	Drug stability and degradation product (1), (2)	x							x						
6	Introduction to Pharmaceutical Analysis		x							x					
7	- Function group analysis Classical analysis , instrumental analysis	x								x					

8	Determination of active ingredients in different dosage forms		x							x					
9	Calibration/performance verification of instruments and equipment,		x					x							
Practical sessions															
1	Assay of : Paracetamol tablets, Isoniazid tablets, Glycerol suppositories, Chloramphenicol capsules, Chloramphenicol eye drops, Lidocaine injection, Furosemide,Sodium chloride intravenous infusion, Salicylic acid ointment Phenylephrine eye drops.					x	x			x					
2	Activity (reports)										x	x	x	x	x

Matrix II of Quality Control course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Method of assessment		
						lecture	practical session	self learning	written exam	practical exam	oral exam
2.2	Physico-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio-labeled products.	A9	a1	Drug stability and degradation product	student book	x			x		x
				Function group analysis Classical analysis Function group analysis Instrumental analysis	student book	x			x		x
2.3	Principles of different analytic techniques using GLP guidelines	A11	a1	quality assurance of pharmaceuticals , G.M.P, ISO and BSI	student book	x			x		x

	and validation procedures.			Calibration/performance verification of instruments and equipment	student book	x			x		x
				Analytical Problem: Choice of methods of an analysis and validation	student book	x			x		x
2.4	Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds.	A12	a2	Determination of active ingredients in Tablets semisolid and eye drops	student book, essential books	x			x		x
				Determination of active ingredients in injection and suppositories	student book, essential books	x			x		x
				Determination of active ingredients in aerosols inhalation	student book, essential books	x			x		x
2.17	Methods of biostatistical analysis and pharmaceutical calculations	A36	a3	Analytical Problem: sampling and experimental errors	student book	x			x		x
				Analytical Problem: Choice of methods of an analysis and validation	student book	x			x		x

3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	.Assay of : Paracetamol tablets,Isoniazid tablets,Glycerol suppositories,Chloramphenicol capsules, Chloramphenicol eye drops, Lidocaine injection,Furosemide,Sodium chloride intravenous infusion,Salicylic acid ointment&Phenylephrine eye drops.	Practical notes		x			x	
3.4	Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B6	b2	.Assay of : Paracetamol tablets,Isoniazid tablets,Glycerol suppositories,Chloramphenicol capsules, Chloramphenicol eye drops, Lidocaine injection,Furosemide,Sodium chloride intravenous infusion,Salicylic acid ointment&Phenylephrine eye drops.	Practical notes		x			x	
4.2	Comprehend and apply GLP,GPMP, GSP and GCP guidelines in pharmacy practice	C3	c1	Quality assurance of pharmaceuticals G.M.P ,ISO and BSI	student book	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	c2	Drug stability and degradation product	student book	x					
		C7	c3	Determination of active ingredients in Tablets semisolid and eye drops	student book	x			x		
				Determination of active ingredients in injection and suppositories	student book	x			x		
				Determination of active ingredients in aerosols inhalation	student book	x			x		

				.Assay of : Paracetamol tablets,Isoniazid tablets,Glycerol suppositories,Chloramphenicol capsules, Chloramphenicol eye drops, Lidocaine injection,Furosemide,Sodium chloride intravenous infusion,Salicylic acid ointment&Phenylephrine eye drops.	Practical notebook		x			x	
5.2	Retrieve and evaluate information from different sources to improve professional competencies	D2	d1	Drug registration and assessment	student book	x			x		x
				Activities(reports)	essential books/Internet		x	x		x	
5.3	Work effectively in a team	D3	d2	Activities(reports)	essential books/Internet		x	x		x	
5.6	Adopt ethical , sales and safety guidelines	D7	d3	Drug registration and assessment	student book	x			x		

5.9	Implement writing and presentation skills	D10	d4	Activities(reports)	essential books/Internet		x	x		x	

Course Coordinator: **Prof. Hisham Ezzat Abdel Latif**

Head of department: **Prof. Hisham Ezzat Abdel Latif**

Date: **2020/2/ تم مناقشة واعتماد توصيف المقرر من مجلس القسم المقرر بتاريخ**

COURSE SPECIFICATIONS

Drug Design

Fifth year – second Term
2019-2020

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: 24-2-2020

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 (lLOs):

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	Describe drug discovery, drug development, drug targets and identifying a bioassay and chemical delivery system
a4	Demonstrate 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.
c3	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 development - drug targets- identifying a bioassay	Theoretical Introduction to drug design
2	Finding a lead compound - screening of natural products and synthetic' banks'	Henderson–Hasselbalch Equation Identify the Functional Groups, and Predict the Water Solubility
3	- Combinatorial synthesis and computer-aided drug design - Structure determination and target-orientated drug design	Drawing Chemical Structures using ChemDraw Program **Activity** (Problem solving)
4	Application of drug development strategy in discovering new drugs	Introduction to Molecular Operating Environment (MOE) - Molecules Building and minimization
5	-Application of drug development strategy in discovering new drugs (i.e. H2-blockers and cox-2 inhibitors -Bioisosterism	MOE: Steric measurements Ligand surface mapping & flexible alignment
6	Quantitative structure-activity relationships	MOE: Ligand Preparation
7	**Midterm exam**	
8	Electronic effects (σ), Hansch equation	MOE: Database Creation
9	The Craig plot, The Topliss scheme	MOE: Protein Preparation (Part I)
10	Drug-receptor interactions Forces involved in drug receptor interaction	MOE: Protein Preparation (Part II) **Activity** (case study)
11	Enzyme as drug target	MOE: Docking Process
12	Receptor as drug target Nucleic acid as drug target and other minor target	MOE: Ligand interaction
13	Prodrugs and drug latentiation Bioprecursor prodrugs, chemical delivery systems	**-Practical exam**
14	Combinatorial synthesis and computer-aided design	**-Practical exam**

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, c3

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, c3

Assessment schedule:

Assessment (1): final Written exam	Week 15
Assessment (2): mid-term exam	Week 7
Assessment (3): Activity **(problem solving and case study)**	Week 3,10
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.
- Lectures handout

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**

Date: تم مناقشة واعتماد توصيف

المقرر من مجلس القسم المقرر بتاريخ 24-2-20020

Matrix I of Drug Design Course

Course Contents		ILOs of Drug Design course													
		Knowledge and understanding				Professional and practical skills			Intellectual skills			General and transferable skills			
Lectures		**a1**	**a2**	**a3**	**a4**	**b1**	**b2**	**b3**	**c1**	**c2**	**c3**	**d1**	**d2**	**d3**	**d4**
1	Drug discovery and drug development - drug targets-identifying a bioassay		X	x											
2	Finding a lead compound -screening of natural products and synthetic' banks'		X	x											
3	Combinatorial synthesis and computer-aided drug design Structure determination and target-orientated drug design		X	x											
4	Application of drug development strategy in discovering new drugs		X	x						x					
5	Application of drug development strategy in discovering new drugs (i.e. H2-blockers and cox-2 inhibitors Bioisosterism		X	x											
6	Quantitative structure-activity relationships	x													
7	Electronic effects (σ), Hansch equation	x													
8	The Craig plot, The Topliss scheme	x													
9	Drug-receptor interactions Forces involved in drug receptor interaction									x					
10	Enzyme as drug target		x	x						x					
11	Receptor as drug target		x	x						x					

12	Nucleic acid as drug target and other minor target		x	x						x					
13	Prodrugs and drug latentiation Bioprecursor prodrugs, chemical delivery systems		x		x										
14	Combinatorial synthesis and computer-aided design		x	x											
Practical sessions															
1	Theoretical Introduction to drug design					x		x							
2	Henderson–Hasselbalch Equation Identify the Functional Groups, and Predict the Water Solubility					x			x						
3	Molecules Building using Chemdraw						x								
4	Introduction to MOE program - Molecules Building and minimization						x	x							
5	MOE: Steric measurements Ligand surface mapping & flexible alignment							x		x					x
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							x		x					x
12	Activities											x	x	x	

Matrix II of Drug Design course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Methods of assessment		
						Lecture	Practical session	Reports & case study	Written exam	Practical exam	Oral exam
2.2	Physical-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio- labeled products.	[A9]	a1	Quantitative structure-activity relationships	student book	x			x		x
				Electronic effects (σ), Hansch equation	student book	x			x		x
				The Craig plot, The Topliss scheme	student book	x			x		x
2.5	Principles of drug design, development and synthesis.	[A14]	a2	Quantitative structure-activity relationships	student book	x			x		x
				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					x		x

				-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-activity relationships Electronic effects (σ), Hansch equation The Craig plot, The Topliss scheme	student book	x			x		X
				Drug discovery and drug development - drug targets- identifying a bioassay Finding a lead compound -screening of natural	student book	x			x		x

				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			x	
				Henderson–Hasselbalch Equation Identify the Functional Groups, and Predict the Water Solubility	Practical notes		x			x	
			b2	Molecules Building using Chemdraw	Practical notes		x			x	
				MOE: Molecules Building and minimization	Practical notes		x			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/Internet		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		x			x	
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			x		x

4.11	Assess drug interactions, ADRs and pharmacovigilance.	[C16]	c3	MOE: Steric measurements Ligand surface mapping & flexible alignment MOE: Ligand interaction	Practical notes/ internet/essential books		x	x		x	
5.2	Retrieve and evaluate information from different sources to improve professional competencies.	[D2]	d1	Activity	Practical notes/ internet/essential books		x	x		x	
5.3	Work effectively in a team.	[D3]	d2	Activity	Practical notes/ internet/essential books		x	x		x	
5.4	Use numeracy, calculation and statistical methods as well as information technology tools.	[D4]	d3	Activity	Practical notes/ internet/essential books		x	x		x	
5.10	Implement writing and thinking, problem solving and decision making skills	D11	d4	MOE: Steric measurements Ligand surface mapping & flexible alignment MOE: Ligand interaction	Practical notes/ internet/essential books		x	x		x	

COURSE SPECIFICATIONS

Production of Raw Materials

Fifth year – second Term
2019-2020

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: 2/2020

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

Knowledge 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
a3	outline different synthetic pathways for pharmaceutical heterocyclic compounds including commercially available drugs
Professional 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.
Intellectual 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
General 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 measures • Synthesis of Benzotriazole
Second week	• **AMINO ACIDS :** Peptide synthesis	• Purification/crystalization of Benzotriazole
Third week	• **LIPIDS:** Fatty acids	• Synthesis of benzoimidazole • **Activity** (internet search)
Fourth week	• **NUCLEOSIDES , NUCLEOTIDES**	• Purification/crystalization of Benzoimidazole
Fifth week	• **NUCLEIC ACIDS**	• Synthesis of 3,5-dimethyl pyrazol
Sixth week	• **SYNTHETIC POLYMERS**	• Purification/crystalization 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/crystalization 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**	•

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%
Midterm 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:** **2/2020**

Matrix I of Production of drug raw materials Course

Course Contents		ILOs of Production of drug raw materials course											
		Knowledge and understanding			Professional and practical skills		Intellectual skills		General and transferable skills				
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					x						
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			x						

Practical sessions													
1	• Laboratory safety measures • Synthesis of Benzotriazole				x	x			X		X		
2	• Purification/crystalization of Benzotriazole				x	x			X		X		
3	• Synthesis of benzoimidazole				x	x			X		X		
4	• Purification/crystalization of Benzoimidazole				x	x			X		X		
5	• Synthesis of 3,5-dimethyl pyrazol				x	x			X		X		
6	• Purification/crystalization of 3,5-dimethyl pyrazol				x	x			X		X		
7	• Bioinformatic lab		x					x	X	x			
8	• Synthesis of quinazoline dione				x	x			X		X		
9	• Purification/crystalization of quinazoline dione				x	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

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Methods of assessment		
						Lecture	Practical session	Reports & case study	Written exam	Practical exam	Oral exam
2.2	Physical-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio- labeled products.	[A9]	a1	AMINO ACIDS : Classification and nomenclature AMINO ACIDS : Peptide synthesis LIPIDS: Fatty acids NUCLEOSIDES , NUCLEOTIDES NUCLEIC ACIDS SYNTHETIC POLYMERS	student book	x			x		x
					student book	x			x		x
					student book	x			x		x
2.5	Principles of drug design, development and synthesis.	[A14]	a2	Bioinformatics: Principles Bioinformatics: applications HETEROCYCLIC CHEMISTRY Classification of heterocyclic compounds, nomenclature HETEROCYCLIC CHEMISTRY: five	student book	x			x		x
									x		x
		[A15]	a3		student book	x			x		X
					student book	x			x		x

				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 • Purification/crystalization of Benzotriazole • Synthesis of benzoimidazole • Purification/crystalization of Benzoimidazole • Synthesis of 3,5-dimethyl pyrazol • Purification/crystalization of 3,5-dimethyl pyrazol • Synthesis of	Practical notebook		x			x	
3.4	Extract, isolate, synthesize, purify, identify, and /or standardize active substances from different origins.	B7	B2								

				quinazoline dione • Purification/crystalization 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/crystalization of Benzotriazole • Synthesis of benzoimidazole • Purification/crystalization of Benzoimidazole • Synthesis of 3,5-dimethyl pyrazol • Purification/crystalization of 3,5-dimethyl pyrazol • Synthesis of quinazoline dione • Purification/crystalization 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	x			x		x

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

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

COURSE SPECIFICATIONS

Clinical Nutrition

Fifth Year- Elective Courses
2019-2020

Course Specifications of Clinical Nutrition

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: Fifth year/Second term

Date of specification approval: 27/8/2019

B- Basic information:

Title: Clinical Nutrition Code: **BC524**

Credit Hours:

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

C- Professional information:

1-Overall Aims of the Course:

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

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

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- 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- 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 (1 h/ week)	Practical session (2 h/week)
1	- Types of nutrients of balanced diet (macronutrients, micronutrients)	- Introduction to clinical nutrition - Calculation of BMR- TEE
2	- Energy requirement and energy expenditure - Diet and therapy - Nutritional assessment and food pyramids	- Obesity - Case studies for obesity
3	- Obesity (Definition, assessment, factors affecting obesity)	- Determination of body mass index - Suggestion of life style modification
4	- Management of obesity - Drugs of choice for treatment of obesity	- Metabolic syndrome - Case study - Calculation 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	- Electrolytes - Case study for electrolytes imbalance
9	- Electrolytes importance - Sodium (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)	
13	- The body and pH - pH control (control of acids, control of bases) - Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms, compensation, treatment)	**- Activity (report)** Nutrition and pregnancy
14	- Alkalosis (respiratory alkalosis, metabolic alkalosis , signs, symptoms, compensation, treatment)	**- Practical exam**
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): Written exam	Week 15
Assessment (2): Practical exam	Week 14
Assessment (3): midterm	Week 7

Weighing of Assessment:

Assessment method	Marks	Percentage
Written exam	70	70%
Practical exam and activities	20	20%
Midterm exam	10	10%
TOTAL	50	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 2019-2020.
- Practical notes of Clinical Nutrition approved by biochemistry department 2019-2020.

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**
Date: **تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ 2019-8-27**

Matrix I of Clinical Nutrition Course

Course Contents		ILOs of Clinical Nutrition Course															
		Knowledge and understanding					Professional and practical skills			Intellectual skills		General and transferable skills					
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	Electrolytes importance- Sodium (functions, homeostasis)		x														
9	Sodium imbalances: Hypernatremia (signs, symptoms, pathophysiology)- Hyponatremia (signs, symptoms, pathophysiology, diagnosis, treatment, management)		x	x	x					x	x						

10	Potassium imbalances (hyperkalemia, hypokalemia)		x	x													
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

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Method of assessment			
						Lecture	Practical session	Self learning	Written exam	Practical exam	Periodical exam	Oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A8	a1	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	x

	genomic and different biochemical pathways regarding their correlation with different diseases.			Electrolytes importance- Sodium (functions, homeostasis)	Student book Essential books	x			x		x	x
				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	x			x		x	x
				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		x	x

				Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms, compensation, treatment)	Student book Essential books	x			x		x	x
				Alkalosis (respiratory alkalosis, metabolic alkalosis , signs, symptoms, compensation, treatment)	Student book Essential books	x			x		x	x
2.12	Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmaco-therapeutic approaches	A27 A28	a3	Obesity (Definition, assessment, factors affecting obesity)	Student book Essential books	x			x			x
				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
				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	x		x	x			x

				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			x
				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 medicine	A32	a4 a5	Energy requirement and energy expenditure- Diet and therapy- Nutritional assessment and food pyramids	Student book Essential books	x			x			x
				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			x
				Definition and types of cardiovascular diseases (CVD)- Risk factors for CVD- Drug of choice for treatment of CVD		x		X	x			x
				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		X	x			x
				Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms, compensation, treatment)	Student book Essential books Recommended books Internet	x		X	x			x
				Alkalosis (respiratory alkalosis, metabolic alkalosis , signs, symptoms, compensation, treatment)	Student book Essential books Recommended books Internet	x		x	x			x
3.5	Select medicines	B8	b1	Case study for obesity	Practical notes		x			x		

	based on understanding of etiology and pathophysiology of diseases			Case study for Diabetes mellitus			x			x		
				Case study for CVD			x			x		
				Case study for hypertension			x			x		
				Case study for electrolytes imbalance			x			x		
				Case study for acid-base imbalance			x			x		
3.10	Advise patients and other health care professionals about safe and proper use of medicines.	B18	b3	Case study for obesity	Practical notes		x			x		
				Case study for Diabetes mellitus			x			x		
				Case study for CVD			x			x		
				Case study for hypertension			x			x		
				Case study for electrolytes imbalance			x			x		
				Case study for acid-base imbalance			x			x		
4.9	Utilize the pharmacological basis of therapeutics in the proper selection and use of drugs in various disease conditions.	C14	c2	Management of obesity- Drugs of choice for treatment of obesity	Student book Essential books Recommended books Internet	x		x	x		x	x
				Diabetes mellitus (DM)- Nutrition therapy and recommendation for DM- Drug of choice for treatment of DM		x		x	x		x	x
				Definition and types of cardiovascular diseases (CVD)- Risk factors for CVD- Drug of choice for		x		x	x		x	x

				treatment of CVD								
				Management of CVD- Diet for hypertensive patients- Drugs of choice for treatment of hypertension		x		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		x	x		x	x
				Acidosis (respiratory acidosis, metabolic acidosis, signs, symptoms, compensation, treatment)		x		x	x		x	x
				Alkalosis (respiratory alkalosis, metabolic alkalosis , signs, symptoms, compensation, treatment)		x		x	x		x	x
5.1	Communicate clearly by verbal and written means	D1	d1	Case study for obesity	Practical notes		x			x		
				Case study for Diabetes mellitus			x			x		
				Case study for CVD			x			x		
				Case study for hypertension			x			x		
				Case study for electrolytes imbalance			x			x		
				Case study for acid-base			x			x		

				imbalance								
5.3	Work effectively in a team	D3	d2	Activity	Practical notes		x			x		
							x			x		
							x			x		
5.4	Use numeracy, calculation and statistical methods as well as information technology tools	D4	d3	Energy needed (energy requirement and energy expenditure)	Student book Essential books	x			x		x	x
				Determination of body mass index	Practical notes		x			x		
							x			x		
				Calculation of athergenic index			x			x		
5.5	Practice independent learning needed for continuous professional development	D6	d4	Revision- Open discussion	Student book Essential books Recommended books Internet	x		x				x
						x		x				x
						x		x				x
				Activity (report)	Recommended books Internet		x	x		x		
5.9	Implement writing and presentation skills	D10	d5	Activity (report)	Recommended books Internet		x	x		x		

5.1O	Implement writing and thinking, problem-solving and decision-making abilities.	D11	d6	Energy needed (energy requirement and energy expenditure)	Student book Essential books	x			x		x	x
				Case study for obesity	Practical notes		x			x		
				Case study for Diabetes mellitus	Practical notes		x			x		
				Case study for CVD	Practical notes		x			x		
				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-
Date:2019

COURSE SPECIFICATIONS

Accounting and Business Administration

Fifth year – second Term
2019-2020

توصيف مقرر المحاسبة وإدارة الأعمال الصيدلية

جامعة الزقازيق **كليــة الصـيدلة**

أ- مواصفات المقرر:

البرنامج أو البرامج التى 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 2019

(ب) البيانات الأساسية:

العنوان : محاسبة و إدارة أعمال صيدلية الكود : BA510

الساعات المعتمدة : ---

المحاضرات : ساعه أسبوعيا

العملي: ---

الدروس العملية : ---

المجموع : ساعة في الأسبوع

(ج) البيانات المهنية:

1) الأهداف العامة للمقرر:

عند إتمام المقرر سوف يكون الطالب قادر على الالمـام بـالمفاهيم والاتجاهات المختلفة للإدارة.

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

أ – المعرفة والفهم	
أ1	يعرف نظريات الإدارة الحديثة وأسس تطبيقها في ظل العولمة.
أ2	يلم بالمعارف والمهارات المتعلقة بالتخطيط، التنظيم ،اتخاذ القرارات ،القيادة ،الرقابة والاتصال.
أ3	يوضح طرق إدارة المشروعات الصغيرة (الصيدلية) وتحديد الأهداف والموارد وتوزيع الوظائف.
أ4	يعرف كيفية عمل دراسة جدوى اقتصادية لإنشاء صيدلية.
ج- المهارات الذهنية	
ج1	يقيم بعض النماذج لشركات الأدوية الناجحة ومعرفة أسباب نجاحها والاستفادة منها.
ج2	يطبق المباديء الاقتصادية في إدارة الصيدلية، وفي دراسة الجدوى الاقتصادية للمشروعات الصيدلية.
د- المهارات العامة والمنقولة	
د1	يعمل بكفاءة كأحد أفراد الفريق.
د2	يستخدم المصادر الالكترونية ونظم المعلومات في الإدارة.
د3	يختار الشكل القانوني المناسب للمنظمة.
د4	يكتسب مهارات التفكير الإبداعي واتخاذ القرارات الذكية وتبسيط إجراءات العمل.
د5	ينمي مهارة إدارة الوقت والتخطيط الاستراتيجي.
د6	يطور مهارات التفكير النقدي و اتخاذ القرارات و معالجة المشكلات التي تواجه مديري الصيدليات وشركات الأدوية.

د- المحتويات:

الأسبوع	المحاضرة (2 ساعة/ الأسبوع)
1	مفاهيم الإدارة والأعمال.
2	المتغيرات العالمية التي تؤثر على الصيدلي بعض المفاهيم الحديثة لمواجهتها.
3	ثقافة المنظمة الملتزمة بالجودة.
4	أخلاقيات الأعمال والمسئولية الإجتماعية للمنظمات.
5	التنبؤ وبناء القدرة على الرؤيا المستقبلية.
6	التخطيط: طرق إعداد الخطط الاستراتيجية.
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.

13	مهارات الاتصال داخل المنظمة.
14	التنسيق وتنظيم الأعمال الرقابة كأداة لتحقيق الخطط المحددة.
15	الامتحان التحريرى

هـ- أساليب التعليم و التعلم:

- المحاضرات

و-أساليب تقييم الطلبة:

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

الجدول الزمني التقييم:

تقييم (1): الامتحان التحريري	**الأسبوع الخامس عشر**

ترجيح التقييم:

طريقة التقييم	الدرجات	النسب المئوية
الامتحان التحريري	50	%100
الإجمالي	50	%100

ز- التسهيلات اللازمة للتعليم و التعلم:

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

ي- قائمة المراجع:

1- مذكرات: مذكرة القسم

2- كتب مقترحة

أصول ومبادئ إدارة الأعمال

3- دوريات علمية أو نشرات .... الخ

التنظيم والإدارة

منسق المقرر: أ.د / عزة أحمد الشربيني

التاريخ:

مصفوفة 1 إدارة أعمال

	محتويات المقرر	نتائج التعلم المنشودة											
		المعرفة والفهم				المهارات الفكرية		مهارات عامة وتواصلية					
		أ1	أ2	أ3	أ4	ج1	ج2	د1	د2	د3	د4	د5	د6
1	مفاهيم الإدارة والأعمال	x											
2	المتغيرات العالمية التي تؤثر على الصيدلي بعض المفاهيم الحديثة لمواجهتها	x							x				
3	ثقافة المنظمة الملتزمة بالجودة	x							x				
4	أخلاقيات الأعمال والمسئولية الإجتماعية للمنظمات	x								x			
5	التنبؤ وبناء القدرة على الرؤيا المستقبلية		x			x							x
6	التخطيط: طرق إعداد الخطط الاستراتيجية		x									x	
7	أسس اتخاذ القرارات الذكية للصيدلي المتميز		x								x		
8	إدارة الوقت كأداة لتحقيق التميز			x			x					x	
9	إدارة الازمات وطرق مواجهتها		x				x						
10	دراسة جدوى إنشاء المشروع الجديد				x	x	x						x
11	طرق إدارة الصراع ومواجهتها			x			x						
12	طرق الإدارة ضمن فريق العمل			x			x	x					
13	مهارات الاتصال داخل المنظمة		x						x				
14	التنسيق وتنظيم الأعمال الرقابة كأداة لتحقيق الخطط المحددة		x										

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

x			x	الكتاب	إدارة الوقت كأداة لتحقيق 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.	د-1	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 والمسئولية الإجتماعية للمنظمات.	د-3	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-5	D9	**5.8 Demonstrate creativity and time management abilities.**
x			x	الكتاب	التنبؤ وبناء القدرة على الرؤيا المستقبلية. دراسة جدوى إنشاء المشروع الجديد.	د-6	D11	**5.10 Implement writing and thinking, problem-solving and decision- making abilities**

منسق المقرر: أ.د / عزة أحمد الشربيني

التاريخ: