Level 5

Semester (9)

Course code	Course Title
PT 518	Industrial Pharmacy(2) & Good Manufacturing Practice.
PH 519	Toxicology & Forensic Medicine
PG 518	Nutraceuticals
PD 513	Medicinal Chemistry (3)
MP 514	Pathology
PG 519	Technology of natural drugs

Semester (10)

Course code	Course Title
PM 525	Public Health
PD 524	Drug Design
PB 524	Clinical Biochemistry
PT 529	Pharmaceutical Business administration
PP 528	Drug Marketing
MF 5210	First Aids & emergency Medicine
PHE 06	Geriatrics
PDE 12	Drug Targeting
PBE 13	Nutrition in Disease, Prevention and Cure

University: Mansoura
Faculty : Pharmacy
Department : Pharmaceutics
Course title:

Program on which the course is given	B. Pharm (credit hours program)
Academic Level	Fifth Level, semester one
Date of course specification approval	20/9/2023

3- Basic Information : Course data :

Course title:	Industrial Pharmacy-2	**Code:**	PT518
Specialization:	**pharmaceutical sciences**		
Prerequisite:			
Teaching Hours:	**Lecture: 1**	**Practical:**	1
Number of units: (credit hours)	2		

2- Course Aims:

At the end of the course, the students will be able:

1. Know the unit operation and unit processes.
2. Understand the different details of quality principles, quality parameters and Good Manufacturing Practice Elements (GMP).
3. Understand the different theories and principles of some unit operations (size analysis, size separation, size reduction, size enlargement, mixing and emulsification).
4. Know quality control tests of some dosage forms.

3- Course Learning Outcomes

Upon completing the course, the student will be able to dominate the following key elements

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

Program K. element no.	Course K. element no.	Course K. element
1.1.7	**1.1.7.1**	Identify the different unit operations in pharmaceutical industry
	1.1.7.2	Recognize the basics of dosage from manufacture and design.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.2.3	**2.2.3.1**	Adopt the ability of logic thinking and rational proceeding in industry.

DOMAIN 4: PERSONAL PRACTICE D

Program K. element no.	Course K. element no.	Course K. element
4.1.2	**4.1.2.1**	Use clear language, pace, tone and non-verbal communication and writing skills when dealing with patients, other health team and communities.
4.2.2	**4.2.2.1**	Practice self-learning to improve professional skills.
4.3.2	**4.3.2.1**	Adopt qualifications to start a career in the pharmaceutical manufacturing.

3- Contents:-

Week No	Topics	No.of hours	Lecture	Practical
1.	Introduction on particle size analysis	1	1	-
2.	Particle size analysis (methods and equipment)	1	1	-
3.	Particle size separation	1	1	-
4.	Mixing (Principle, different mixing mechanisms)	1	1	-
5.	Mixing (Equipment and operation)	1	1	
6.	Emulsification	1	1	-
7.	Homogenization	1	1	
8.	**(Mid-term Exam)**			
9.	Particle size reduction (Principle and objectives)	1	1	
10.	Particle size reduction (Equipment)	1	1	-
11.	Particle size enlargement (Principle and objectives) , self-learning	1	1	-
12.	Particle size enlargement (Equipment)	1	1	-
13.	Extraction	1	1	
14.	GMP	1	1	-
	Week 15 Final written & oral			
	Practical Topics			
1	Introduction	2		1
2	Sieving	2		1
3	Microscopy	2		1

4	Introduction of powder flow properties + powder flow rate.	2		1
5	Angle of repose.	2		1
6	Problems on Angle of repose.	2		1
7	Carr's index & Hausner ratio.	2		1
8	**Week 8 Mid-term Exam**			
9	Problems on Carr's index & Hausner ratio.	2		1
10	Quality control of suppository (melting point, disintegration, dissolution)	2		1
11	Quality control of suppository (content and weight uniformity)	2		1
12	Problems on Quality control of suppository	2		1
13	Revision	2		1
14 & 15	Practical Exam			
15 & 16	Final written & Oral Exam			

4- Teaching and learning Methods :

4.1	**Computer aided learning:** **g- On line learning through My Mans "Mansoura University" as recorded – video lectures.** **h- Inter active discussion through My Mans.**	**Week number** **1-14**
4.2	**Self-learning**	**10**
4.3	**Practical labs using white board, power point presentation and On line learning through My Mans "Mansoura University" as recorded – video Labs.**	**1-7& 9-13**
4.4	**Class Activity**	**3-5**

5- Student Assessment:

a- Assessment methods:

1-Written exam	**1.1.7.1/1.1.7.2/2.2.3.1**
2-Practical exam	**2.2.3.1/4.1.2.1/4.2.2.1/4.3.2.1**
3-Oral	**1.1.7.2/2.2.3.1/4.1.2.1**
4-Midterm exam	**1.1.7.1/1.1.7.2/2.2.3.1/4.1.2.1/4.2.2.1/4.3.2.1**

b- Assessment schedule

Assessment 1	**Mid-term**	**^{8th}week**
Assessment 2	**Practical**	**14^{th} &15^{th}week**
Assessment 3	**Written**	**15^{th} &16^{th}week**
Assessment 4	**Oral**	**15^{th} &16^{th}week**

c-Weighting of assessments

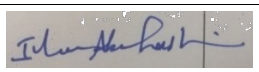
1	**Mid-term examination**	**10 %**
2	**Practical examination**	**25 %**
3	**Final-term examination**	**50 %**
4	**Oral examination**	**15 %**
Total		**100%**

6 - List of References

N0.	Reference	type
1	course notes	course notes
2	1- The theory and practice of industrial pharmacy 2nd Ed., lea & Febiger, Philadelphia, (2002). 2- Handbook of Pharmaceutical Manufacturing Formulations 2nd Ed.,, Sarfaraz K. Niazi (2009) 3- QUALITY, Pharmaceutical Engineering Series, Kate McCormick, Butterworth-Heinemann, London, (2002).	Books
3	http://www.pharmaceutical technology.com http://www.sciencedirect.com http://www.pubmed.com http://www.google.com	Web sites

7- Matrix of knowledge and skills of the course

Study Week	Course contents	Domain 1			Domain 2		Domain 4		
		1.1.7.1	1.1.7.2		2.2.3.1		4.1.2.1	4.2.2.1	4.3.2.1
1	Introduction on particle size analysis	□	□				□	□	□
2	Particle size analysis (methods and equipment)				□		□	□	□
3	Particle size separation	□	□				□	□	□
4	Mixing (Principle, different mixing mechanisms)				□		□	□	□
5	Mixing (Equipment and operation)	□	□				□	□	□
6	Emulsification				□		□	□	□
7	Homogenization				□		□	□	□
8	Particle size reduction (Principle and objectives)	□	□				□	□	-
9	Particle size reduction (Equipment)	□	□		□		□	□	□
10	Particle size enlargement (Principle and objectives) , self learning	□	□				□	□	-
11	Particle size enlargement (Equipment)	□	□				□	□	-
12	Extraction	□	□				□	□	□
13	GMP	□	□				□	□	
14	Revision	□	□				□	□	□

Course Coordinator	**Dr / Amira Mohsen Motawea** 
Head of department	**Prof Dr/ Irhan Ibrahim Abu-Hashim** 

المستوى الخامس	توصيف مقرر: Toxicology and Forensic Medicine

University: Mansoura
Faculty : Pharmacy
Department : Toxicology and Pharmacology
Course title: Toxicology and Forensic Medicine

Program on which the course is given	B. Pharm (credit hours)
Academic Level	Five – Semester one
Date of course specification approval	September 2023

A. Basic Information: Course data:

Course title:	Toxicology and Forensic Medicine		**Code:**	PH-519
Specialization:	Health and Environmental Sciences			
Prerequisite:	Pharmacology-1			
Teaching Hours:	**Lecture:**	2	**Practical:**	1
Number of units: (credit hours)	3			

B. Professional Information:

1 .Course Aims:

To understand the basic principles of toxicology and the different disciplines of toxicology.
To gain knowledge regarding the supportive measures, therapeutic interventions, specific antidotes as general guidelines of treatment modalities.
To learn the basics of clinical toxicology that will enable the student to diagnose and manage intoxicated patients.
To understand the serious consequences of exposure to therapeutic drugs, environmental and occupational chemicals

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element	Course K. element	Course K. element

no.	no.	
1.1.5	1.1.5.1	Use health informatics to improve the quality of health and nutritional care, manage resources and optimize patient safety and understand metabolic disorders.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Contribute to decision making processes for recognized drug-related and pharmaceutical care problems
	2.4.3.2	Recognize and take appropriate action when signs, symptoms and risk factors that relate to medical or health problems that fall into the scope of practice of other health professionals are encountered.
2.4.4	2.4.4.1	Evaluate toxicity profiles of chemicals and other xenobiotics and investigate poisons in biological samples.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.4	3.2.4.1	Recommend appropriate information about untoward and toxicity of medicinal agents and other xenobiotics including possible sources, signs, symptoms and treatment options.
3.2.5	3.2.5.1	Advise patients, doctors, nurses, and other prescribers about safe, effective and cheap medication therapy.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.3.2	1	Promote continuous professional development by practicing self and independent learning.

3- Contents:-

Week No	Topics	No.of hours	Lecture (hr)	Practical
1.	Principles and Introduction to toxicology	2	2	-
2.	Drug-induced toxicity and drug abuse	2	2	-
3.	Drug-induced toxicity and drug abuse	2	2	-
4-5	Heavy metal toxicity	4	4	-
6.	Animal, Plant and Marine poisons	2	2	-
7.	Animal, Plant and Marine poisons	2	2	-
8.	Environmental and Occupational Toxicology	2	2	-
9.	Environmental and Occupational Toxicology	2	2	-
10.	Forensic Medicine	2	2	-
11.	Forensic Medicine	2	2	-
12-13	Clinical toxicology	4	4	-
14.	**Revision and quiz**			
15.	**Final written & oral**			
	Practical topics			
1.	**Acute toxicity determination**	1	-	1
2.	**Cyanide toxicity**	1	-	1
3.	**Cardiac glycosides toxicity**	1	-	1
4.	**Local toxicity**	1	-	1
5.	**Lactose intolerance**	1	-	1
6.	**Benzodiazepine toxicity**	1	-	1
7.	**Hydrocarbon aspiration**	1	-	1
8.	**Mid term**			
9-10	**Back spot poison oak contact dermatitis**	2	-	2
11-12	**Drug-induced anaphylactic**	2	-	2

	shock			
13.	Student Seminar	1	-	1
14.	Practical Exam			

4- Teaching and learning Methods:

1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • On line learning through my mans "Mansoura university "as recorded – video lectures Inter active discussion through My Mans
2	Self-learning
3	Practical session using chemicals and laboratory equipment and/ or tutorials
4	Class Activity: Group discussion offline and online.
6	Brainstorming
7	Research assignments

5- Student Assessment:

a- Assessment methods:

1-Mid term								
2-Written exam	1.1.5.1	2.4.3.1, 2.4.3.2	2.4.4	2.4.5	3.2.4	3.2.9	3.2.10	4.3.2
	1.1.5.1	2.4.3.1, 2.4.3.2	2.4.4	2.4.5	3.2.4	3.2.9	3.2.10	4.3.2
3-Practical exam	1.1.5.1	2.4.3.1, 2.4.3.2	2.4.4	2.4.5	3.2.4	3.2.9	3.2.10	4.3.2
4-Oral	1.1.5.1	2.4.3.1, 2.4.3.2	2.4.4	2.4.5	3.2.4	3.2.9	3.2.10	4.3.2

b- Assessment schedule

Assessment 1	Mid-term Exam	8th week
Assessment 2	Practical Exam	14th week
Assessment 3	Written Exam	15th week
Assessment 4	Oral Exam	15th week

c- Weighting of assessments

1	Mid-term examination	10 %
2	Final-term examination	50 %
3	Oral examination	15 %
4	Practical examination & Semester work	25 %
5	Other types of assessment	0
Total		100%

6 - List of References

N0.	Reference	type
1	Churchill's Pocketbook of Toxicology(Alisonl, Jones, PaulI, Dargan,2007)	Book
2	Goldfrank's Mannual of Toxicologic emergencies (Michael J Darelano 2002)	Book
3	https://www.ekb.eg	

7- Matrix of knowledge and skills of the course

Study week	Course contents / K. elements	Domain 1	Domain 2			Domain 3			Domain 4
		1.1.8	2.4.3	2.4.4	2.4.5	3.2.4	3.2.9	3.2.10	4.3.2
1.	Principles and Introduction to toxicology	✓				✓			✓
2.	Drug-induced toxicity and drug abuse	✓	✓	✓		✓	✓		✓
3.	Drug-induced toxicity and drug abuse	✓							
4-5	Heavy metal toxicity		✓	✓		✓	✓		✓
6.	Animal, Plant and Marine poisons								
7.	Animal, Plant and Marine poisons	✓	✓	✓	✓	✓		✓	✓
8.	Environmental and Occupational Toxicology					✓			✓
9.	Environmental and Occupational Toxicology					✓		✓	✓
10.	Forensic Medicine	✓	✓	✓	✓	✓		✓	✓
11.	Forensic Medicine	✓	✓	✓	✓	✓		✓	✓
12-13	Clinical toxicology	✓	✓	✓	✓	✓		✓	✓
14.	Revision and quiz	✓	✓	✓	✓	✓		✓	✓

Course	Prof. Dr. Manar A Nader

Coordinator :	
Head of department	Prof. Dr. Manar A Nader

بكالوريوس الصيدلة (ساعات معتمده – Credit Hours)

Course Specification

Academic year: 2023/2024

Course name: **Nutraceuticals**	**اسم المقرر: المواد الغذائية**
Academic Level: fifth	**المستوى الأكاديمي : الخامس**
Scientific department: Pharmacognosy	**القسم العلمي : العقاقير**
Head of Department: Prof. Mahmoud Fahmi Elsebai	**رئيس القسم :**
Course Coordinator: Prof. Dr. Ashraf Taha Khalil.	**منسق المقرر** : ا. د.أشرف طه خليل

Program on which the course is given	B. Pharm
Academic Level	Level 5, Second semester
Date of course specification approval	9/2023

1- Basic Information : Course data :

Course Title	Nutraceuticals
Course Code	PG518
Prerequisite	Registration
Teaching credit Hours: Lecture	1
: Practical	…….
Total Credit Hours	1

2- Course Aims:

1.1 Provide the student with the basic information about functional food

1.2 Define the main components of nutraceuticals and functional food

1.3 Help the student gain an understanding of the therapeutic properties of the different categories of functional food.

1.4 Enable students to understand the functional food concept as related to ingredients efficacy and safety. In addition, it familiarizes students with examples of major bioactive components in food.

3- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no	Course K. element no	Course K. element
1.1.1	1.1.2.1	Utilize the proper pharmaceutical terms especially in terms of functional food.
1.1.3	1.1.3.1	Integrate knowledge of basic sciences to improve the quality of natural pharmaceutical and nutraceuticals.
1.1.4	1.1.4.1	Articulate knowledge from basic sciences to explain vitamins, minerals and functional food to evaluate their appropriateness, effectiveness, and safety in individuals and populations.

Domain 2: Professional and Ethical Practice

Program K. element no	Course K. element no	Course K. element
2.2.1	2.2.1.1	Analyze and evaluate natural functional food materials from different origins.
2.2.2	2.2.2.1	Conduct principles of quality control guidelines related to neutraceutical industry of the natural products from different sources in addition to possible interactions with some synthetic prescribed medications.
2.3.1	2.3.1.1	Utilize the appropriate methods to identify effectiveness of the food, as well as their handling and disposal.

Domain 4: Personal Practice:

Program K.	Course K.	Course K. element

element no	element no	
(4.2.1)	(4.2.1.1),	Communicate effectively in a scientific language by verbal and written means regarding in the field of health care and medicinal plants regarding the studied topics.

4- Contents :-

Week No	Topics	No. of hours	Lecture credit hours	Practical credit hours
1.	Introduction to nutraceuticals	2	2	
2.	functional food	2	2	
3.	Probiotics	2	2	
4-5	Prebiotics	4	4	
6	Bioactive lipids	2	2	
7	Bioactive peptides	2	2	
8	Bioactive isoprenoids	2	2	
9	phenolic compounds	2	2	
10	Dietary supplements introduction	2	2	
11	Dietary supplements for obesity	2	2	
12	Dietary supplements for hypertension	2	2	
13	Dietary supplements for diabetes.	2	2	
14	Vitamins and minerals	2	2	
16	Week 16 Final written & oral			

5- Teaching and learning Methods:

5.1	Computer aided learning: a. On line learning through my mans "Mansoura university "as recorded – video lectures b. Inter active discussion through My Mans
5.2	Practical session using laboratory equipment (microscope and glass wares)
5.3	Research assignments

5.4	Case study
5.5	Discussion session

6- Student Assessment:

a- Assessment methods:

1-Written exam	To assess understanding, intellectual, professional
2-Practical exam	To assess professional and practical skills
3-Oral	To assess Knowledge, understanding, intellectual skills, general skills and confidence
4-Quizzes	To assess Knowledge, understanding and intellectual skills
5-Case study	To assess the skills of problem-solving and date presentation

b- Assessment schedule

Assessment 1	Periodical exam	8th week
Assessment 2	Practical exam	15th week
Assessment 3	Oral exam	16th week
Assessment 4	Written exam	16th week

c- Weighting of assessments

1	Mid-term examination & Semester work	10%
2	Final-term examination	75%
3	Oral examination	15%
Total		100%

7 - List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos prepared by stuff members	Videos on platform
3.	Joanne Slavin (2013) Fiber and Prebiotics: Mechanisms and Health Benefits, Nutrients, 5, 1417-1435	Textbook

4.	Mary Ellen Sanders, Daniel J. Merenstein, Gregor Reid, Glenn R. Gibson and Robert A. Rastall (2019) Probiotics and prebiotics in intestinal health and disease: from biology to the clinic, Nature	**Textbook**
5.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	**websites**

8- Matrix of knowledge and skills of the course

Week No.	Course contents / K. elements	Domain 1				Domain 2				Domain 4
		1.1.2.1	1.1.3.2	1.1.4.1		2.2.1.1	2.2.2.1	2.3.1.1		4.1.2.1
1	Introduction to nutraceuticals	✓				✓		✓		✓
2	functional food		✓	✓		✓				
3	Probiotics		✓	✓		✓	✓			
4-5	Prebiotics		✓	✓		✓	✓			✓
6	Bioactive lipids	✓				✓		✓		
7	Bioactive peptides		✓				✓			✓
8	Bioactive isoprenoids		✓	✓		✓	✓			
9	phenolic compounds		✓	✓		✓	✓			
10	Dietary supplements introduction		✓	✓		✓	✓	✓		✓

11	**Dietary supplements for obesity**		✓	✓		✓	✓	✓		✓
12	**Dietary supplements for hypertension**	✓				✓		✓		
13	**Dietary supplements for diabetes.**		✓	✓			✓			✓
14	**Vitamins and minerals**		✓	✓			✓			✓

Course Coordinator :	**Prof. Dr. Ashraf Taha Khalil**
Head of Department	**Prof. Mahmoud Fahmi Elsebai**

بكالوريوس الصيدلة (ساعات معتمدة – **Credit hours**)

Course Specification

Academic year: 2023/2024

Course name: Medicinal Chemistry III	دوائية 3 **اسم المقرر** : كيمياء
Academic Level: level 5	الخامس **المستوى الأكاديمي** :
Scientific department: Medicinal Chemistry	**القسم العلمي** : الكيمياء الدوائية
Head of Department: Prof. Dr. Mohammed A. Mostafa	**رئيس القسم :** ا.د/ محمد أحمد مصطفى
Course Coordinator: Prof. Dr. Mohammed A. Mostafa	**منسق المقرر :** ا.د/ محمد أحمد مصطفى

University	Mansoura
Faculty	Pharmacy
Department offering the course	Medicinal Chemistry Department
Department supervising the course	Medicinal Chemistry Department
Program on which the course is given	Bachelor in Pharmacy- Credit hours
Academic Level	Level 5, first semester, 2023/2024
Date of course specification approval	**6/9/2022**

A. Basic Information: Course data:

Course Title	Medicinal Chemistry III
Course Code	PD 513
Prerequisite	Pharmaceutical organic chemistry 3
Teaching credit Hours: Lecture	2
: Practical	1
Total Credit Hours	3

B. Professional Information:

1. Course Aims:

This course enables the students to:

- Recognizing the relationships between the chemical structures of different chemotherapeutic drugs and biological activities.
- Understand the different mode of action of different classes of anticancer agents.

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.2	1.1.2.1	Use proper medical expression in pharmacy practice and remember international nonproprietary names (Generic name) of drugs.
1.1.4	1.1.4.1	Recognize the mode of action and therapeutic uses of chemotherapeutic, anticancer and endocrine-related drugs.
1.1.7.	1.1.7.1.	Collect and analyze medical information that can be applied in drug industry and patient care.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.4.3.	2.4.3.1.	List the various structural subclasses of chemotherapeutic drugs, anticancer and endocrine-related drugs and identify the representative pharmacophore in each pharmacological class.
2.5.3	2.5.3.1	Adapt the concepts of medicinal chemistry used in the systemic approach applied in drug development.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.1	3.2.1.1	Detect the possible side effects and toxicity to a given drug molecule based on its structural features.
3.2.5	3.2.5.1	Counsel the patients about proper use of antibiotics and prescribe therapeutic recommendations based on an understanding of drug chemistry.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Gather and analyse data, recognize problems independently and in participation with other drug chemistry experts to solve these problems.
4.2.1	4.2.1.1	Communicate efficiently in a clear scientific language when dealing with other health team related to the studied topics.
4.3.2	4.3.2.1	Practice self-learning to promote continuous professional development and lifelong learning.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	**Introduction to chemotherapy**	2
2	**Penicillins**	2
3	**Cephalosporins**	2
4	**Non-classical antibiotics**	2
5	**antineoplastic agents**	2
6	**antineoplastic agents (Part 2)**	2
7	**Quinolones**	2
8	**chloramphenicol, UTIs**	2
9	**Macrolides**	2
10	**aminoglycosides and lincomycins**	2
11	**antiprotozoal drugs, anthelmintics**	2
12	**tetracyclins (self-learning)**	2
13	**Sulfonamides**	2
14	**Revision and quiz**	2
15	**Final written and oral exam**	-
Week No.	**Practical topics**	**Practical credit hours**
1.	Case study: *Penicillins*	1
2.	Case study: *Macrolides & Sulfonamides*	1
3.	Case study: *Tetracyclines*	1
4.	Case study: *Quinolones*	1
5.	Case study: *Antifungals*	1
6.	Case study: *Antivirals*	1
7.	Evaluation Case Study 1	1
8.	**Mid-term Exam**	
9.	Chem 3D: *(Introduction- Display mode- Measurements)*	1

10.	Chem 3D: *(Energy minimization- Overlay)*	1
11.	Chem 3D: *(Color by charge- Invert stereochemistry)*	1
12.	Chem 3D: *(Dihedral chart- Deviation from the plane)*	1
13.	Chem 3D: *(Dihedral chart- Deviation from the plane) Part 2*	1
14	**Practical exam (Chem 3D)**	-

4- Teaching and learning Methods:

No.	Teaching and learning Methods	Week No.
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • On line learning through my mans "Mansoura university "as recorded – video lectures • Inter active discussion through My Mans	1-7 and 9-14
4.2	Self-learning	12
4.3	Practical session using computer software (Chem 3D) and tutorials with possible application of OSCE.	1-7 and 9-14
4.4	Class Activity: Group discussion offline and online.	1-7 and 9-14
4.5	Problem – based learning and brainstorming.	1-7 and 9-14
4.6	Research assignments.	12

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.2.1, 1.1.4.1, 2.4.3.1., 2.5.3.1, 3.2.1.1, 4.1.2.1, 4.3.2.1.
2-Practical exam	1.1.2.1, 1.1.4.1, 1.1.7.1, 2.4.3.1., 3.2.1.1, 3.2.5.1.
3-Oral	1.1.2.1, 1.1.4.1, 2.4.3.1., 2.5.3.1, 3.2.1.1, 3.2.5.1, 4.2.1.1.
4- Periodical exam	1.1.2.1, 1.1.4.1, 2.4.3.1., 2.5.3.1, 3.2.1.1, 4.1.2.1, 4.3.2.1.

b. Assessment schedule

Assessment 1	Periodical exam	8th week
Assessment 2	Practical examination and tutorial	14th week
Assessment 3	Written exam	15 th week
Assessment 4	Oral exam	15 th week

c. Weighing of assessments

1	Periodical exam	10%
2	Practical examination and tutorial	25%
3	Final-term written examination	50%
4	Oral examination	15%
Total		100%

6- Facilities required for teaching and learning

- Class room	Data show- Computers, Internet. (Available)
- Laboratory facilities	White board – Computer Software (Chem 3D). (Available)

7- Matrix of course content versus course k. elements:

Week No.	Course contents / K. elements	Domain 1				Domain 2			Domain 3		Domain 4
		1.1.2.1	1.1.4.1	1.1.7.1		2.4.3.1	2.5.3.1		3.2.1.1		4.3.2.1
1	Introduction to chemotherapy	✓	✓	✓		✓	✓		✓		
2	Penicillins	✓	✓	✓		✓	✓		✓		
3	Cephalosporins	✓	✓	✓		✓					
4	Non-classical antibiotics	✓	✓			✓	✓		✓		
5,6,7	antineoplastic agents, Quinolones	✓	✓			✓	✓		✓		
8	chloramphenicol, UTIs	✓	✓			✓	✓		✓		
9	Macrolides	✓	✓			✓	✓		✓		
10	aminoglycosides and lincomycins	✓	✓			✓	✓		✓		
11	antiprotozoal drugs, anthelmintics	✓	✓			✓	✓		✓		
12	tetracyclins (self-learning)	✓	✓			✓	✓		✓		
13	Sulfonamides	✓	✓			✓	✓		✓		✓

14	Revision and quiz	✓	✓			✓	✓		✓		✓
1-7 9-13	**<u>Practical topics:</u>** • **Case study: Penicillins** • **Case study: Macrolides & Sulfonamides** • **Case study: Tetracyclines** • **Case study: Quinolones** • **Case study: Antifungals** • **Case study: Antivirals** • **Mid-term Exam** • **Case Study Sheet** • **Chem 3D: (Introduction- Display mode- Measurements)** • **Chem 3D: (Energy minimization- Overlay)** • **Chem 3D: (Color by charge- Invert stereochemistry)** • **Chem 3D: (Dihedral chart- Deviation from the plane)**	✓	✓			✓	✓		✓		

8- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
2.	Recorded videos prepared by stuff members	**Videos on platform**
3.	"Foye's Principles of Medicinal Chemistry", 8th Edition, (David A. Williams, Thomas L. Lemke & William O. Foye, Editors), Lippincott Williams & Wilkins, 2017.	**Book**
4.	"Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry" 12th Edition, (J. H. Block and J. M. Beale Jr, Editors), Lippincott Williams & Wilkins, Philadelphia, PA, 2011.	**Book**
5.	"An Introduction to Medicinal Chemistry", 6th Revised Edition, (Graham L. Patrick), Oxford University Press, USA, 2017.	**Book**
6.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com	**websites**

Course Coordinator	**Prof. Dr. Mohamed Ahmed Ahmed Mostafa** 
Head of Department	**Prof. Dr. Mohamed Ahmed Ahmed Mostafa**

Date: 6/9/2023

Course Specification

2023- 2024

Faculty of Pharmacy

Mansoura University

Fifth level

Course specification of Pathology

University: Mansoura University (MU)

Faculty : Medicine

Department : Pathology

Course title: Pathology

Program on which the course is given	B. Pharm.
Academic Level	Fifth Level, first semester, 2021-2022
Date of course specification approval	10/9/2023

1- Basic Information : Course data :

Course title:	Pathology	**Code:** MP 514	
Specialization:	Medical		
Prerequisite:			
Teaching Hours:	**Lecture:** 1	**Practical:**1	
Number of units: (credit hours)	2		

2- Course Aims:

On completion of the course, the student will be able to recognize different diseases regard pathologic terminology, pathogenesis, and diagnosis bases on morphologic changes.

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	Define inflammation and its pathogenesis and classification with comparison between them.
	1.1.1.2	Define repair & identify its types. Enumerate complication and factors affecting repair.
1.1.4	1.1.4.1	Define & identify different disorders (cardiac and respiratory).

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.1.2	2.1.2.1	Establish the best use of knowledge regarding patient health and associated ethical guidelines.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.1.4	3.1.4.1	Formulate a systemic approach for the laboratory diagnosis of common infectious clinical conditions and select the most appropriate tools.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.2.1	**4.2.1.1**	Use the correct medical terms related to different diseases when dealing with different members of the community.
4.3.2	**4.3.2.1**	Use different approaches to ensure ongoing professional development including self-learning and establishing a strategy to achieve this aim.

3- Contents:- Theoretical

Week No	Topics	Lecture credit (hr.)	Practical credit hour
1.	Introduction to pathology	1	
2.	Adaptation, reversible and irreversible cell injury	1	
3.	Intra and extracellular accumulation of different substances	1	
4.	Classification and pathogenesis of acute inflammation	1	
5.	Chronic inflammation	1	
6	Pathology of repair	1	
7	Pathology of different circulatory disorders	1	
8	Introduction and classification of neoplasia	1	
9	Respiratory disorders	1	

10	Respiratory disorders (continued)	1	
11	Cardiovascular disorders	1	
12	Cardiovascular disorders (continued)	1	
13	Self-learning topic	1	
14	Revision and quiz	1	
16	**Final written & oral exam**		
	Practical topics		
1	Introduction to pathology		1
2	Adaptation and Necrosis		1
3	Intra and extracellular accumulation of different substances		1
4	Acute inflammatory diseases		1
5	Chronic inflammatory diseases		1
6	Complication of repair and scar		1
7	Infraction and hemorrhage		1
8	**Mid-term exam**		
9	gangrene.		1
10	Thrombosis		1
11	Tuberculosis.		1

12	bilharziasis		1
13	Benign and malignant tumors		1
14	Revision		1
15	Practical exam		

4- Teaching and learning Methods:

	Teaching and learning Methods:	week
5.1	Computer aided learning: a. Lectures using Data show, PowerPoint presentations b. Distance learning ● Online learning through my mans "Mansoura university "as recorded /video lectures. ● Interactive discussion through My Mans	1-14
5.2	Self-learning	13
5.3	Class Activity: Group discussion offline and online.	12
5.4	Problem – based learning and brainstorming	12

5- Student Assessment:

1 Assessment methods:

Assessment Methods	K elements to be assessed
1- Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.1.2, 1.1.4.1 , 2.1.2.1, 3.1.4.1, 4.2.1.1, 4.3.2.1
2-Practical exam	1.1.1.1, 1.1.1.2, 1.1.4.1, 2.1.2.1, 3.1.4.1
3-Written exam	1.1.1.1, 1.1.1.2, 1.1.4.1, 2.1.2.1, , 3.1.4.1, 4.2.1.1, 4.3.2.1

4-Oral	1.1.1.1, 1.1.1.2, 1.1.4.1, , 2.1.2.1, 2.4.5.1, 3.1.4.1, 4.2.1.1, 4.3.2.1

2 Assessment schedule

Assessment 1	Mid-term	8th week
Assessment 2	Practical	15th week
Assessment 3	Written	16th week
Assessment 4	Oral	16th week

3 Weighting of assessments

1.	Mid-term examination	10 %
2.	Practical examination and semester work	25 %
3.	Oral examination	15 %
4.	Final-written examination	50 %
Total		100 %

6 - List of References

No.	Reference	type
1	Pathological basis of diseases (Robbins and Cotran pathology)	Book
2	Lectures notes prepared by staff members	Course notes
3	https://www.ekb.eg	website

7- Matrix of course content versus course k. elements:

Study Week	Course contents	Domain 1			Domain 2	Domain 3	Domain 4	
		1.1.1.1	1.1.1.2	1.1.4.1	2.1.2.1	3.1.4.1	4.2.1.1	4.3.2.1
1	Introduction to pathology	√	√	√		√		
2	Adaptation, reversible and irreversible cell injury	√	√	√		√		
3	Intra and extracellular accumulation of different substances		√	√		√		
4	Classification and pathogenesis of acute inflammation		√	√		√	√	√
5	Chronic inflammation		√	√		√	√	√
6	Pathology of repair	√	√	√	√	√	√	√
7	Pathology of different circulatory disorders		√	√	√	√	√	√
8	Introduction and classification of neoplasia		√	√		√	√	√
9	Respiratory disorders		√	√		√	√	√
10	Respiratory disorders (continued)		√	√		√	√	√

11	Cardiovascular disorders		√	√		√	√	√
12	Cardiovascular disorders (continued)		√	√		√	√	√
13	Self-learning topic		√	√		√	√	√
14	Revision and quiz	√	√	√	√	√	√	√

Practical

Study Week	**Course contents**	**Domain 1**			**Domain 2**	**Domain 3**	**Domain 4**	
		1.1.1.1	**1.1.1.2**	**1.1.4.1**	**2.1.2.1**	**3.1.4.1**	**4.2.1.1**	**4.3.2.1**
1	Introduction to pathology	√	√	√		√		
2	Adaptation and Necrosis	√	√	√		√		
3	Intra and extracellular accumulation of different substances		√	√		√		
4	Acute inflammatory diseases		√	√		√	√	√
5	Chronic inflammatory diseases		√	√		√	√	√
6	Complication of repair and scar	√	√	√	√	√	√	√

7	Infraction and hemorrhage		√	√	√	√	√	√
9	gangrene.		√	√		√	√	√
10	Thrombosis		√	√		√	√	√
11	Tuberculosis.		√	√		√	√	√
12	bilharziasis		√	√		√	√	√
13	Benign and malignant tumors		√	√		√	√	√
14	Revision	√	√	√	√	√	√	√

Course Coordinator :	**Dr. Ramy Abdelsalam**
Head of supervision department	**Prof . Elsayed E. Habib**

Date: 10/9/2023

بكالوريوس الصيدلة (ساعات معتمده – Credit Hours)

Course Specification

Academic year: 2023/2024

Course name: Technology of natural drugs	**اسم المقرر :** تكنولوجيا الأدوية الطبيعية
Academic Level: level five	**المستوى الأكاديمي :** الخامس
Scientific department: Pharmacognosy	**القسم العلمي :** العقاقير
Head of Department: Prof. Mahmoud Fahmi Elsebai	**رئيس القسم :**
Course Coordinator: Assist. Prof. Mona Farouk El-Neketi	**منسق المقرر:** د/ منى فاروق النقيطى

Program on which the course is given	B. Pharm
Academic Level	Level five, semester one
Date of course specification approval	9/2023

1- Basic Information : Course data :

Course Title	Technology of natural drugs
Course Code	PG519
Prerequisite	Registration
Teaching Hours: Lecture	*1*
Practical	
Total Credit Hours	*1*

2- Course Aims:

1. Provide student with the basic concepts of plant tissue culture technique and its application in the area of production of plant secondary metabolites
2. Be aware with the concept of microbial biotransformation
3. Apply biotransformation reactions for converting natural drug to more active metabolites.

3- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	List the raw materials used in different culture media and sterilization techniques
	1.1.1.2	Illustrate the principles of plant tissue culture and biotransformation techniques and their applications in the production of bioactive compounds
1.1.2	1.1.2.1	Utilize the proper pharmaceutical and medical tools in microbial transformation

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Apply plant tissue culture and biotransformation techniques in the production of valuable products.
2.2.3	2.2.3.1	Utilization of various tools and instruments of Biotechnology techniques for the production of natural products.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Retrieve and evaluate information, solve problems, and work effectively in a team.
4.2.1	4.2.1.1	Communicate effectively in a scientific language by verbal and written means in the field of health care and natural pharmaceutical preparations regarding the studied topics.
4.3.2	4.3.2.1	Practice independent learning to promote continuous professional development.

4- Contents :-

Week No	Topics	No. of hours	Lecture credit hours	Practical credit hours
1.	Introduction to Biotechnology and its Application in pharmacognosy	2	2	
2.	Principles of microbial transformation	2	2	
3.	Methods of microbial transformation	2	2	
4-5	Application of microbial transformation	4	4	
6	Application of biotechnology	2	2	
7	Future of microbial transformation	2	2	
8	Introduction to Plant Tissue culture	2	2	
9	Culture Tools	2	2	
10	Culture Techniques	2	2	
11	Culture Types	2	2	
12	Application of Plant Tissue Culture	2	2	
13	Control of secondary Metabolites Production (**self learning**)	2	2	
14	Revision & Quiz	2	2	
15	**Week 15 Final written & oral**			

5- Teaching and learning Methods:

5.1	**Computer aided learning:** **a. On line learning through my mans "Mansoura university "as recorded – video lectures** **b. Inter active discussion through My Mans**
5.2	**Practical session using laboratory equipment (microscope and glass wares)**
5.3	**Research assignments**
5.4	**Case study**
5.5	**Discussion session**

6- Student Assessment:

a- Assessment methods:

1-Written exam	To assess understanding, intellectual, professional
2-Practical exam	To assess professional and practical skills
3-Oral	To assess Knowledge, understanding, intellectual skills, general skills and confidence
4-Quizzes	To assess Knowledge, understanding and intellectual skills
5-Case study	To assess the skills of problem-solving and date presentation

b- Assessment schedule

Assessment 1	Periodical exam	8th week
Assessment 2	Practical exam	14th week
Assessment 3	Oral exam	15th week
Assessment 4	Written exam	15th week

c- Weighting of assessments

1	Mid-term examination & Semester work	10%
2	Final-term examination	75%
3	Oral examination	15%
	Total	100%

7 - List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos prepared by stuff members	Videos on platform

3.	**Michael Heinrich, Joanne Barnes, Simon Gibbons and Elizabeth M. Williamson;"Biotechnology of natural metabolites"2nd edition 2012 Elsevier Ltd.**	**Book**
4.	**http://www.sciencedirect.com /** **http://www.google scholar.com /** **http://www.pubmed.com** **https://www.ekb.eg**	**websites**
6.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	**websites**

8- Matrix of knowledge and skills of the course

Week No.	Course contents / K. elements	Domain 1				Domain 2			Domain 4		
		1.1.1.1	1.1.1.2	1.1.2.1		2.2.1.1	2.2.3.1		4.1.2.1	4.2.1.1	4.3.2.1
1	Introduction to Biotechnology and its Application in pharmacognosy	✓					✓		✓		
2	Principles of microbial transformation		✓	✓		✓			✓		
3	Methods of microbial transformation		✓	✓		✓			✓	✓	✓
4-5	Application of microbial transformation		✓	✓		✓			✓	✓	✓
6	Application of biotechnology		✓	✓		✓			✓	✓	✓
7	Future of microbial transformation		✓	✓		✓			✓		
8	Introduction to Plant Tissue culture		✓	✓		✓			✓		
9	Culture Tools	✓	✓			✓			✓		
10	Culture Techniques	✓	✓			✓			✓		
11	Culture Types	✓	✓			✓			✓		
12	Application of Plant Tissue Culture	✓	✓			✓			✓	✓	✓
13	Control of secondary Metabolites Production (**self learning**)	✓	✓			✓			✓	✓	✓
14	Revision & Quiz		✓			✓			✓	✓	✓

Mansoura University
Faculty of Pharmacy
Quality Assurance Unit
Credit Hours Program
Course Specification
2023- 2024

Course Coordinator :	**Dr. Mona Farouk El-Neketi**
Head of Department	**Prof. Mahmoud Fahmi Elsebai**

Mansoura University
Faculty of Pharmacy
Bachelor in Pharmacy –
Credit hours

Course specification
2023- 2024

بكالوريوس الصيدلة (Credit hours)

Course Specification

Academic year: 2023/2024

Course name: Public Health	اسم المقرر : صحة عامة
Academic Level: level 5	المستوى الأكاديمي: الخامس
Scientific department: Microbiology and Immunology	القسم العلمي : الميكروبيولوجى و المناعة
Head of Department: Prof. El-Sayed Elsherbieny	رئيس القسم: ا.د/ السيد الشربينى حبيب
Course Coordinator: To be nominated	منسق المقرر : ا.د / مني شعبان Mona Shaaban

University	Mansoura
Faculty	Pharmacy
Department offering the course	Microbiology and Immunology
Department supervising the course	Microbiology and Immunology
Program on which the course is given	Bachelor in Pharmacy- Credit hours
Academic Level	Level 5 , 2nd, 2022/2023
Date of course specification approval	**10-9-2023**

A. Basic Information: Course data:

Course Title	Public health
Course Code	PM 525
Prerequisite	Registration
Teaching Hours: Lecture	2
Teaching Credit Hours: Practical/ tutorial	0
Total Credit Hours	2

B. Professional Information:

1 .Course Aims:

1. Orienting the students to epidemiology and principles of maintaining good health

2. Recognizing different types of types of diseases and their etiology.

3. Knowing applications of different treatment strategies and immunization techniques and good nutrition to control different and prevent diseases

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	**1.1.1.1**	Recall the basic Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences.
1.1.5	**1.1.5.1**	Utilize different principles and health problems related to different fields of life to improve health.
1.1.6	**1.1.6.1**	Analyze available information and health problems related to different fields of life to prevent and minimize different health problems.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.1.1	**2.1.1.1**	Make the best use of knowledge regarding maternal, child and patient health to prevent expected diseases complications.
2.1.3	**2.1.3.1**	Cooperate professionally with health care team members to prevent disease

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.1.2	**3.1.2.1**	Develop appropriate methods of infection control to limit infections and promote public health awareness.
3.1.4	**3.1.4.1**	Formulate a systemic approach for the laboratory diagnosis of common infectious clinical conditions and select the most appropriate and cost effective tool leading to the identification of the causative organism.
3.2.6	**3.2.6.1**	Spread awareness regarding immunization strategies.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.1	**4.1.1.1**	Apply medical knowledge to participate in decision making required for solving of different health problems
4.1.2	**4.1.2.1**	Participate in developing solutions and preventive measures to avoid diseases or minimize the related complications
4.2.1	**4.2.1.1**	Use the correct medical terms related to different disease when dealing with different members of the community.

3- Course Content:

Week No	Topics	Lecture credit hours	Practical / Tutorial credit hours
1	Introduction	2	-
2	Environmental health	2	-
3	Airborne diseases (Part I)	2	-
4	Airborne diseases (Part II)	2	-
5	Food and water borne diseases (Part I)	2	-
6	Food and water borne diseases (Part II)	2	-
7	Contact diseases	2	-
8	Zoonotic diseases	2	-
9	Occupational diseases	2	-
10	Nosocomial Infections	2	-
11	Non-communicable diseases	2	-
12	Immunization	2	-
13	Maternal and Child Health	2	-
14	Waste management	2	-
16	Final written and oral exam		

4- Teaching and Learning Methods:

no.	Teaching and Learning Methods	week	k.elements to be addressed

5.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • On line learning through my mans "Mansoura university "as recorded – video lectures • Inter active discussion through My Mans	1-14	**1.1.1.1, 1.1.5.1,** 1.1.6.1,2.1.1.1, **2.1.3.1,** 2.1.3.1, 3.1.2.1,3.1.4.1,3.2.6.1 ,4.1.2.1,4.2.1.1, 4.1.1.1
5.2	Self-learning	14	4.1.1.1,4.1.2.1,4.2.1.1
5.3	Class Activity: Group discussion offline and online.		
5.4	Formative Assignments		

5- Student Assessment:

a- Assessment Methods:

1. Mid-term exam	**1.1.1.1, 1.1.5.1,** 1.1.6.1, **2.1.1.1, 2.1.3.1, 3.1.2.1,3.1.4.1,3.2.6.1**
2. Written exam	**1.1.1.1, 1.1.5.1, 1.1.6.1,2.1.1.1, 2.1.3.1, 3.1.2.1,3.1.4.1,3.2.6.1**
3. Oral	**1.1.1.1, 1.1.5.1,1.1.6.1,2.1.1.1, 2.1.3.1, 3.1.2.1,3.1.4.1,3.2.6.1 ,4.1.2.1,4.2.1.1, 4.1.1.1**

b. Assessment schedule

Assessment 1	**Mid-term exam**	**8th week**
Assessment 3	**Written**	**16th week**
Assessment 4	**Oral**	**16th week**

c. Weighing of assessments

1	Mid-term examination	10 %
2	Final-term examination	75 %
3	Oral examination	15 %
Total		100%

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos prepared by stuff members	Videos on platform
3.	Mitchell, Amber Hogan, 2020. Preventing Occupational Exposures to Infectious Disease in Health Care. A practical guide. Springer press.	Book
4.	Pinger, R.R. and Seabert, D., 2016. *An introduction to community & public health*. 9th edition, Jones & Bartlett Learning.	Book
5.	Edelman, C.L., Mandle, C.L. and Kudzma, E.C., 2017. *Health promotion throughout the life span-e-book*. Elsevier Health Sciences.	Book
6.	Perry, S.E., Hockenberry, M.J., Alden, K.R., Lowdermilk, D.L., Cashion, M.C. and Wilson, D., 2017. *Maternal Child Nursing Care-E-Book*.	Book
7.	Kasenga, F. ed., 2016. *Epidemiology of Communicable and Non-Communicable Diseases: Attributes of Lifestyle and Nature on Humankind*. BoD–Books on Demand.	Book
8.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	websites

Matrix 1: Course content and course key elements:

Study Week	Course contents	Domain 1			Domain 3		Domain 3			Domain 4		
		1.1.1.1	1.1.5.1	1.1.6.1	2.1.1.1	2.1.3.1	3.1.2.1	3.1.4.1	3.2.6.1	4.1.1.1	4.1.2.1	4.2.1.1
1	Introduction	√	√	√			√		√			
2	Environmental health	√	√	√			√		√			
3	Airborne diseases (Part I)	√	√	√		√	√		√			
4	Airborne diseases (Part II)	√	√	√		√	√		√			
5	Food and water borne diseases (part I)		√	√		√	√	√	√			
6	Food and water borne diseases (part II)		√	√		√	√	√	√			
7	Contact diseases		√	√		√	√		√	√	√	√
8	Zoonotic diseases	√	√	√	√	√	√		√	√	√	√
9	Occupational diseases		√	√	√		√		√	√	√	√
10	Nosocomial Infections	√	√	√		√	√		√	√	√	√
11	Non-communicable diseases		√	√			√		√	√	√	√
12	Immunization	√	√	√		√	√	√	√	√	√	√
13	Maternal and Child Health		√	√	√		√		√	√	√	√

14	Waste management		√	√		√	√		√	√	√	√

Course Coordinator :	Prof. Dr. Mona Shaaban Mona Shaaban
Head of department	Prof. Dr. El Sayed El Sherbiny Habib

Date: 10-9-2023

B. Pharm (Credit hours) Program

Course Specification

Academic year: 2023/2024

Fifth Level	**Course specification 2023- 2024**	Drug Design

توصيف مقرر تصميم الأدوية	**المستوى الخامس**
منسق المقرر	**رئيس القسم**
أ د. محمد أحمد أحمد مصطفى	**أ د. محمد أحمد أحمد مصطفى**

B. Pharm Program
Drug Design (PD-524)
(2023/2024)

University:	Mansoura
Faculty :	Pharmacy
Program on which the course is given	B. Pharm.
Department offering the course	**Medicinal Chemistry**
Academic Level	Fifth Level, Second Semester
Date of course specification approval	**6/9/2023**

1- Basic Information:

Course Title:	**Drug Design**
Course Code:	**PD-524**
Specialization:	Pharmaceutical
Prerequisite:	Medicinal Chemistry-1 (PD-411)
Teaching Hours: Lecture:	1 hr
Practical / Tutorial:	1 hrs
Total Credits:	2 Credit Hours

B. Professional Information

1. Overall aims of the Course:

1. Revealing the importance of drug design in Pharmacy curriculum.
2. Providing a broad introduction to drug discovery and development process.
3. Enhancing students' appreciation of the fundamental concepts of drug discovery process.
4. Covering the different strategies adopted in drug design process.
5. Grasping the basic principles and practical experience of different methods of drug design.
6. Presenting various examples of drugs designed based on application of different approaches.
7. Offering the opportunity to use molecular modeling software to design new molecules.

2. Course Key Elements:

a- Fundamental Knowledge

After completion of the course, the graduate should be able to dominate the following key elements:

PKE*	CKE**	Course Key element
1.1.2	1.1.2.1	Use of appropriate terminology related to drug design and development.
1.1.3	1.1.3.1	Review the various strategies applied in both classical and rational drug design.
1.1.4	1.1.4.1	Relate the structural and metabolic profiles of drugs to their onset, duration and action.
1.1.7	1.1.7.1	Evaluate case history of the development of recent drugs, and reasons of recalling other drugs.

**Program Key Elements number **course Key Elements number*

b- Professional and Ethical Practice

The graduate should be highly qualified to:

PKE*	CKE**	Course Key element
2.2.1	2.2.1.1	Employ the computer and molecular docking tools in designing new molecular structures.
2.4.3	2.4.3.1	Predict the effect of structural manipulation on the pharmacokinetic/ pharmacodynamic properties of drugs.
	2.4.3.2	Interpret the factors required to design new molecules for particular target.
	2.4.3.3	Create new molecules to combat problems in old drugs properties.

**Program Key Elements number **course Key Elements number*

c- Pharmaceutical Care

The graduate should be highly trained to have the ability to:

PKE*	CKE**	Course Key element
3.2.1	3.2.1.1	Relate the effect of the different physico-chemical parameters on drugs' actions, and justify the reasons to design new derivatives.

**Program Key Elements number **course Key Elements number*

d- **Personal Practice**

The graduate should be able to dominate the following key elements

PKE*	CKE**	Course Key element
4.1.2	4.1.2.1	Promote applicable critical thinking and problem solving capabilities.
	4.1.2.2	Work collaboratively with other members.
4.2.2	4.2.2.1	Use the existing technology to exhibit effective presentations.
4.3.2	4.3.2.1	Perform independent learning to promote self-development.

**Program Key Elements number **course Key Elements number*

3- Course Contents:

Lectures

Week (1hr/wk)	Topics	Hr(s)
1	Definitions / Phases involved in Drug Discovery/Development	1
2	Current Situation / Sources of Drugs / Classical Design approaches	1
3	Association & Skeletal variation	1
4	Bioisosteric substitution	1
5	Alteration in stereochemistry	1
6	Chiral Switching	1
7	Chiral Switching (Part 2)	1
8	Design based on Drug Metabolism	1
9	Design based on Drug Metabolism (Part 2)	1
10	Modification of duration of action & Soft drugs	1
11	Prodrugs	1
12	Mutual Prodrugs	1
13	Bioprecursor Prodrugs	1
14	Bioprecursor Prodrugs (Part 2)(Self-Learning)	1

16	**Final written and oral exams**	--

Practical/Tutorial:

Week (2hrs/wk)	Topics	hr(s)
1	Theoretical introduction on Molecular Docking (Part 1)	1
2	Theoretical introduction on Molecular Docking (Part 2)	1
3	Theoretical introduction on Molecular Docking (Part 3)	1
4	Introduction on MOE program	1
5	Creation of a Database file of chemical structures	1
6	Merged database file	1
7	Drawing and preparation of the expected receptor protein	1
8	Mid –term exam	1
9	Creation of Dummy atoms for docking	1
10	Docking run	1
11	Docking result interpretation	1
12	Docking result interpretation	1
13	Application on MOE program (Part 1)	1
14	Application on MOE program (Part 2)	1
15	**Practical Exam 2:** MOE **exam** & sheet exam (Different groups)	-

4- Teaching and learning Methods:

No.	Teaching and learning Methods	Week No.
4.1	Computer aided learning *via* Lectures at the classroom to attendant students, using Data Show and Power Point.	1-7 and 9-14

4.2	Computer aided Online learning via Lectures presented through interactive sessions using Microsoft Teams.	1-7 and 9-14
4.3	Computer-aided Distance learning via Lectures presented as videos uploaded on the University Portal. "My Mans"	1-7 and 9-14
4.4	Practical Sessions using facilities as computers, molecular modeling software and videos.	1-7 and 9-14
4.5	Interactive Discussion sessions using Chat room on the University Portal "My Mans".	1-7 and 9-14
4.6	Online *Research* Assignments to enhance students' self-learning.	14

5- Student Assessment:

a- Assessment Methods:

	Assessment Methods	To assess
1	Written Exam (Final)	1.1.3.1; 1.1.4.1; 2.4.3.1; 3.2.1.1
2	Practical/Tutorial	2.2.1.1; 2.4.3.1; 2,4,3,2; 2.4.3.3
3	Oral Exam	4.1.2.1; 4.1.2.2; 4.2.2.1;4.3.2.1
4	Periodical Exam	1.1.2.1; 1.1.3.1; 1.1.4.1; 1.1.7.1

b. Assessment schedule

Assessment 1	Periodical exam	8th week
Assessment 2	Practical examination and tutorial	15 th week
Assessment 3	Written exam	16th week

Assessment 4	Oral exam	16th week

c. Weighing of assessments

1	Periodical exam	10%
2	Practical examination and tutorial	25%
3	Final-term written examination	50%
4	Oral examination	15%
Total		100%

6 – Facilities Required for Teaching and Learning

1	**Class room**	Computers and Internet facilities. (Available)
2	**Laboratory facilities**	Computer Sets with internet facilities. (Available) ChemDraw software. (Available) Molecular Modeling software. (Available)
3	**Library**	Drug Design Official Notes. Reference Books (Available)

7- Matrix of course content versus course k. elements:

Study Week	Course contents	Domains			
		F K *	P E P**	P C***	P P****
1,2	Introduction / Definitions / Phases Involved in Drug Development Process / Current Situation / Sources of Drugs / Kinds of Drug Discovery	1.1.2.1 1.1.7.1			
3	Classical drug design / Bond Disconnection / Molecular Association / Skeletal Variations	1.1.3.1 1.1.4.1	2.4.3.1 2.4.3.3		
4	Bioisosteric substitution / Alteration of stereochemistry	1.1.3.1		3.2.1.1	
5,6	Active metabolite approach / Drugs with better metabolic profile / Design of "soft" drugs	1.1.3.1 1.1.4.1	2.4.3.1 2.4.3.3	3.2.1.1	
8,9	Carrier-linked Prodrugs / Bioprecursor Prodrugs	1.1.3.1 1.1.4.1	2.4.3.1 2.4.3.3 2.5.1.1	3.2.1.1	4.1.2.1
10	Mathematical approach / Biological approach Drug Design	1.1.3.1	2.4.3.1 2.4.3.2 2.5.1.1	3.2.1.1	
11,12	Computer-Aided Drug Design (CADD)	1.1.3.1	2.4.3.1 2.4.3.2	3.2.1.1	
--	Self-study				4.1.2.2 4.3.2.1

1-6 and 8-13	Practical sessions • Theoretical introduction on Molecular Docking • Introduction on MOE program • Creation of a Database file of chemical structures • Merged database file • Drawing and preparation of the expected receptor protein • Creation of Dummy atoms for docking • Docking run • Docking result interpretation Revision on MOE program				4.1.2.2 4.2.2.1

* ***F**undamental **K**nowledge* ** *Professional and **E**thical **P**ractice* *** ***P**harmaceutical **C**are* **** ***P**ersonal **P**ractice s*

8 - References

No.	Reference	Type
1	Lectures Notes and Lab. Manual.	Electronic book
2	An Introduction to Medicinal Chemistry. 6th Edition, By Graham L. Patrick (Author) Publisher**:** Oxford University Press, Oxford; **2017** ISBN-13: 978-0198749691. ISBN-10: 9780198749691	Book
3	Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry.12th Edition, By J M. Beale Jr, J Block (Editors) Publisher**:** Lippincott–Raven Publishers, Philadelphia, **2011** ISBN-13: 978-0781779296. ISBN-10: 0781779294	Book

	Recorded videos	Videos on platform
	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com http://www.fda.gov https://www.ekb.eg	websites
	Letters in Drug Design & Discovery. Bentham Science Drug Design Development & Therapy. Dove Medical Press Ltd. Chemical Biology & Drug Design. Wiley/ Blackwell (UK)	Periodicals

Course Coordinator	Head of Department	Date*
Prof. Dr. **Mohamed A. A. Moustafa**	**Prof Dr.** **Mohamed A. A. Moustafa**	**6/9/2023**

* Date of Dept. Council Approval

Mansoura University
Faculty of Pharmacy
Quality Assurance Unit
Course Specification
Credit Hours Program
2023- 2024

بكالوريوس الصيدلة

Course Specification

Academic year: 2023/2024

Course name: Clinical Biochemistry	**اسم المقرر** : كيمياء حيويه اكلينيكية
Academic Level:5	**المستوى الأكاديمي** :الخامس
Scientific department: Biochemistry	**القسم العلمي** : الكيمياء الحيوية
Head of Department: Dr. Noha M.H. Abdel- Rahman	**رئيس القسم :** د/ نهى منصور حسن عبدالرحمن
Course Coordinator: Prof. Dr. Mamdouh El-Shishtawy	**منسق المقرر :** أ.د/ ممدوح الششتاوي

University	Mansoura
Faculty	Pharmacy
Department offering the course	Biochemistry
Department supervising the course	Biochemistry
Program on which the course is given	Bachelor of Pharmacy
Academic Level	Fifth Level, Semester two, 2023-2024
Date of course specification approval	16/9/2023

A. Basic Information: Course data:

Course Title	Clinical Biochemistry
Course Code	**PB 524**
Prerequisite	Registration
Teaching credit Hours: Lecture	2
Practical	1
Total Credit Hours	3(Credit H)

B. Professional Information:

1 .Course Aims:

This course enables the students to:

1 Develop the ability to select chemical investigation those are appropriate to the diagnosis of disease and for the management of treatments.
2 Understand the diagnostic value of plasma non-functional enzymes.
3 Study the functional state of: Liver, Kidney, Heart, Bone and GIT, in health and disease
4 Study the Inborn Errors of Metabolism of Carbohydrates, Protein, Amino acids and Lipids
5 Understand Tumor Markers.
6 Study the disorders of Collagen and Plasma Proteins.
7 Maintain a responsible and critical attitude in the use of the diagnostic services provided by Clinical Biochemistry and Laboratory based specialists

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	Identify the fundamental basis of pharmaceutical, medical, social and behavioral sciences as well as management of different health conditions.
1.1.2	1.1.2.1	Utilize important pharmaceutical and medical terminology, abbreviations and symbols in pharmacy practice.
1.1.4	1.1.4.1	Articulate knowledge from fundamental sciences to evaluate drugs' action, therapeutic effects and their appropriateness, effectiveness, and safety in individuals and populations.
1.1.5	1.1.5.1	Define the principles, practice and critical understanding of fundamental sciences to solve problems related to human health.
1.1.6	1.1.6.1	Make evidence-informed professional decisions through analysis and application of relevant scientific literature and other scientific resources.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.1.2	2.1.2.1	Make use of the principles of professional codes of ethics, preserving patients' rights and respecting population diversity.
2.4.3	2.4.3.1	Make decisions regarding recognized drug-related and pharmaceutical care problems.
2.5.2	2.5.2.1	Identify relevant and necessary evidence-based information about a patient's health-related care needs.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.1.1	3.1.1.1	Adjust a dosage regimen for a patient based on knowledge of different biochemical, metabolic and immunological changes related to disease or concomitant drug therapy.
3.2.2	3.2.2.1	Use the principles of clinical pharmacology and clinical nutrition and the necessary technical skills to rationalize the use of medicines and medical

		devices.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	**4.1.2.1**	Gather information and analyze data, point out problems and present solutions, participate independently and collaboratively with other team members in the healthcare system.
4.2.1	**4.2.1.1**	Make use of clear language, pace, tone and non-verbal communication and writing skills when dealing with patients, other health team and communities.
4.2.2	**4.2.2.1**	Employ advanced technologies and channels whenever possible to present relevant information.
4.3.1	**4.3.1.1**	Conduct self-evaluation strategies to manage and improve professional of pharmacy.
4.3.2	**4.3.2.1**	Encourage continuous professional development by practicing self and independent learning.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Introduction & Inborn Errors of Metabolism	2
2	Carbohydrate metabolism disorders	2
3	Blood glucose & Diabetes Mellitus	2
4	Liver function Tests	2
5	Diagnostic enzymology	2
6	Water, electrolytes and hydrogen ion disorders	**2**
7	Lipid disorders	2
8	Kidney function Tests	2
9	Cardiac function test	2
10	Respiratory disorders	2
11	Amino acid metabolism disorders	2
12	Collagen and Plasma proteins disorders	2

13	Tumor markers	2
14	Disorders of nucleic acids, purine and pyrimidine metabolism.	2
15	Revision /quiz	2
16	**Final written and oral exam**	**-**

Practical topics

Week No	Topics	No. of hours
1	Lab safety and the use of laboratory.	1
2	Patient Sample collection	1
3	Laboratory Diagnosis of Diabetes Mellitus/ Complications of Diabetes Mellitus	1
4	Oral Glucose Tolerance Test/**case study.**	1
5	Mineral disturbance in diabetes	1
6	Clinical cases on Diabetes Mellitus	1
7	Tests for Evaluation of Liver Function (Total protein, ALT, AST).	**1**
8	**Mid-term Exam**	**-**
9	Determination of serum bilirubin (total and direct) /**case study**	1
10	Tumor markers.	1
11	Acute myocardial infarction/**Presentation**.	1
12	Diagnosis of renal dysfunction/ **Presentation**.	1
13/14	Revision/ case study	2
15	Practical Exam	-

4- Teaching and learning Methods:

No	Teaching and learning Methods	Week
5.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • On line learning through my mans "Mansoura university "as recorded – video lectures • Inter active discussion through My Mans	1-14
5.2	Self-learning	13

5.3	Practical session using chemicals and laboratory equipment and/ or tutorials	1-14
5.4	Class Activity: Group discussion offline and online.	8
5.5	Problem – based learning and brainstorming	8
5.6	Research assignments	12

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1, 1.1.2.1, 1.1.4.1, 1.1.5.1, 1.1.6.1, 2.1.2.1, 2.4.3.1, 2.5.2.1
2-Practical exam	2.4.3.1, 2.5.2.1, 4.1.2.1, 4.2.2.1, 4.3.1.1
3-Oral exam	1.1.1.1, 1.1.5.1, 2.1.2.1, 2.4.3.1, 2.5.2.1, 3.1.1.1, 3.2.2.1, 4.1.2.1, 4.2.2.1, 4.3.1.1
4- Periodical (Mid-term exam) / case study	1.1.1.1, 1.1.6.1, 2.5.2.1, 4.1.1.1, 4.3.2.1

b. Assessment schedule

Assessment 1	**Periodical (Mid-term exam)**	8th week
Assessment 2	**Practical exam**	15 th week
Assessment 3	**Oral exam**	16th week
Assessment 4	**Written exam**	16th week

c. Weighing of assessments

1.	**Mid-term examination**	**10 %**
2.	**Final-term examination**	**50 %**
3.	**Oral examination**	**15 %**
4.	**Practical examination and Semester work**	**25 %**
Total		**100 %**

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Microscopes- chemicals- glass wares- white board

7- Matrix of course content versus course k. elements:

Week No.	Course contents / K. elements	Domain1					Domain2			Domain3		Domain4				
		1.1.1.1	1.1.2.1	1.1.4.1	1.1.5.1	1.1.6.1	2.1.2.1	2.4.3.1	2.5.2.1	3.1.1.1	3.2.2.1	4.1.2.1	4.2.1.1	4.2.2.1	4.3.1.1	4.3.2.1
1	Introduction & Inborn Errors of Metabolism	√						√								
2	Carbohydrate metabolism disorders	√		√		√	√		√	√						
3	Blood glucose & Diabetes Mellitus	√	√		√	√				√		√	√	√		
4	Liver function Tests	√	√		√	√	√	√	√	√	√	√	√	√		
5	Diagnostic enzymology	√	√	√	√				√	√			√	√		
7	Water, electrolytes and hydrogen ion disorders	√	√		√	√	√						√	√		
8	Lipid disorders	√	√			√						√	√		√	
9	Kidney function Tests		√		√	√		√		√	√		√	√	√	√
10	Cardiac function test	√		√	√	√		√	√	√	√				√	√
11	Respiratory disorders		√		√		√	√		√						
12	Amino acid metabolism disorders	√				√						√	√		√	√
13	Collagen and Plasma proteins disorders		√		√	√	√	√		√	√		√	√	√	
14	Tumor markers	√		√	√	√		√	√	√	√				√	√
1-7,9-14	Practical topics		√	√	√		√	√	√		√	√	√	√		

8- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos prepared by staff members	Videos on platform
3.	Nutrition therapy and pathophysiology, Marcia Nelms and Kathryn P. Sucher,Wadsworth, Inc,4th edition,2020.	Books
4.	Nutrition for health and health care,Linda Kelly DeBruyne and Kathryn Pinna, Cengage learning, 6th edition,2017.	Books
5.	William's basic nutrition and diet therapy, Staci Nix, Elsevier, 16th edition,2020	Books
6.	Basic nutrition, Lori A. Smolin, Ph.D. and Mary B. Grosvenor, M.S., R.D., Chelsea house,3rd edition, 2019.	Books
7.	www.nutrition.gov/topics/healthy-living-and-weight/weight-management-youth www.nutrition.gov/topics/diet-and-health-conditions www.nutrition.gov/topics/diet-and-health-conditions/cancer https://www.ekb.eg	Web sites

Course Coordinator	Prof. Dr. Mamdouh El-Shishtawy
	
Head of Department	Dr. Noha M.H. Abdel- Rahman
	

Date: 16 /9/ 2023

Level: five

Pharmaceutical business administration
Course Specification

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmaceutics
Course title: Pharmaceutical business administration
Course code: PT 529

Program on which the course is given	B. Pharm
Academic Level	Fifth Level, First semester, 2023-2024
Date of course specification approval	20/9/2023

1. Basic Information: Course data:

Course title:	**Pharmaceutical business administration**	**Code: PT 529**
Specialization:	**Pharmaceutical**	
Prerequisite:	**Registration**	
Teaching Hours:	**Lecture: 1**	**Practical: -**
Number of units: (credit hours)	**1**	

2. Course Aims:

2.1. Master the major concepts in management and marketing to the different fields of pharmacy practice.
2.2. Understand the different application involved in different management system.
2.3. Help pharmacy students to construct a new pharmacy concerning the following points: location, design, communication, advertising, and financing.

3- Course Learning Outcomes

Upon completing the course, the student will be able to dominate the following key elements

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

Program K. element no.	Course K. element no.	Course K. element
1.1.1	**1.1.1.1**	Define the different basic knowledge of pharmacy management.
1.1.6	**1.1.6.1**	Classify different methods of analysis and apply relevant scientific resources to make evidence-based cost-effective health care decisions.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	**2.4.3.1**	Specify the factors affecting contribution to decision making processes for recognized drug-related and pharmaceutical care

		problems for values-based pricing.
2.6.1	**2.6.1.1**	Utilize and apply the principles of business administration and management to ensure rational use of financial and human resources.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	**4.1.1.1**	Share decision-making activities with other pharmacy team members and non-pharmacy team members and apply effective time management skills.
4.2.1	**4.2.1.1**	Communicate effectively in a proper professional language by verbal and non-verbal means.
4.3.2	**4.3.2.1**	Practice self-learning to improve professional skills and developing a plan to meet these needs so promote critical thinking, decision-making, and time managing capabilities.

4. Contents:

Week No	Topics	Lecture credit hours	Practical credit hours
1.	Introduction about business administration	1	-
2.	The pharmacist as entrepreneur	1	-
3.	Starting or buying pharmacy	1	-
4.	Legal forms of ownership	1	-
5.	Selecting location and positioning of pharmacy	1	-
6.	The planning process	1	-
7.	Financing pharmacy	1	-
8.	Organizing pharmacy **(Mid-term Exam)**	1	-
9.	Pharmacy layout and merchandising	1	-
10.	Accounting and financial records	1	-
11.	Purchasing and inventory control	1	-
12.	Promotion and personal selling	1	-
13.	The types of investors and Self-learning	1	-
14.	Revision	1	-
15-16	Final Exam		

5. Teaching and learning Methods:

5.1	**Computer aided learning:** **a- On line learning through My Mans "Mansoura University" as recorded – video lectures.** **b- Inter active discussion through My Mans.**	**Week number** **1-14**
5.2	**Self-learning**	**13**

5.3	Class Activity	3-5

6. Student Assessment:

a- Assessment methods

1- Mid-Term exam	1.1.1.1, 2.4.3.1, 4.1.1.1,4.2.1.1, 4.3.2.1
2-Written Exam	1.1.1.1, 1.1.6.1, 2.4.3.1, 2.6.1.1

b- Assessment schedule

Assessment 1	Mid-term	8th week
Assessment 2	Written	15th -16th week

c- Weighting of assessments

1.	Mid-term examination	10 %
2.	Final-term examination	90 %
3.	Oral examination	-
4.	Practical examination and Semester work	-
Total		100 %

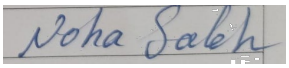
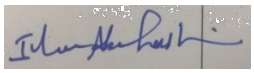
7. List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos prepared by stuff members	Videos on platform
3.	Shimin Yang, Pharmacy Administration (2nd edition), Beijing, China Medical Technique Press, (2006)	Textbook
4.	Eugene Mick Kolassa, James Greg Perkins, Bruce R Siecker, Pharmaceutical Marketing Principles, Environment, and Practice (1st edition), CRC Press, (2002)	Textbook
6.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	websites

8. Matrix of knowledge and skills of the course

Study Week	Course contents	Domain 1 5Domain 2					Domain 4		
		1.1.1.1	1.1.6.1		2.4.3.1	2.6.1.1	4.1.1.1	4.2.1.1	4.3.2.1
1	Introduction about business administration	□	□		□	□	□	□	□
2	The pharmacist as entrepreneur	□	□		□	□	□	□	□

3	Starting or buying pharmacy	□	□		□	□	□	□	□
4	Legal forms of ownership	□	□		□	□	□	□	□
5	Selecting location and positioning of pharmacy	□	□		□	□	□	□	□
6	The planning process	□	□		□	□	□	□	□
8	Financing pharmacy	□	□		□	□	□	□	□
9	Organizing pharmacy	□	□		□	□	□	□	□
10	Pharmacy layout and merchandising	□	□		□	□	□	□	□
11	Accounting and financial records	□	□		□	□	□	□	□
12	Purchasing and inventory control	□	□		□	□	□	□	□
13	Promotion and personal selling								
14	The types of investors and Self-learning	□	□		□	□	□	□	□

Course Coordinator:	**Dr. Noha Mohamed Saleh** 
Head of Department:	**Prof Dr. Irhan Ibrahim Abu Hashim** 

Course Specification

2023- 2024

Faculty of Pharmacy

Mansoura University

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmacy Practice
Course title: Drug marketing
Course code: PP-528

Program on which the course is given	B. Pharm
Academic Level	Fifth Level, 2023-2024
Date of course specification approval	7th September 2023

A. Basic Information: Course data:

Course title:	Drug marketing	**Code:** PP-528
Specialization:	Pharmacy management	
Prerequisite:	Registration	
Teaching Hours:	Lecture: 1	**Practical:** 0
Number of units: (credit hours)	1	

B. Basic information:

1. Course Aims:

2.1. Master the major concepts in management and marketing to the different fields of pharmacy practice.
2.2. Understand the different application involved in different management system.

2. course key elements:

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

Program K. element no.	Course K. element no.	Course K. element
1.1.1	**1.1.1.1**	Define the different basic knowledge of pharmaceutical marketing management.

1.1.6	**1.1.6.1**	Classify different methods of analysis and apply relevant scientific resources to make evidence-based cost-effective health care decisions.
1.1.7	**1.1.7.1**	Analyze evolving evidence, that may be applicable to solve pharmaceutical marketing problems.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.1.1	**2.1.1.1**	Organize and apply legal professional requirements to healthcare team in competitive analysis and sale force management.
2.4.3	**2.4.3.1**	Specify the factors affecting contribution to decision making processes for recognized drug-related and pharmaceutical care problems for values-based pricing.
2.6.1	**2.6.1.1**	Interpret the basic principles involved in managing financial, and customer behavior and marketing research.
2.6.2	**2.6.2.1**	Conduct guidelines of drug promotion , market segmentation, accounting and budget impact analysis.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	**4.1.1.1**	Share decision-making activities with other pharmacy team members and non-pharmacy team members and apply effective time management skills.

4.1.2	**4.1.2.1**	Create or practices independent participation in the field of pharmacy and collaboration in the delivery of health services.
4.3.2	**4.3.2.1**	Practice self-learning to improve professional skills and developing a plan to meet these needs so promote critical thinking, decision-making, and time managing capabilities.

3. Course Contents:

Week No	Topics	No. of hours	Lecture credit hours
1.	Marketing management	1	1
2	Marketing strategy	1	1
3.	Marketing research	1	1
4,5	Marketing information system and marketing mix	2	2
6	Market segmentation	1	1
7	Introduction to drug marketing, its criteria.	1	1
8	Main barriers of drug marketing	1	1
9, 10	Pharmaceutical market & its main players	2	2
11, 12	The drug marketing considerations	2	2
13, 14	Marketing plan (self-learning)	2	2
15	Final written exam	-	-

4. Teaching and learning Methods:

	Teaching and Learning Methods	**week**

5.1	Computer aided learning: a. On line learning through My mans "Mansoura university "as recorded – video lectures b. Inter active discussion through My Mans c. Power point (PPT) presentations	1-14
5.2	Self-learning	13, 14
5.3	Formative assignments	14

5. Student Assessment:

a- Assessment methods

1-Written exam & midterm	1.1.1.1/ 1.1.6.1/ 1.1.7.1/ 2.1.1.1/ 2.4.3.1 /2.6.1.1/2.6.2.1/ 4.1.1.1/4.1.2.1/ 4.3.2.1
2-Formative Assessment	1.1.1.1/ 1.1.6.1/ 1.1.7.1/ 2.1.1.1/ 2.4.3.1 /2.6.1.1/2.6.2.1

b- Assessment schedule

Assessment 1	Mid-term	8th week
Assessment 2	Written	From 15th week
Other assessment		--

c- Weighting of assessments

1.	Mid-term examination	10 %
2.	Final-term examination	90 %
3.	Oral examination	-
4.	Practical examination and Semester work	-

Total	100 %

6. Matrix of knowledge and skills of the course

Study Week	Course contents	Outcomes Domains / Key elements										
		Domain 1			Domain 2				Domain 4			
		1.1.1.1	1.1.6.1	1.1.7.1	2.1.1.1	2.4.3.1	2.6.1.1	2.6.2.1	4.1.1.1		4.1.2.1	4.3.2.1
1st	Marketing management	√	√			√	√	√	√			√
2nd	Marketing strategy	√	√			√	√	√	√			√
3rd	Marketing research	√	√	√	√		√	√	√		√	√
4th, 5th	Marketing information system and marketing mix	√	√		√		√	√	√			√
6th	Market segmentation	√	√		√		√	√	√			√
7th	Introduction to drug marketing, its criteria.		√	√		√	√	√	√			√
8th	Main barriers of drug marketing		√	√		√	√	√	√			√

9th-10th	Pharmaceutical market & its main players		√	√		√	√	√	√		√	√
11th-12th	Drug marketing considerations		√	√		√	√	√	√			√
13,14th	Marketing plan (self-learning)		√	√		√	√	√	√		√	√

7. List of References

N0.	Reference	Type
1.	Electronic book prepared by staff members	Course Notes
2.	Recorded videos prepared by staff members	Videos on plat form
3.	Shimin Yang, Pharmacy Administration (2nd edition), Beijing, China Medical Technique Press, (2006)	Book
4.	Eugene Mick Kolassa, James Greg Perkins, Bruce R Siecker, Pharmaceutical Marketing Principles, Environment, and Practice (1st edition), CRC Press, (2002)	Book
5.	http://www.marketingpower.com/content31634.php http://www.ekb.com http:// www.pubmed.com	Websites

Course Coordinator:	**Dr. Mona Eltamalawy** *Mona M. Eltamalawy*
Head of Department:	**Prof Dr. Mohamed Elhusseiny Shams** Mohamed Shams

Date: 7 / 9/ 2023

Fifth Level

Course Specification
First Aids and Emergency Medicine

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmacology and toxicology
Course title: First Aids and Emergency Medicine
Course code: MF 5210

Program on which the course is given	B. Pharm (credit hours)
Academic Level	Fifth Level, Semester Two
Date of course specification approval	September 2023

A. Basic Information: Course data:

Course title:	**First Aids and Emergency Medicine**	**Code: MF 5210**
Specialization:	**Health and Environmental Sciences**	
Prerequisite:	**Pharmacology 1 and Pharmacology 2**	
Teaching Hours:	**Lecture: 1**	**Practical: -**
Number of units: (credit hours)	**1**	

B. Professional Information:

1. Course Aims:

Provide knowledge about the correct procedures followed in medical conditions emergency care
Provide knowledge about the correct procedures followed in injured casualty emergency care
Provide the skills and knowledge critical for saving life and minimizing the severity of injury or sudden illness.
Provide safety awareness
Give an idea about accident prevention

2. Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	Recognize first aid skills and management for a range of common disorders and injuries.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.1.1	2.1.1.1	Illustrate professional requirements for individuals and healthcare team to provide first aid care.
2.4.1	2.4.1.1	Identify and deal with different causes of poisoning and select the first aid measures for various toxic agents.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.2	3.2.2.1	Assess and perform first aid measures and initial therapy for injured and ill casualties.
	3.2.2.2	Demonstrate how to perform basic first aid technical procedures.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.3.1	4.3.1.1	Acquire skills to arrange priorities in case of managing medical emergencies in pharmacy.
	4.3.1.2	Practice independent learning to promote first aid knowledge and skills.

3. Contents:

Week No	Topics	No. of hours	Lecture credit hours	Practical credit hours
1	Introduction, First aid for medical conditions: anaphylaxis	1	1	-
2	First aid for medical conditions: fever, seizure and diabetes	1	1	-
3	First aid for medical conditions: shock, poisoning and stroke	1	1	-
4	First aid for fainting, bites and stings	1	1	-
5	First aid for injuries: Foreign body airway obstruction	1	1	-
6	First aid for injuries: Burns, electrocution and musculoskeletal injury	1	1	-
7	First aid for injuries: chest, abdomen and eye injury	1	1	-
8	Mid term exam			
9-10	First aid for injuries: head and spinal injury	2	2	-
11-12	First aid for environmental health problems	2	2	-
13-14	Resuscitation	2	2	-
15	Revision and quiz	1	1	-
16	Written and oral exam	--	--	--

4. Teaching and learning Methods:

5.1	Computer aided learning: a. Online learning through My mans "Mansoura university "as recorded – video lecture b. Interactive discussion through My Mans c. Lectures using Data show, PowerPoint presentations
5.2	Self-learning

5. Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.1.1, 1.1.8.1, 2.1.1.1, 2.4.1.1, 3.2.2.1, 4.3.1.1
2-Oral	1.1.1.1, 1.1.8.1, 2.1.1.1, 2.4.5.1, 3.2.2.2, 4.3.1.2
3-Mid term/ Formative Assessment	1.1.1.1, 1.1.8.1, 2.1.1.1, 2.4.1.1, 3.2.2.1, 4.3.1.1

b- Assessment schedule:

Assessment 1	**Mid-term**	8th week
Assessment 2	**Written**	16th week
Assessment 3	**Oral**	16th week

c- **Weighting of assessments**:

1.	Mid-term examination	10%
2.	Final-term examination	75%
3.	Oral examination	15%
Total		100%

6. List of References

N0.	Reference	Type
1	ACEP First Aid Manual, 5th Edition, 2014	Reference textbook
2	International first aid and resuscitation guidelines 2016	Reference textbook
3.	http://www.pubmed.com https://www.ekb.eg	websites

7. Matrix of course content versus course k. elements

Study week	Course contents / K. elements	Domain 1	Domain 2		Domain 3		Domain 4	
		1.1.1.1	2.1.1.1	2.4.1.1	3.2.2.1	3.2.2.2	4.3.1.1	4.3.1.2
1	Introduction, First aid for medical conditions: anaphylaxis	✓	✓			✓		
2	First aid for medical conditions: fever, seizure and diabetes	✓	✓	✓	✓	✓	✓	
3	First aid for medical conditions: shock, poisoning and stroke	✓	✓		✓	✓	✓	
4	First aid for fainting, bites and stings	✓	✓		✓		✓	
5	First aid for injuries: Foreign body airway obstruction	✓	✓		✓	✓	✓	
6	First aid for injuries: Burns,	✓	✓		✓		✓	✓

	electrocution and musculoskeletal injury									
7	First aid for injuries: chest, abdomen and eye injury	✓		✓			✓		✓	✓
9-10	First aid for injuries: head and spinal injury	✓		✓			✓		✓	✓
11-12	First aid for environmental health problems	✓		✓			✓		✓	✓
13-14	Resuscitation	✓		✓			✓		✓	✓
15	Revision and quiz									

Course Coordinator	**Prof. Manar Gamal**
Head of Department	**Prof. Manar Ahmed Nader**

Date: September 2023

بكالوريوس الصيدلة (فارم دى- **Pharm D)**

Course Specification

Academic year: 2023/2024

Course name: Pharmaceutical Biotechnology	**اسم المقرر** : التقنية الحيوية الصيدلية
Academic Level: level 5	المستوى الأكاديمي : الخامس
Scientific department: Microbiology and Immunology	**القسم العلمي** : الميكروبيولوجي و المناعة
Head of Department: Prof. Dr. El-Sayd E. Habib	**رئيس القسم:** أ .د /.السيد الشربينى حبيب
Course Coordinator: Prof. Dr. Eman salama	**منسق المقرر** : ا.د/ ايمان سلامة

Course Specification
2023- 2024
Pharm D Program
Faculty of Pharmacy
Mansoura University

University	Mansoura
Faculty	Pharmacy
Department offering the course	Microbiology and Immunology
Department supervising the course	Microbiology and Immunology
Program on which the course is given	Bachelor in Pharmacy- Pharm D
Academic Level	Level 5, first semester, 2023-2024
Date of course specification approval	10/9/2023

A. Basic Information: Course data:

Course Title	Biotechnology
Course Code	PM 625
Prerequisite	Registration
Teaching credit Hours: Lecture	2
Teaching Credit Hours: Practical/ tutorial	1
Total Credit Hours	3

B. Professional Information:

1. Course Aims:

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

- Have the knowledge about the use of microorganisms in different fields of biotechnology.
- Be familiar with different fermentation processes and their products.
- Detect and monitor genetically engineered M.O and its use in making protein of interest or drug
- Recognize the use of recombinant DNA technology in the pharmaceutical and medical fields.
- Understand the basics of gene therapy and its applications in the treatment of genetic disorders.
- Identify bioremediation and its applications.

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	Define the importance of biotechnology and its uses
1.1.2	1.1.2.1	Identify terms related to genetic engineering and bioremediation
	1.1.2.2	Differentiate between different types of fermentation processes
1.1.3	1.1.3.1	Recognize the use of microorganisms in the production of important pharmaceutical products
1.1.7	1.1.7.1	Identify the basics of gene therapy and its uses in treatment of monogenic and polygenic disorders
	1.1.7.2	Illustrate the use of genetic engineering in production of some drugs

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Manipulate suitable methods for the production of fermented products
2.2.2	2.2.2.1	Analyze how to encode and transfer regions of the genetic material of the microorganisms and its use in the synthesis of important proteins
2.2.3	2.2.3.1	Differentiate between DNA manipulation techniques
2.2.4	2.2.4.1	Manipulate gene therapy and its applications in treatment of genetic disorders

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.3	3.2.3.1	Determine the use of monoclonal antibodies in the treatment of cancer
	3.2.3.2	Investigate gene therapy and its use in treatment of some diseases

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Retrieve and evaluate information, solve problems and work effectively in a team
4.2.1	4.2.1.1	Communicate effectively in a scientific language by verbal and written means in the field of health care and pharmaceutical preparations regarding the studied topics
4.2.2	4.2.2.1	Use information technology tools to retrieve clinical laboratory data from different sources to improve professional competencies
4.3.2	4.3.2.1	Practice independent learning to promote continuous professional development

3- Course Contents

Week No.	Lecture topics	Lecture credit Hours
1	Introduction to biotechnology , its uses, screening and isolation of Industrial Microorganisms	2
2	Fermentation technology, Composition of fermentation media , Major parts of fermenter, Fermenter control& monitoring	2
3	Types of fermentation techniques Bioreactors of solid state fermentation	2
4	Production of major Pharmaceutical products (antibiotics and enzymes). Production of some health care products from microbial fermentations: (a) Cephalosporin antibiotic (b) Vitamin B12 (self-learning)	2
5	Microbial metabolites Bioremediation and its application	2
6	Introduction on genetic- DNA composition- replication	2
7	Methods of gene transfer- mutation	2
8	Polymerase chain reaction	2
9	Industrial strain improvement I (Mutation and protoplast fusion)	2
10	Industrial strain improvement II (cloning) and Application of Recombinant DNA Technology	2
11	Polymerase Chain Reaction and hybridization techniques	2
12	Monoclonal antibodies production-Application of monoclonal antibody	2
13	Principle of Gene therapy	2
14	Revision and quiz	2
15	**Final written and oral exam**	

Week No.	**Practical topics**	**Practical credit hours**
1	Isolation of soil bacteria	1
2	Identification and Examination of soil micro-organisms	1
3	Identifying Antibiotic Producing Microorganisms from Soil	1
4	Mutation	1
5	Polymerase Chain Reaction (PCR)	1
6	Gel electrophoresis	1
7	Cloning	1
8	Mid-term	
9	SDS-PAGE	1
10	Western blot	1
11	Southern blot	1
12	Northern blot	1
13	Revision	1
14	**Practical exam**	

4- Teaching and Learning Methods:

No	Teaching and Learning Methods	week	K. elements to be addressed
4.1	**Advanced lecture**	**1-14**	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (2.2.4.1), (3.2.3.1), (4.2.1.1)
4.2	**Hybrid learning: On line learning through My mans "Mansoura university "**	**1-14**	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (2.2.4.1), (3.2.3.1), (4.2.1.1) (4.2.2.1)
4.3	**Practical works and tutorials**	**1-13**	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (2.2.1.1), (2.2.2.1), (2.2.3.1), (4.1.2.1), (4.2.1.1), (4.2.2.1)
4.4	**Self-learning**	**8 & 9**	(4.1.2.1), (4.2.1.1), (4.2.2.1), (4.3.2.1)
4.5	**Demos العروض التوضيحية**	**1-14**	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (2.2.4.1), (3.2.3.1), (4.2.1.1)

5- Student Assessment:

a- Assessment Methods:

1- Periodical (Mid-term exam) / Course work	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (2.2.4.1), (3.2.3.1),(4.2.1.1), (4.3.2.1)
2-Practical exam using OSPE	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (2.2.1.1), (2.2.2.1), (2.2.3.1), (4.1.2.1), (4.2.1.1), (4.2.2.1)
3-Written exam	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (2.2.4.1), (3.2.3.1)
4-Oral	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (2.2.4.1), (3.2.3.1),(4.2.1.1), (4.3.2.1)

b- Assessment schedule

Assessment 1	Periodical (Mid-term exam)	8th week
Assessment 2	Practical	14th week
Assessment 3	Written	15th week
Assessment 4	Oral	15th week
Other assessment		

c- Weighing of assessments

1	**Periodical (Mid-term exam)/Course work**	15%
2	**Practical examination & tutorial**	25%
3	**Final-term examination**	50%
4	**Oral examination**	10%
Total		100%

6- Facilities required for teaching and learning

Classroom	Data show- Computers, sound system-Internet, Platform
Laboratory facilities	Media- Sterile tools- chemical reagent- Data show- Computers, Internet, Platform
Library	Books

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	eBook
2	Recorded videos prepared by stuff members	Videos on platform
3.	Walsh, G. (2013). Pharmaceutical Biotechnology: Concepts and Applications. E book.	eBook
4.	Adair, J. R., Bickerstaff, G. F., Bugeja, V. C., Cartwright, E. J., Chaplin, M. F., Elles, R., Fussenegger, M. (2009). Molecular biology and biotechnology. Cambridge: Royal Society of Chemistry.	eBook
	Sue Carson, Heather Miller, Melissa Srougi, D. Scott Witherow (2019) Molecular Biology Techniques, A Classroom Laboratory Manual, 4th Edition, Academic Press	eBook
5.	ps://en.wikipedia.org/wiki/Industrial_fermentation ttps://www.wiley.com/en-Principles+and+Applications+of+Fermentation+Technology-p-81119460480 ttps://bioprocessing.weebly.com/types-of-fermenters.html ttps://biologyreader.com/fermentor.html Front. Sustain. Food Syst., 09 August 2019 tps://doi.org/10.3389/fsufs.2019.00063 ttps://link.springer.com/chapter/10.1007/978-94-017-0661-2_2 https://08101lexb-1103-y-https-www-sciencedirect-com.mplbci.ekb.eg/science/article/pii/B9780128219720000198 https://0810llgzn-1103-y-https-inspec--direct--app-theiet-org.mplbci.ekb.eg/an/21858646 https://pubmed.ncbi.nlm.nih.gov/35573236/	Websites

8- Matrix

a- Course content and key element

Week No.	Course contents / K. elements	Domain : 1							Domain 2					Domain: 3		Domain:4			
		1.1.1.1	1.1.2.1	1.1.2.2	1.1.3.1	1.1.7.1	1.1.7.2		2..2.1.1	2..2.2.1	2..2.3.1	2..2.4.1		3.2.3.1		4.1.2.1	4.2.1.1	4.2.2.1	4.3.2.1
1	Introduction to biotechnology , its uses, screening and isolation of Industrial Microorganisms	√		√					√										
2	Fermentation technology, Composition of fermentation media , Major parts of fermenter, Fermenter control& monitoring	√		√					√										
3	Types of fermentation techniques Bioreactors of solid state fermentation	√		√	√				√	√									
4	Production of major Pharmaceutical products (antibiotics and enzymes). Production of some health care products from microbial fermentations: (a) Cephalosporin antibiotic (b) Vitamin B12 (self-learning)	√		√	√				√	√						√	√	√	√
5	Microbial metabolites Bioremediation and its application	√	√		√				√	√									
6	Introduction on genetic- DNA composition- replication		√							√						√	√	√	√

7	Methods of gene transfer- mutation		√							√						√	√	√	√
8	Polymerase chain reaction		√	√			√			√	√								
9	Industrial strain improvement I (Mutation and protoplast fusion)		√	√			√		√	√	√			√		√			
10	Industrial strain improvement II (cloning) and Application of Recombinant DNA Technology		√				√				√			√					
11	Polymerase Chain Reaction and hybridization techniques		√	√	√	√	√		√	√	√			√		√	√	√	√
12	Monoclonal antibodies production- Application of monoclonal antibody					√						√		√					
13	Principle of Gene therapy		√			√						√		√					
14	Revision and quiz		√	√	√	√	√		√	√	√			√		√	√	√	√

Practical Topics

		1.1.1.1	1.1.2.1	1.1.2.2	1.1.3.1	1.1.7.1	1.1.7.2		2..2.1.1	2..2.2.1	2.2.3.1	2.2.4.1		3.2.3.1		4.1.2.1	4.2.1.1	4.2.2.1	4.3.2.1
1	Isolation of soil bacteria	√														√	√	√	
2	Identification and Examination of soil micro-organisms	√			√				√							√	√	√	
3	Identifying Antibiotic Producing Microorganisms from Soil			√					√	√						√		√	

4	Mutation		√				√				√					√	√		
5	Polymerase Chain Reaction (PCR)		√				√				√					√			
6	Gel electrophoresis		√				√				√					√			
7	Cloning		√				√				√					√	√		
9	SDS-PAGE		√				√				√					√	√		
10	Western blot		√				√				√					√			
11	Southern blot		√				√				√					√			
12	Northern blot		√				√				√					√			
13	Revision															√	√	√	

Course Coordinator	Prof. Dr. Eman Salama
Head of Department	Prof. Dr. El-Sayed E. Habib

Date: 10/9/ 2023

Course Specification
2023- 2024
Pharm D Program
Faculty of Pharmacy
Mansoura University

المستوى الخامس	وصيف مقرر: Geriatrics

University: Mansoura
Faculty: Pharmacy
Department: Pharmacology and Toxicology
Course title: Geriatrics
Course code: PHE 06

Program on which the course is given	B. Pharm
Academic Level	Fifth Level, Second semester
Date of course specification approval	September 2023

1- Basic Information: Course data:

Course title:	Geriatrics	**Code:**	PHE 06
Specialization:	Elective Course		
Prerequisite:			
Teaching Hours:	**Lecture:** 2	**Practical:**	0
Number of units: (credit hours)	2		

2- Professional Information:

1- Course Aims:

At the end of the course the student should:	
1.	Learn the impact of ageing for the individual and the society.
2.	Know, in comparison with the normal ageing person, the geriatric patient with his frequent syndromes and pathologies.
3.	Pay attention to the repercussion of these pathologies on the mental and physical functioning of the elderly.
4.	Understand the benefit of a multidisciplinary approach in the maintenance of the functioning of the elderly in the treatment of these pathologies

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element

1.1.6	1	Access, retrieve, critically analyze and apply relevant scientific literature and other scientific resources including s to make evidence-informed professional decisions.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.4.2	1	Contribute to decision making processes for recognized drug-related and pharmaceutical care problems

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.1.1	1	Modify a dosage regimen for a patient based on knowledge of different cell types and cell components and physiological, genetic, biochemical, metabolic and immunological changes brought about by disease or concomitant drug therapy.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	1	Collect information and analyze data, identify problems and present solutions, participate independently and collaboratively with other team members in the healthcare system.

3- Course Contents:

Week No	Topics	Lecture credit hours	Practical / Tutorial credit hours
1.	Introduction about aging	2	-
2.	Osteoporosis and Osteoarthritis	2	-
3.	Urinary Incontinence	2	-

4.	Benign prostatic hyperplasia	2	-
5.	Stroke	2	-
6.	Heart failure	2	-
7.	Hypertension Leg ulcers & falls and poor and balance	2	-
8.	**Midterm exam**	-	-
9-10	Diabetes mellitus	4	-
11	Dementia	2	-
12	Depression	2	-
13-14	Falls, poor balance and dizziness and Pain in the elderly	4	-
15	Revision and quiz		
16.	**Final written & oral exams**	-	-

4- Teaching and learning Methods:

Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • Online learning through my mans "Mansoura university "as recorded – video lectures • Inter active discussion through My Mans
Self-learning
Class Activity: Group discussion offline and online.
Problem – based learning and brainstorming
Case study

5- Student Assessment:

a- Assessment methods:

1-Mid term	**1.1.6, 2.4.2, 2.4.5, 3.1.1, 4.3.2**
2-Written exam	**1.1.6, 2.4.2, 2.4.5, 3.1.1, 4.3.2**
3-Oral	**1.1.6, 2.4.2, 2.4.5, 3.1.1, 4.3.2**
4-Case study	**1.1.6, 2.4.2, 2.4.5, 3.1.1, 4.3.2**

b- Assessment schedule

Assessment 1	**Mid-term**	**8th week**
Assessment 2	**Written**	**16th week**
Assessment 3	**Oral**	**16th week**

c- Weighting of assessments

1	**Mid-term examination**	**10 %**
2	**Final-term examination**	**75 %**
3	**Oral Exam**	**15 %**
Total		**100%**

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.

7- Matrix of knowledge and skills of the course

Study week	Course contents / K. elements	Domain 1	Domain 2	Domain 3	Domain 4
		1.1.6	2.4.2	3.1.1	4.1.2
1.	Introduction about aging	✓	✓	✓	✓
2.	Osteoporosis and Osteoarthritis	✓	✓	✓	✓
3.	Urinary Incontinence	✓			
4.	Benign prostatic hyperplasia		✓	✓	
5.	Stroke				
6.	Heart failure	✓	✓	✓	✓
7.	Hypertension Leg ulcers & falls and poor and balance	✓		✓	✓
9-10	Diabetes mellitus	✓		✓	✓
11	Dementia	✓		✓	✓
12	Depression	✓	✓		
13-14	Falls, poor balance and dizziness and Pain in	✓	✓		

	the elderly							
15	Revision and quiz	✓		✓		✓		✓

8- List of References

N0.	Reference	Type
1	Lectures notes prepared by staff members	Course notes
2	Levinson, W. Review of Geriatrics, 9th ed. LANGE REVIEW SERIES (NY: McGraw-Hill, 2006).	Book
3	Oxford Handbook of Geriatric Medicine by Lesley K. Bowker, James D. Price, Kunal S. Shah, Sarah C. Smith	Book
4	Geriatric Medicine: An Evidence-Based Approach (GERIATRIC MEDICINE (CASSEL)) 4th Edition	Book
5	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	websites

Course Coordinator:	Prof. Dr. Nashwa Abu-Elsaad
Head of department:	Prof. Dr. Manar A. Nader

بكالوريوس الصيدلة (ساعات معتمدة - Credit hours)

Course Specification

Academic year: 2023/2024

Course name: Drug Targeting	**اسم المقرر :** التهديف الدوائى
Academic Level: Level 5	**المستوى الأكاديمي :** الخامس
Scientific department: Medicinal Chemistry	**القسم العلمي :** الكيمياء الدوائية
Head of Department: Prof. Dr. Mohamed Ahmed Moustafa	**رئيس القسم :** ا.د/ محمد احمد مصطفى
Course Coordinator: Dr. Mariam A. Ghaly	**منسق المقرر:** ا.م .د/ مريم عاطف غالى

University	Mansoura
Faculty	Pharmacy
Department offering the course	Medicinal Chemistry
Program on which the course is given	Bachelor's Degree in Pharmacy – Credit hours
Academic Level	Fifth level, First semester, 2023/2024
Date of course specification approval	6/9/2023

A- Basic Information: Course data:

Course Title	Drug targeting
Course Code	PDE-12
Prerequisite	Registration
Teaching Hours/ week: Lecture:	2
Practical:	-
Total Credit Hours	2

B- Professional Information:

1- Course Aims:

This course enables the students to:

- Recognize the main drug targets, know its structure, types and mechanism of action.
- In addition to the fundamental concepts of drug-target interaction, including enzymes, receptors, and nucleic acid.
- Explain different methods used to increase drug specificity and delivery of drugs to specific sites.
- Finally, use this information in drug design.

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements:

DOMAIN 1: FUNDAMENTAL KNOWLEDGE

Program Key element No.	Course Key element No.	Course Key Element
1.1.1	1.1.1.1	Recognize in-depth and breadth knowledge of pharmaceutical and biomedical science related to drug action.
1.1.4	1.1.4.1	Explain drugs' mode of action, therapeutic uses and proper selection of safe and effective drugs

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program Key element No.	Course Key element No.	Course Key Element
2.5.3	2.5.3.1	Adapt concepts of medicinal chemistry used in the systematic approaches applied in drug development.

DOMAIN 3: PHARMACEUTICAL CARE

Program Key element No.	Course Key element No.	Course Key Element
3.2.1	3.2.1.1	Adapt principles of medicinal chemistry and pharmacological aspects of drugs, as mode of action, therapeutic uses, proper dosage, unwanted effects and drug interactions.

DOMAIN 4: PERSONAL PRACTICE

Program Key element No.	Course Key element No.	Course Key Element
4.1.2	4.1.2.1	Appraise information and analyze data, identify problems and present solutions, participate independently and collaboratively as drug chemistry expert within healthcare team.
4.2.1	4.2.1.1	Communicate effectively in proper scientific language by verbal and written means in the field of health care related to the studied topics
4.3.2	4.3.2.1	Practice independent learning to promote continuous professional development and lifelong learning.

3- Course Contents

A) Theoretical part

Week No.	Topics	Hours
1	**Reversible and irreversible enzyme inhibitors**	2
2	**Enzyme inhibitors acting at allosteric binding sites**	2
3	**Uncompetitive and non-competitive enzyme inhibitors**	2
4	**Transition-state analogues and suicide substrates of enzyme**	2
5	**Isozyme selectivity of inhibitors**	2
6	**Receptors structure and function (part 1)**	2
7	**Receptors structure and function (part 2)**	2
8	**Receptors structure and function (part 3)**	2
9	**Receptors structure and function (part 4)**	2
10	**Receptors as drug targets (part 1)**	2
11	**Receptors as drug targets (part 2)**	2
12	**Receptors as drug targets (part 3)**	2
13	**Self-learning: Antiviral agents targeting nucleic acids.**	2
14	**Revision and quiz**	2
15	**Final Written and Oral Exam**	--

B) Practical part

Week No.	Topics	Hours
1	**- NA**	-

4- Teaching and Learning Methods:

	Teaching and learning Methods	Weeks No.	Key elements to be addressed
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • Online learning through my mans "Mansoura university "as recorded – video lectures • Interactive discussion through My Mans	1-14	1.1.1.1, 1.1.4.1, 2.5.3.1, 3.2.1.1, 4.1.2.1, 4.2.1.1, 4.3.2.1

4.2	Self-learning	13	4.3.2.1
4.3	Tutorial sessions using Data show, power Point presentations and possible applications of OSQE	1-14	1.1.1.1, 1.1.4.1, 2.5.3.1, 3.2.1.1, 4.1.2.1, 4.2.1.1, 4.3.2.1
4.4	Class Activity: Group discussion offline and online.	1-14	1.1.1.1, 1.1.4.1, 2.5.3.1, 3.2.1.1, 4.2.1.1,
4.5	Problem based learning and brain storming.	1-14	1.1.1.1, 1.1.4.1, 2.5.3.1, 3.2.1.1, 4.1.2.1, 4.2.1.1,

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	Key elements to be assessed
1- Periodical (Mid-term exam / Course work)	1.1.1.1, 1.1.4.1, 2.5.3.1, 3.2.1.1, 4.1.2.1, 4.3.2.1
2- Written exam	1.1.1.1, 1.1.4.1, 2.5.3.1, 3.2.1.1, 4.1.2.1, 4.3.2.1
3- Oral exam	1.1.1.1, 1.1.4.1, 2.5.3.1, 3.2.1.1, 4.1.2.1, 4.2.1.1, 4.3.2.1

b- Assessment schedule:

Assessment 1	Periodical (Mid-term/ Course work)	8th week
Assessment 2	Written exam	15th week
Assessment 3	Oral exam	15th week

c- Weighing of assessment:

1	Periodical (Mid-term/ Course work)	10%
2	Practical exam	-
3	Written exam	75%
4	Oral exam	15%
Total		100%

6- Facilities required for teaching and learning.

- Classroom	Data show- Computers, Internet. (Available)
- Laboratory facilities	Data show- Computers, Internet. (Available)
- Library	Textbooks

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Graham L. Patrick; "An Introduction to Medicinal Chemistry" Oxford University Press, USA; 6th Revised edition, 2017	Essential Book
3.	M. E. Wolff Burger‟s Medicinal Chemistry and Drug Discovery", Donald J. Abraham, David P. Rotella (Editors), Wiley-interscience Publication, New York, 7th edition (2010).	Recommended Book
4.	Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, John Beale & John Block (Editors) Lippincott Williams & Wilkins; 12th Edition (2015).	Recommended Book
5.	Thomas, Gareth, "Fundamentals of Medicinal Chemistry" Wiley-Blackwell; Kindle Edition (2013).	Recommended Book
6.	https://www.ekb.eg http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com	Website

8-Matrix:

Matrix 1. Course contents and course key elements

A) Theoretical part:

Week No.	Course contents	Course Key elements						
		Domain: 1		Domain: 2	Domain: 3	Domain: 4		
		1.1.1.1	1.1.4.1	2.5.3.1	3.2.1.1	4.1.2.1	4.2.1.1	4.3.2.1
1	Reversible and irreversible enzyme inhibitors				✓			✓
2	Enzyme inhibitors acting at allosteric binding sites			✓				
3	Uncompetitive and non-competitive enzyme inhibitors	✓		✓	✓	✓		
4	Transition-state analogues and suicide substrates of enzyme			✓		✓	✓	
5	Isozyme selectivity of inhibitors	✓			✓	✓		
6	Receptors structure and function (part 1)	✓		✓		✓		
7	Receptors structure and function (part 2)	✓	✓	✓	✓	✓	✓	✓
8	Receptors structure and function (part 3)		✓	✓	✓	✓		
9	Receptors structure and function (part 4)	✓	✓	✓	✓	✓	✓	✓
10	Receptors as drug targets (part 1)		✓	✓	✓	✓	✓	
11	Receptors as drug targets (part 2)	✓	✓	✓	✓	✓	✓	✓

12	**Receptors as drug targets (part 3)**	✓	✓		✓	✓	✓	✓
13, 14	**Self-learning: Antiviral agents targeting nucleic acids.**	✓	✓	✓	✓	✓	✓	✓

Matrix 2. Between course contents, methods of learning, and assessment

A) Theoretical part:

Week No.	Course Contents	Teaching and Learning methods				Assessment methods			
		Lecture	Hybrid leaning	Comp. aided learning	Self-learning	Corse Work	Poster	Written	Oral
1	Reversible and irreversible enzyme inhibitors	✓	✓	✓		✓		✓	✓
2	Enzyme inhibitors acting at allosteric binding sites	✓	✓	✓		✓		✓	✓
3	Uncompetitive and non-competitive enzyme inhibitors	✓	✓	✓		✓		✓	✓
4	Transition-state analogues and suicide substrates of enzyme	✓	✓	✓		✓		✓	✓
5	Isozyme selectivity of inhibitors	✓	✓	✓		✓	✓	✓	✓
6	Receptors structure and function (part 1)	✓	✓	✓		✓		✓	✓
7	Receptors structure and function (part 2)	✓	✓	✓		✓		✓	✓
8	Receptors structure and function (part 3)	✓	✓	✓		✓	✓	✓	✓
9	Receptors structure and function (part 4)	✓	✓	✓		✓		✓	✓
10	Receptors as drug targets (part 1)	✓	✓	✓		✓		✓	✓
11	Receptors as drug targets (part 2)	✓	✓	✓		✓		✓	✓
12	Receptors as drug targets (part 3)	✓	✓	✓		✓		✓	✓
13, 14	Self-learning: Antiviral agents targeting nucleic acids.	✓	✓	✓	✓	✓		✓	✓

Course Coordinator	Dr. Mariam A. Ghaly 
Head of Department	Prof. Dr. Mohamed Ahmed Moustafa 

Approval Date: 6/9/2023

بكالوريوس الصيدلة

Course Specification

Academic year: 2023/2024

Course name: Nutrition in Disease Prevention and Cure	**اسم المقرر** : التغذيه في الوقايه من الامراض وعلاجها
Academic Level:5	**المستوى الأكاديمي** :الخامس
Scientific department: Biochemistry	**القسم العلمي** : الكيمياء الحيوية
Head of Department: Dr. Noha M.H. Abdel- Rahman	**رئيس القسم :** د/ نهى منصور حسن عبدالرحمن
Course Coordinator: Dr. Noha M.H. Abdel- Rahman	**منسق المقرر :** د/ نهى منصور حسن عبدالرحمن

University	Mansoura
Faculty	Pharmacy
Department offering the course	Biochemistry
Department supervising the course	Biochemistry
Program on which the course is given	Bachelor in Pharmacy
Academic Level	Fifth Level, Semester one, 2023-2024
Date of course specification approval	16/9/2023

A. Basic Information: Course data:

Course Title	Nutrition in Disease Prevention and Cure
Course Code	**PBE 13**
Prerequisite	Registration
Teaching credit Hours: Lecture	2
Practical	-
Total Credit Hours	2(Credit H)

B. Professional Information:

1 .Course Aims:

This course enables the students to:

1- Describe the concepts of nutrition in illness and wellness.
2- Recognize the basic knowledge of macro and micro-nutrients.
3- Learn about the nutritional requirements during different stages of life.
4- Understand the basic knowledge and skills necessary to maintain optimal health and prevent diseases through proper nutrition.
5- Study drug-induced allergy.Study drug-food and food-drug interactions. Recognize the basic nutritional guidelines in obesity, underweight, pregnancy, infancy and diabetes.

2- Course k. elements:

Upon completing the course, the student will be able to dominate the following key elements

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	**1.1.1.1**	Identify the fundamental basis of pharmaceutical, medical, social and behavioral sciences as well as management of different health conditions.
1.1.2	**1.1.2.1**	Utilize important pharmaceutical and medical terminology, abbreviations and symbols in pharmacy practice.
1.1.4	**1.1.4.1**	Articulate knowledge from fundamental sciences to evaluate drugs' action, therapeutic effects and their appropriateness, effectiveness, and safety in individuals and populations.
1.1.5	**1.1.5.1**	Define the principles, practice and critical understanding of fundamental sciences to solve problems related to human health.
1.1.6	**1.1.6.1**	Make evidence-informed professional decisions through analysis and application of relevant scientific literature and other scientific resources.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.1.2	**2.1.2.1**	Make use of the principles of professional codes of ethics, preserving patients' rights and respecting population diversity.
2.4.3	**2.4.3.1**	Make decisions regarding recognized drug-related and pharmaceutical care problems.
2.5.2	**2.5.2.1**	Identify relevant and necessary evidence-based information about a patient's health-related care needs.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.1.1	**3.1.1.1**	Adjust a dosage regimen for a patient based on knowledge of different biochemical, metabolic and immunological changes related to disease or concomitant drug therapy.

3.2.2	**3.2.2.1**	Use the principles of clinical pharmacology and clinical nutrition and the necessary technical skills to rationalize the use of medicines and medical devices.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	**4.1.2.1**	Gather information and analyze data, point out problems and present solutions, participate independently and collaboratively with other team members in the healthcare system.
4.2.1	**4.2.1.1**	Make use of clear language, pace, tone and non-verbal communication and writing skills when dealing with patients, other health team and communities.
4.2.2	**4.2.2.1**	Employ advanced technologies and channels whenever possible to present relevant information.
4.3.1	**4.3.1.1**	Conduct self-evaluation strategies to manage and improve professional of pharmacy.
4.3.2	**4.3.2.1**	Encourage continuous professional development by practicing self and independent learning.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Introduction to basic concepts of food, nutrition and health	2
2	Food groups and concept of a balanced diet.	2
3	Nutritional needs during life cycle and physiological conditions	2
4	Protein energy malnutrition	2
5	Vitamin A deficiency, Iron deficiency anemia their symptoms, treatment and prevention	2
6	Social health problems	**2**
7	Life style related diseases: hypertension	2
8,9	Life style related diseases: diabetes mellitus	4
10	Life style related diseases: obesity	2
11	Life style related diseases: dietary/lifestyle modifications.	2
12	Nutrients requirements for obesity.	2

13	Nutrients requirements for diabetes.	2
14	Revision/quiz	2
15	**Final written and oral exam**	-

4- Teaching and learning Methods:

No	Teaching and learning Methods	Week
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • On line learning through my mans "Mansoura university "as recorded – video lectures • Inter active discussion through My Mans	1-14
4.2	Self-learning	13
4.3	Class Activity: Group discussion offline and online.	8
4.4	Problem – based learning and brainstorming	8
4.5	Research assignments	12

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1, 1.1.2.1, 1.1.4.1, 1.1.5.1, 1.1.6.1, 2.1.2.1, 2.4.3.1, 2.5.2.1
2-Oral	1.1.1.1, 1.1.5.1, 2.1.2.1, 2.4.3.1, 2.5.2.1, 4.1.2.1, 4.2.2.1, 4.3.1.1
3- Periodical (Mid-term exam) / case study	1.1.1.1, 1.1.6.1, 2.5.2.1, 4.1.1.1, 4.3.2.1

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	8th week
Assessment 2	Written exam	15th week
Assessment 3	Oral exam	15th week

c. Weighing of assessments

1	**Mid-term examination**	**10 %**
2	**Final-term examination**	**75 %**
3	**Oral examination**	**15 %**

Total	**100%**

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Microscopes- chemicals- glass wares- white board

7- Matrix of course content versus course k. elements:

Week No.	Course contents / K. elements	Domain1					Domain2			Domain3		Domain4				
		1.1. 1.1	1.1. 2.1	1.1. 4.1	1.1. 5.1	1.1. 6.1	2.1. 2.1	2.4. 3.1	2.5. 2.1	3.1. 1.1	3.2. 2.1	4.1. 2.1	4.2. 1.1	4.2. 2.1	4.3. 1.1	4.3. 2.1
1	Introduction to basic concepts of food, nutrition and health	√						√								
2	Food groups and concept of a balanced diet.	√		√		√	√		√							
3,4	Nutritional needs during life cycle and physiological conditions, Protein energy malnutrition	√	√		√	√				√		√	√	√		
5	Vitamin A deficiency, Iron deficiency anemia their symptoms, treatment and prevention	√	√		√	√	√	√	√	√	√	√	√	√		
6	Social health problems		√		√			√	√	√	√	√		√		
7,8,9,10	Life style related diseases: hypertension and diabetes mellitus and obesity	√	√	√	√				√	√			√	√		
11	Life style related	√	√		√	√	√						√	√		

	diseases: dietary/lifestyle modifications.																		
12	Nutrients requirements for obesity.	√	√			√								√	√		√	√	
13	Nutrients requirements for diabetes.		√		√	√		√	√			√	√		√	√	√	√	

8- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos prepared by staff members	Videos on platform
3.	Nutrition therapy and pathophysiology, Marcia Nelms and Kathryn P. Sucher,Wadsworth, Inc,4th edition,2020.	Books
4.	Nutrition for health and health care,Linda Kelly DeBruyne and Kathryn Pinna, Cengage learning, 6th edition,2017.	Books
5.	William's basic nutrition and diet therapy, Staci Nix, Elsevier, 16th edition,2020	Books
6.	Basic nutrition, Lori A. Smolin, Ph.D. and Mary B. Grosvenor, M.S., R.D., Chelsea house,3rd edition, 2019.	Books
7.	www.nutrition.gov/topics/healthy-living-and-weight/weight-management-youth www.nutrition.gov/topics/diet-and-health-conditions www.nutrition.gov/topics/diet-and-health-conditions/cancer https://www.ekb.eg	Web sites

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