Level 5

Semester (9)

Course Title	Course code
Toxicology and forensic chemistry	PO 904
Therapeutics -I	PO 905
Clinical pharmacokinetics	PP 907
Phytotherapy	PG 907
Clinical nutrition	PP 904
Drug interactions	PO 906

Semester (10)

Course Title	Course code
Therapeutics -II	PO 007
Management of dermatological and reproducti diseases	PP 008
Management of Pediatrics diseases	PP 009
Management of Cardiovascular diseases	PP 010
Management of Gastrointestinal diseases	PP 011
Management of Respiratory system diseases	PP 012
Drug information	PP 013
Antimicrobial Agents	PM E6
Productions and Manufacture of Medicinal Plants	PG E9
Chromatography and Separation Techniques	PG E10
Advanced Pharmaceutical Analysis -Spectroscopy	PC E12
Cosmetic Preparations	PT E13

المستوى الخامس

Course Specification: Toxicology and Forensic Chemistry

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmacology and Toxicology
Course title: Toxicology and Forensic Chemistry

Course code: PO 904

Program on which the course is given	B. Pharm (Clinical Pharmacy), Modified and unified bylaw)
Academic Level	Level 5, Second semester, 2023/2024
Date of course specification approval	18/9/2023

A. Basic Information : Course data :

Course title:	Toxicology and Forensic Chemistry	**Code: PO 904**
Specialization:	Health and Environmental	
Prerequisite:	Pharmacology II	
Teaching credit Hours:	**Lecture:** 2	**Practical:** 1
Total Number of units: (credit hours)	3 **hours**	

B. Professional Information:

1- Course Aims:

Toxicology and Forensic Chemistry course aims to:	
1.	Provide knowledge and understanding of the basic principles of toxicology and forensic chemistry.
2.	Provide comprehensive coverage of the major commonly encountered toxins, drugs and chemotherapeutic agents affecting different body systems and organs.
3.	Provide comprehensive coverage of the impact of toxins encounter on various body organs and tissues

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
1.1.4	1.1.4.1	List the mode of the action of drugs and their therapeutic effects as well as evaluate their suitability, efficacy and safety in individuals and populations.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.4.4	2.4.4.1	Recognize 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
3.2.1	3.2.1.1	Monitor principles of pharmacological aspects of drugs, unwanted effects and drug interactions.
3.2.4	3.2.4.1	Provide suitable information about toxicity of medicinal agents and other xenobiotics including possible sources, signs, symptoms and treatment options.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.2.2	4.2.2.1	Use artificial technology when possible to present applicable information
4.3.1	4.3.1.1	Apply effective plans to achieve and improve self-practice of pharmacy.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Principles and introduction of toxicology	2

2	Reactive metabolites and acute toxicity	2
3	Target organ toxicity (kidney)	2
4	Target organ toxicity (liver)	2
5	Target organ toxicity (lung, heart & blood)	2
6	Target organ toxicity (brain & skin)	2
7	Carcinogenesis	2
8	Teratogenesis	2
9	Selective Toxicity	2
10	Heavy metal toxicity (lead, copper & mercey)	2
11	Heavy metal toxicity (iron & cobalt)	2
12	Drug induced toxicity (Digoxin)	2
13	Drug induced toxicity (Methotroxate)	2
14	Drug abuse (**self-learning)**	2
15	**Revision**	
16	**Final written and oral exam**	
Week No.	**Practical Topics**	**Practical credit hours**
1.	Acute toxicity determination	1
2.	Cyanide toxicity	1
3.	Cardiac glycosides toxicity	1
4.	CNS stimulant toxicity	1
5.	Insecticide toxicity	1
6.	Nicotine toxicity	1
7.	Acetaminophen toxicity	1

8	**Mid-term exam**	
9	Aspirin toxicity	1
10	case study 1 & 2	1
11.	case study 3 & 4	1
12	case study 5 & 6	1
13.	case study 7	1
14	Student activities	1
15	**Practical exam**	

5. Teaching and Learning Methods:

	Teaching and learning methods
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**
5.2	**Self-learning**
5.3	**Practical session using chemicals and laboratory equipment and/ or tutorials**
5.4	**Class Activity: Group discussion offline and online.**
5.5	**Practical classes provided with experimental animals for handling and demonstration of toxicities with data shows and white boards for data presentation**
5.6	**Student seminars and research assignments.**

5- Student Assessment:

Assessment methods

Mid Term exam	**1.1.8.1, 2.4.4.1, 3.2.1.1, 3.2.4.1**
Practical exam	**1.1.8.1, 2.4.4.1, 3.2.1.1 , 3.2.4.1, 4.2.2.1, 4.3.1.1**

Final Written exam	**1.1.8.1, 2.4.4.1, 3.2.1.1, 3.2.4.1**
Oral exam	**1.1.8.1, 2.4.4.1, 3.2.1.1, 3.2.4.1, 4.2.2.1, 4.3.1.1**

b. Assessment schedule

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

c. Weighting 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	Data show- Computers - white board

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

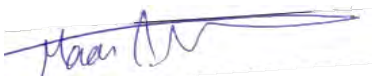
Study Week	Course contents	Outcomes Domains / Key elements								
		Domain 1		Domain 2		Domain 3			Domain 4	
		1.1.4.1		2.4.4.1		3.2.1.1	3.2.4.1		4.2.2.1	4.3.1.1
1	Principles and introduction of toxicology	✓								✓
2	Reactive metabolites and acute toxicity	✓				✓				✓
3	Target organ toxicity (kidney)			✓			✓			✓
4	Target organ toxicity (liver)			✓			✓			✓
5	Target organ toxicity (lung, heart & blood)			✓			✓			✓
6	Target organ toxicity (brain & skin)	✓		✓			✓			
7	Carcinogenesis									
8	Teratogenesis	✓		✓			✓		✓	✓
9	Selective Toxicity	✓		✓			✓		✓	✓
10	Heavy metal toxicity (lead, copper & mercey)	✓		✓		✓	✓		✓	✓
11	Heavy metal toxicity (iron & cobalt)	✓		✓		✓	✓		✓	✓
12	Drug induced toxicity (Digoxin)	✓		✓		✓	✓		✓	✓
13	Drug induced toxicity (Methotroxate)	✓		✓		✓	✓		✓	✓
14	Drug abuse (**self-learning)**	✓		✓		✓	✓		✓	✓
15	**Revision**	✓		✓		✓	✓		✓	✓

Study Week	Course contents	Outcomes Domains / Key elements							
		Domain 1		Domain 2		Domain 3		Domain 4	
		1.1.4.1		2.4.4.1		3.2.1.1	3.2.4.1	4.2.2.1	4.3.1.1
	B) Practical part								
1	Acute toxicity determination	✓							
2	Cyanide toxicity	✓				✓			
3	Cardiac glycosides toxicity			✓			✓		
4	CNS stimulant toxicity			✓			✓		
5	Insecticide toxicity			✓			✓		✓
6	Nicotine toxicity	✓		✓			✓		
7	Acetaminophen toxicity	✓		✓		✓	✓	✓	✓
9	Aspirin toxicity	✓		✓			✓	✓	✓
10	case study 1 & 2	✓		✓			✓	✓	✓
12	case study 3 & 4	✓		✓		✓	✓	✓	✓

13	case study 5 & 6	✓		✓		✓	✓		✓	✓	
14	Student activities								✓	✓	

8- List of References

No	Reference	Type
1.	Electronic book prepared by staff members.	**Course notes**
2.	Lippincott's Pharmacology; illustrated review; Karen Whalen. Wolters Kluwer; 8th edition (2022).	**Book**
3.	Basic & Clinical Pharmacology; Katzung B.G., & Vanderah T.W. (Eds.). McGraw Hill Lange; 15th edition (2021).	**Book**
4.	https://www.ncbi.nlm.nih.gov/books/NBK482426/ https://www.ekb.eg	**websites**

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

Date: 18/ 9/ 2023

Course specification
2023/2024
Clinical Pharmacy Program
Faculty of Pharmacy
Mansoura University

Fifth Level

Course Specification Therapeutics-1

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmacology and toxicology
Course title: Therapeutics I
Course code: PO 905

Program on which the course is given	**B. Pharm. (clinical pharmacy) (modified and unified by law)**
Academic Level	Level 5, First semester, 2023/2024
Date of course specification approval	September 2023

1. Basic Information: Course data:

Course title:	**Therapeutics I**	**Code: PO 905**
Specialization:	**Medical sciences**	
Prerequisite:	**Pharmacology-2**	
Teaching Hours:	**Lecture: 2**	**Practical: 1**
Number of units: (credit hours)	**3**	

2. Course Aims:

2.1. Provide knowledge about pharmacotherapy of certain cardiovascular diseases
2.2. Provide knowledge about bone disorders pharmacotherapy
2.3. Provide knowledge about Kidney disorders management
2.4. Inform the students about the pathophysiology of the diseases in brief
2.5. Provide coverage on the available drug algorithm that should be followed during treatment
2.6. Give an idea about nonpharmacological treatment of different diseases
2.7. Provide essential knowledge about treatment of special populations
2.8. Give the student an idea about the available dosage forms and dose regimen

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
1.1.4	1.1.4.1	Articulate knowledge from fundamental sciences to drug appropriateness, effectiveness, and safety in individuals and populations.

1.1.5	1.1.5.1	Understand pharmacotherapeutic guidelines for management of certain cardiovascular diseases, bone and kidney 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	Design pharmacologic care plans for management of disorders with reference to their particulate health problems and special considerations
	2.4.3.2	Make decisions for recognized drug-related and pharmaceutical care problems
	2.4.3.3	Recommend pharmacological and non-pharmacological systemic approaches for management of disorders affecting different body organs
	2.4.3.4	Select suitable care plans for patients with special consideration to their particular health issues

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.1	3.2.1.1	Integrate the proper therapeutic uses of different drugs
	3.2.1.2	Consult healthcare team about the proposed care plan appropriate for the patient

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Share decisions with pharmacy and non-pharmacy team members with effective time management skills
	4.1.2.2	Follow up the treatment plan to solve problems and achieve the desired treatment outcomes
4.3.1	4.3.1.1	Retrieve patient information from different sources to improve professional competencies

4. Contents:

Week No	Topics	Lecture credit hours
1	Therapeutic management of osteoarthritis	2
2	Treatment guidelines for osteoporosis	2

3	Therapeutic management of rheumatoid arthritis	2
4	Pharmacotherapy for hypertension (part 1)	2
5	Pharmacotherapy for hypertension (part 2)	2
6	Therapeutic management of angina (part 1)	2
7	Therapeutic management of acute coronary syndrome (part 1)	2
8	Therapeutic management of acute coronary syndrome (part 2)	2
9	Pharmacotherapy for heart failure (part 1)	2
10	Pharmacotherapy for heart failure (part2)	2
11	Treatment approaches for acute kidney injury	2
12	Therapeutic management of chronic kidney disease	2
13	Therapeutic management of chronic kidney disease complications (self learning)	2
14	Revision/quiz	2
15	Final written and oral exam	
Week No	**Practical topics**	**Practical credit hours**
1	Therapeutic management of osteoarthritis (case study)	1
2	Treatment guidelines for osteoporosis (case study)	1
3	Therapeutic management of rheumatoid arthritis (case study)	1
4	Pharmacotherapy for hypertension (case study)	1
5	Therapeutic management of angina (case study)	1
6	Therapeutic management of acute coronary syndrome (case study)	1
7	Therapeutic management of acute coronary syndrome (case study)	1
8	**Mid-term Exam**	
9	Pharmacotherapy for heart failure (case study)	1
10	Treatment approaches for acute kidney injury (case study)	1
11	Treatment approaches for acute kidney injury complications (case study)	1
12	Therapeutic management of chronic kidney disease (case study)	1
13	Therapeutic management of chronic kidney disease complications (case study)	1
14	**Practical exam**	1

5. Teaching and learning Methods:

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

6. Student Assessment:

Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.4.1, 1.1.5.1, 2.4.3.1, 2.4.3.2, 2.4.3.3, 2.4.3.4
2-Practical exam	3.2.1.1, 3.2.1.2
3-Oral	1.1.4.1, 1.1.5.1, 2.4.3.1, 2.4.3.2, 2.4.3.3, 2.4.3.4, 3.2.1.1, 3.2.1.2, 4.1.2.1, 4.1.2.2, 4.3.1.1
4-Formative Assessment	1.1.4.1, 1.1.5.1, 2.4.3.1, 2.4.3.2, 2.4.3.3, 2.4.3.4

b- Assessment schedule:

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

c- Weighting 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%

7. List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2	Michael Katz, Kathryn R. Matthias, Marie Chisholm-Burns (2019)Pharmacotherapy Principle and Practice 5th edition McGraw Hill Professional	Book
3	Pharmacotherapy Handbook; Terry L. Schwinghammer; Joseph T. DiPiro; Vicki Ellingrod; Cecily V. DiPiro. McGraw Hill / Medical; 11th ed. (2021).	Book
4	Schwinghammer's Pharmacotherapy Casebook: A Patient-Focused Approach; Terry L. Schwinghammer; Julia M. Koehler; Jill S. Borchert; Douglas Slain; Sharon K. Park. McGraw Hill / Medical; 12th ed. (2023).	Book
5	http://www.sciencedirect.com http://www.googlescholar.com http://www.pubmed.com https://www.ekb.eg ACCP guidelines (https://www.accp.com/)	websites

8. Matrix of course content versus course k. elements:

We	Course contents /	Domain		Domain 2		Domain		Domain 4

ek No.	K. elements	1								3						
		1.1.4.1	1.1.5.1		2.4.3.1	2.4.3.2	2.4.3.3	2.4.3.4		3.2.1.1	3.2.1.2		4.1.2.1	4.1.2.2	4.3.1.1	
1	Therapeutic management of osteoarthritis	✓	✓		✓	✓	✓	✓		✓						
2	Treatment guidelines for osteoporosis	✓	✓		✓	✓	✓	✓		✓	✓					
3	Therapeutic management of rheumatoid arthritis	✓	✓		✓	✓	✓	✓		✓	✓					
4	Pharmacotherapy for hypertension (part 1)	✓	✓		✓	✓	✓	✓		✓	✓					
5	Pharmacotherapy for hypertension (part 2)				✓	✓	✓	✓		✓	✓		✓	✓	✓	
6	Therapeutic management of angina (part 1)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
7	Therapeutic management of acute coronary syndrome (part 1)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
8	Therapeutic management of acute coronary syndrome (part 2)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
9	Pharmacotherapy for heart failure (part 1)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
10	Pharmacotherapy for heart failure (part2)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
11	Treatment approaches for acute kidney injury	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
12	Therapeutic management of chronic kidney disease	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
13	Therapeutic management of chronic kidney disease complications	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
14	Revision/quiz	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	
	Practical topics															
1	Therapeutic management of osteoarthritis (case study)	✓	✓		✓	✓	✓	✓		✓	✓					
2	Treatment guidelines for osteoporosis (case study)	✓	✓		✓	✓	✓	✓		✓	✓					
3	Therapeutic management of rheumatoid arthritis (case study)	✓	✓		✓	✓	✓	✓		✓	✓					
4	Pharmacotherapy for hypertension (case	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	

	study)														
5	Therapeutic management of angina (case study)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
6	Therapeutic management of acute coronary syndrome (case study)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
7	Therapeutic management of acute coronary syndrome (case study)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
9	Pharmacotherapy for heart failure (case study)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
10	Treatment approaches for acute kidney injury (case study)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
11	Treatment approaches for acute kidney injury complications (case study)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
12	Therapeutic management of chronic kidney disease (case study)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
13	Therapeutic management of chronic kidney disease complications (case study)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓

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

Date: September 2023

Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program

Course specification
2022-2023
Unified and modified bylaw

بكالوريوس الصيدلة الإكلينيكية (اللائحة الموحدة والمعدلة)

Course Specification

Academic year: 2022-2023

Course name: Clinical Pharmacokinetics	اسم المقرر: حركية الدواء الإكلينيكية
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية و الممارسة الصيدلية
Head of Department: **Dr. Moetaza Mahmoud Soliman**	رئيس القسم: أ.م. د/ معتزه محمود حسب السيد
Course Coordinator: **Dr. Noha Osama Mansour**	منسق المقرر: د/ نهي أسامة منصور

Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program

Course specification
2022-2023
Unified and modified bylaw

University	Mansoura
Faculty	Pharmacy
Department offering the course	Clinical Pharmacy and Pharmacy Practice
Department supervising the course	
Program on which the course is given	**B. Pharm. (Unified and modified) (Clinical Pharmacy)**
Academic Level	Fifth level, second semester, 2022-2023
Date of course specification approval	8th September 2022

1- Basic Information: Course data:

Course Title	**Clinical Pharmacokinetics**
Course Code	**PP 907**
Prerequisite	**Biopharmaceutics and pharmacokinetics**
Credit Hours: Lecture	**2**
Tutorial	**1**
Total Credit Hours	**3 (Credit H)**

2- Course Aims:

- Introduce the models of linear and dose-dependent systems in pharmacokinetics
- Pharmacokinetic applications in therapeutic drug monitoring and patient care
- Specific drugs and disease states, effects of age and concomitant drug administration
- Dose Adjustment according to patient characteristics

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	Recognize pharmacokinetic calculations essential for optimization of dosage regimens for optimal patient care.

DOMAIN 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.1.1	3.1.1.1	Adjust the dosage regimen in different special patient populations to optimize the medication use.
3.2.5	3.2.5.1	Advise healthcare professionals about the optimum dosing regimens for different medications with special attention paid to the drugs with narrow therapeutic index

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.3.2	4.3.2.1	Practice self-learning to improve professional skills

4- Course Contents

Week No.	Lecture Topics	Lecture Credit Hours
1	Pharmacokinetics parameters meaning	2
2	Pharmacokinetics after IV bolus administration	2
3	Pharmacokinetics after Oral administration	2
4	Bioavailability	2
5	Pharmacokinetics after IV infusion	2
6	Multiple dose administration (IV and oral)	2
7	Pharmacokinetics in case of liver disease	2
8	Pharmacokinetics in case of Kidney disease	2
9	Two compartment kinetic models	2

10	**Nonlinear pharmacokinetics**	2
11	**Vancomycin**	2
12	**Aminoglycosides**	2
13	**Therapeutic drug Monitoring: Digoxin**	2
14	**Therapeutic drug Monitoring: Lithium, (self-learning topic)** **Revision**	2
15	**Final written and oral exam**	**-**

Week No.	Tutorial topics	Credit hours
1	Pharmacokinetics after IV bolus administration	1
2	Pharmacokinetics after Oral administration	1
3	Bioavailability	1
4	Pharmacokinetics after IV infusion	1
5	Multiple dose administration (IV and oral)	1
6	Pharmacokinetics in case of kidney disease and liver disease	1
7	Non-linear pharmacokinetics	1
8	Periodical (midterm exam)	-
9	Vancomycin	1
10	Aminoglycosides	1
11	Therapeutic drug Monitoring: Lithium and Digoxin	1
12	Two compartment model	1
13	Group project: Therapeutic drug Monitoring: theophylline and carbamazepine, revision	2
14	**Sheet / and Tutorial exam (OSPE)**	-

5- Teaching and Learning Methods:

	Teaching and learning Methods	Weeks No.	K. elements to be addressed
5.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning ● Online learning through Mymans "Mansoura university "as recorded – video lectures ● Inter active discussion through My Mans	Week 1-14	1.1.7.1, 3.1.1.1, 3.2.5.1
5.2	Self-learning	Week 13	4.3.2.1
5.3	Practical session tutorials	Week 1-13	1.1.7.1,3.1.1.1, 3.2.5.1
5.4	Class Activity: Group discussion offline and online.	Week 1-14	3.1.1.1, 3.2.5.1
5.5	Problem – based learning and brainstorming	Week 1-14	3.1.1.1, 3.2.5.1
5.6	Research assignments	Week 1-14	3.1.1.1, 3.2.5.1, 4.3.2.1

6- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.7.1, 3.1.1.1, 3.2.5.1, 4.3.2.1
2-Tutorial exam (OSPE)	3.1.1.1, 3.2.5.1, 4.3.2.1
3-Oral	3.1.1.1, 3.2.5.1, 4.3.2.1
4- Periodical (Mid-term exam) / Course work	1.1.7.1, 3.1.1.1, 3.2.5.1

b- Assessment schedule

Assessment 1	Periodical (Mid-term exam)	8th week
Assessment 2	Tutorial examination (OSPE)	14th week
Assessment 3	Written exam	Starting 15th week
Assessment 4	Oral exam	Starting 15th week

c- Weighing of assessments

1	Periodical (Mid-term) exam	10%
2	Tutorial examination (OSPE)	25%
3	Final written examination	50%
4	Oral examination	15%
Total		100%

7- Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, Platform
Library	Books

8- Matrix of knowledge and skills of the course

Study Week No.	Course contents	Outcomes Domains / Key elements			
		Domain 1	Domain 3		Domain 4
		1.1.7.1	3.1.1.1	3.2.5.1	4.3.2.1
1	**Pharmacokinetics parameters meaning**	√			
2	**Pharmacokinetics after IV bolus administration**	√			
3	**Pharmacokinetics after Oral administration**	√			
4	**Bioavailability**	√		√	
5	**Pharmacokinetics after IV infusion**	√	√	√	
6	**Multiple dose administration (IV and oral)**	√		√	
7	**Pharmacokinetics in case of liver disease**	√	√	√	
8	**Pharmacokinetics in case of Kidney disease**	√	√	√	
9	**Two compartment kinetic models**	√			
10	**Nonlinear pharmacokinetics**	√		√	√
11	**Vancomycin**	√	√	√	√
12	**Aminoglycosides**	√	√	√	√
13	**Therapeutic drug Monitoring: Digoxin**	√	√	√	√
14	**Therapeutic drug Monitoring: Lithium, (self-learning topic)** **Revision**	√	√	√	√
	Practical topics				
1	Pharmacokinetics after IV bolus administration		√	√	√
2	Pharmacokinetics after Oral administration		√	√	√
3	Bioavailability		√	√	√
4	Pharmacokinetics after IV infusion		√	√	√
5	Multiple dose administration (IV and oral)		√	√	√
6	Pharmacokinetics in case of kidney disease and liver disease		√	√	√
7	Non-linear pharmacokinetics		√	√	√

Study Week No.	Course contents	Outcomes Domains / Key elements			
		Domain 1	Domain 3		Domain 4
		1.1.7.1	3.1.1.1	3.2.5.1	4.3.2.1
8	Periodical (midterm exam)		√	√	√
9	Vancomycin		√	√	√
10	Aminoglycosides		√	√	√
11	Therapeutic drug Monitoring: Lithium and Digoxin		√	√	√
12	Two compartment model		√	√	√
13	Group project: Therapeutic drug Monitoring: theophylline and carbamazepine, revision		√	√	√

9- 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.	Clinical Pharmacokinetics, 1st Edition (2006).	Essential Book
4.	Applied Biopharmaceutics and Pharmacokinetics, 7th Edition by Madjackfrost (2016)	Essential Book
6.	Lexicomp, Dynamed Plus and BMJ best practice http://www.pubmed.com http://www.sciencedirect.com/ https://scholar.google.com/ https://www.ekb.eg	Websites

Course Coordinator	**Dr. Moetaza Mahmoud Hassab**
	Moetaza Soliman
Head of Department	**Prof. dr. Mohamed Elhusseiny Shams**

Date: 7 / 9 / 2023

Course specification
2023/2024
Clinical Pharmacy Program
Faculty of Pharmacy
Mansoura University

Level-5
Clinical Pharmacy Students
(Credit Hour System)

Course Specification Phytotherapy

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmacognosy
Course title: **Phytotherapy**
Course code: PG907

Program on which the course is given	B. Pharm (Modified and unified bylaw Clinical Pharmacy)
Academic Level	Level 5, First semester, 2020/2021
Date of course specification approval	6 9 / 2023

1. Basic Information: Course data:

Course title:	**Phytotherapy**	**Code: PG-907**
Specialization:	**Pharmaceutical**	
Prerequisite:	**Phytochemistry-2**	
Teaching Hours:	**Lecture: 2**	**Practical: 1**
Number of units: (credit hours)	**3**	

2. Course Aims:

2.1 Understanding the concept of phytotherapy, complementary and alternative medicine
2.2 Acquiring a good knowledge about the different types of complementary and alternative medicine as phytotherapy and herbal remedies, homeopathy, aromatherapy, flower remedies, chiropractic, acupuncture, cupping, crystal therapy and reflexology

3. Course key 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 the concept of phytotherapy, complementary and alternative medicine

1.1.3	1.1.3.1	Identify the principles and methods of quality control of herbal drugs and formulations
1.1.4	1.1.4.1	Explain the mechanism of action, therapeutic uses and adverse drug reactions of plants used in phytotherapy
1.1.5	1.1.5.1	Select drugs from natural origin to be used for treatment of diseases of the different systems.

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 the quality control from herbal aspects, sampling, structural , physical and analytical standards, purity, safety and adulteration of drugs and their detection.
2.3.1	2.3.1.1	Apply different qualitative and quantitative analytical, chemical, microscopical and biological methods for the quality control of herbal drugs and formulations

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.3	3.2.3.1	Utilize naturally occurring drugs for preparation of herbal formulations that can be used safely for treatment of different body systems 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.
4.3.2	4.3.2.1	Practice self-learning to improve professional skills.

4. Contents:

Week No	Topics	No. of hours	Lecture credit hours	Practical credit hours
1	Introduction to phytotherapy	2	2	
2	Forms of complementary and alternative medicine which do not use medicinal plants, Traditional Systems of Herbal Medicine, Traditional Chinese Medicine (TCM), Ayurveda	2	2	
3	The Greek and Roman Contribution, The Middle Ages and Islamic Contribution, Herbal medicine today, Herbal products regulation	2	2	
4	The gastrointestinal system	2	2	
5	The eye, The ear, nose and oropharynx	2	2	
6	Supportive Therapies for Stress, Aging and Debility	2	2	
7	The cardiovascular system	2	2	
8	The central nervous system	2	2	
9	The endocrine system	2	2	
10	The respiratory system	2	2	
11	The renal system	2	2	
12	Herbal formulation and dosage forms	2	2	
13	Herb-drug interactions	2	2	
14	Revision and research assignment	2	2	
15	Final written and oral exams			
Practical topics				
Week No	**Topics**	**No. of hours**	**Lecture credit hours**	**Practical credit hours**
1	Introduction: Traditional Systems of Herbal Medicine, Traditional Chinese Medicine (TCM), Ayurveda	2		1
2	Extraction methods & apparatus	2		1
3	Peptic ulcer assay	2		1
4	Anti-inflammatory assay	2		1

5	Analgesic assay	2		1
6	ABTS anti-oxidant assay	2		1
7	Brine shrimp Cytotoxic assay	2		1
8	Herbal drugs + Case studies + Seminars	2		1
9	Herbal drugs + Case studies + Seminars	2		1
10	Herbal drugs + Case studies + Seminars	2		1
11	Herbal drugs + Case studies + Seminars	2		1
12	Herbal drugs + Case studies + Seminars	2		1
13	Revision	2		1
14	Practical exam	--		--

5. Teaching and learning Methods:

	Teaching and Learning Methods	Week No.
5.1	Computer aided learning: a. Online learning through my mans "Mansoura university "as recorded – video lectures b. Inter active discussion through My Mans • PowerPoint presentation	1-14
5.2	Practical session using laboratory equipment and through platform	1-13
5.3	Self-learning	13
5.4	Class Activity: Group discussion offline and online.	11
5.5	Research assignments	13
5.6	Case study	9-12

6. Student Assessment:

a- Assessment methods

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1., 1.1.3.1, 1.1.4.1, 1.1.5.1, 2.2.1.1, 2.3.1.1, 3.2.3.1, 4.2.1.1, 4.3.2.1
2-Practical exam	2.2.1.1, 2.3.1.1, 3.2.3.1, 4.2.1.1, 4.1.2.1
3-Oral	1.1.1.1, 1.1.3.1, 1.1.4.1, 1.1.5.1, 2.2.1.1, 2.3.1.1, 3.2.3.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1., 1.1.4.1, 1.1.5.1, 1.1.3.1, 4.2.1.1

b- Assessment schedule

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

c- Weighting 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 %

7. List of References

N0.	Reference	Type
1	- Michael Heinrich, Joanne Barnes, Simon Gibbons and Elizabeth M. Williamson;"Fundamentals of pharmacognosy and phytochemistry"2nd edition 2018 Elsevier Ltd.	Book
2	- Kerry Bone and Simon Mills," Principles and practice of phytotherapy" 2017 Elsevier Ltd.	Book
3	- Phytotherapies: Efficacy, Safety, and Regulation edited by Iqbal Ramzan, 2015	Book

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

Week No.	Course contents / K. elements	Domain 1				Domain 2		Domain 3	Domain 4		
		1.1.1.1	1.1.3.1	1.1.4.1	1.1.5.1	2.2.1.1	2.3.1.1	3.2.3.1	4.1.2.1	4.2.1.1	4.3.2.1
1	Introduction to phytotherapy	✓	✓						✓		
2	Forms of complementary and alternative medicine which do not use medicinal plants, Traditional Systems of Herbal Medicine, Traditional Chinese Medicine (TCM), Ayurveda			✓	✓						
3	The Greek and Roman Contribution, The Middle Ages and Islamic Contribution, Herbal medicine today, Herbal products regulation			✓	✓					✓	
4	The gastrointestinal system	✓									
5	The eye, The ear, nose and oropharynx			✓	✓					✓	
6	Supportive Therapies for Stress, Aging and Debility		✓	✓	✓				✓		✓
7	The cardiovascular system			✓	✓					✓	✓
8	The central nervous system			✓	✓					✓	✓
9	The endocrine system										
10	The respiratory system	✓	✓	✓							
11	The renal system	✓	✓	✓							
12	Herbal formulation and dosage forms		✓	✓	✓						
13	Herb-drug interactions	✓	✓	✓	✓						
14	Revision and research assignment	✓	✓	✓	✓						
	Practical topics										
1	Introduction: Traditional Systems of Herbal Medicine, Traditional Chinese Medicine (TCM), Ayurveda					✓	✓	✓	✓	✓	
2	Extraction methods & apparatus						✓	✓	✓	✓	✓
3	Peptic ulcer assay						✓	✓	✓	✓	✓

4	Anti-inflammatory assay						✓	✓	✓	✓	✓
5	Analgesic assay						✓	✓	✓	✓	✓
6	ABTS anti-oxidant assay					✓	✓	✓	✓	✓	
7	Brine shrimp Cytotoxic assay				✓	✓	✓	✓	✓		
8	Herbal drugs + Case studies + Seminars				✓	✓	✓	✓	✓		
9	Herbal drugs + Case studies + Seminars				✓	✓	✓	✓	✓		
10	Herbal drugs + Case studies + Seminars				✓	✓	✓	✓	✓		
11	Herbal drugs + Case studies + Seminars				✓	✓	✓	✓	✓		
12	Herbal drugs + Case studies + Seminars				✓	✓	✓	✓	✓		
13	Revision						✓	✓	✓	✓	✓

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.	- Michael Heinrich, Joanne Barnes, Simon Gibbons and Elizabeth M. Williamson;"Fundamentals of pharmacognosy and phytochemistry", 2nd edition 2015 Elsevier Ltd.	Book
4.	- Kerry Bone and Simon Mills," Principles and practice of phytotherapy", 2017 Elsevier Ltd.	Book
5.	- Phytotherapies: Efficacy, Safety, and Regulation edited by Iqbal Ramzan, 2015	Book
6.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	**websites**

Course Coordinator	**Prof. Dr. ……**
Head of Department	**Prof. Dr.** Mahmoud Fahmy Elsebaie

Date: 6 / 9 / 2023

Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program

Course specification
2023- 2024

Course Specification

Academic year: 2023-2024

Course name: Clinical Nutrition	**تغذية اكلينيكية : المقرر اسم**
Academic Level:5	**الخامس: المستوى الأكاديمي**
Scientific department: Biochemistry	**الكيمياء الحيوية : القسم العلمي**
Head of Department: **Dr. Noha Mansour Hassan**	**رئيس القسم :** **أ.م.د/ نهي منصور حسن**
Course Coordinator: **Prof. Dr. Laila A. Eissa**	**منسق المقرر :** **أ.د/ ليلى أحمد عيسى**

University	Mansoura
Faculty	Pharmacy
Department offering the course	Biochemistry
Department supervising the course	Biochemistry
Program on which the course is given	Bachelor of Pharmacy (Clinical Pharmacy)
Academic Level	fifth level, first semester, 2023-2024
Date of course specification approval	16/9/2023

Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program

Course specification
2023- 2024

A. Basic Information: Course data:

Course Title	Clinical nutrition
Course Code	PB 904
Prerequisite	Registration
Teaching credit Hours: Lecture	1
Practical	1
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 of clinical nutrition	1
2	assessment of nutrition	1
3	Macronutrients and calculation of calories, Vitamins and minerals (role in metabolism – clinical significance)	1
4	Basal metabolic rate (BMR) - Recommended daily allowance (RDA),energy balance	1
5	Dietary care for patient with hepatic disorders	1
6	Dietary care for patient with renal disorders	1
7	Nutritional requirement for pediatrics	**1**
8	Dietary care for patients with obesity	-
9	Gut microbiota and human health	1
10	Self-learning (cardiac diseases) and nutritional management of diabetes	1

	mellitus	
11	Dietary care for cancer patients	1
12	Dietary care for pregnant and lactation	1
13	Total Parentral Nutrition	1
14	Entral nutrition, Nutrigenomics	1
15	**Final written and oral exam**	**-**
Practical topics		
Week No	**Topics**	**No. of hours**
1	Lab instructions and safety	1
2	Assessment of Nutrition	1
3	Diet and digestive system	1
4	Diet and renal Disease	1
5	Diet and Osteoporosis	1
6	Nutrition in celiac disease	1
7	Nutritional requirements during life stages (geriatrics,pediatrics)	1
8	Periodical exam	
9	Diet and sport care	1
10	Entral nutrition	1
11	Parental Nutrition	1

12	Nutrition management in different types of anemia	1
13	Nutrition management in Pregnancy	1
14	Practical Exam	1

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	1-5,7-13
5.2	Self-learning	13
5.3	Practical session using chemicals and laboratory equipment and/ or tutorials	1-5,7-13
5.4	Class Activity: Group discussion offline and online.	8
5.5	Problem – based learning and brainstorming	8
5.6	Research assignments	12
5.7	Formative assignments	3 & 9

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, 3.1.1.1, 3.2.2.1, 4.1.2.1, 4.2.1.1, 4.2.2.1
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	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
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	**Practical**	14th week
Assessment 2	**Periodical**	8th week
Assessment 3	**Oral**	15th week
Assessment 4	**Written**	15th week

c. Weighing of assessments

1.	**Periodical 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				Domain 3			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 of clinical nutrition	√				√			√			√							
2	assessment of nutrition	√		√		√		√		√		√	√						
3	Macronutrients and calculation of calories,	√	√		√	√						√			√	√	√		

	Vitamins and minerals (role in metabolism – clinical significance)																	
4	Basal metabolic rate (BMR) - Recommended daily allowance (RDA),energy balance	**√**	**√**		**√**	**√**		**√**	**√**	**√**		**√**	**√**		**√**	**√**	**√**		
5	Dietary care for patient with hepatic disorders	**√**	**√**	**√**	**√**					**√**		**√**				**√**	**√**		
6	Dietary care for patient	**√**	**√**		**√**	**√**		**√**								**√**	**√**		

	with renal disorders																	
7	Nutritional requirement for pediatrics	**√**	**√**			**√**								**√**	**√**		**√**	**√**
8	Dietary care for patients with obesity		**√**		**√**	**√**		**√**	**√**			**√**	**√**		**√**	**√**	**√**	**√**
9	Gut microbiota and human health	**√**			**√**				**√**			**√**					**√**	
10	Self-learning (cardiac diseases) and nutritional management of diabetes	**√**	**√**		**√**					**√**				**√**		**√**		

	mellitus																	
11	Dietary care for cancer patients	**√**	**√**					**√**				**√**				**√**		
12	Dietary care for pregnant and lactation	**√**	**√**			**√**				**√**			**√**			**√**	**√**	
13	Parentral nutrition	**√**	**√**		**√**			**√**		**√**		**√**				**√**	**√**	
14	Entral nutrition, Nutrigenomics	**√**		**√**		**√**			**√**	**√**			**√**		**√**			
Practical Topics																		
1	Lab instructions and safety		**√**	**√**	**√**			**√**	**√**	**√**			**√**		**√**	**√**	**√**		
2	Assessment of Nutrition	**√**	**√**		**√**	**√**		**√**		**√**			**√**		**√**		**√**		**√**

3	Diet and digestive system	√		√	√			√		√		√			√		√		√
4	Diet and renal Disease	√			√			√		√			√			√	√	√	
5	Diet and Osteopo rosis	√		√		√		√		√		√			√			√	√
6	Nutrition in celiac disease	√	√	√		√		√	√			√	√		√	√	√		√
7	Nutrition al require ments during life stages (geriatric s,pediatr ics)	√		√	√	√		√	√			√			√		√		√
9	Diet and sport care	√	√		√	√			√	√		√	√			√	√	√	√
10	Entral nutrition				√	√		√		√		√			√		√		√
11	Parental	√	√		√	√			√			√			√		√		√

	Nutrition																	
12	Nutrition management in different types of anemia	**√**		**√**		**√**			**√**	**√**			**√**			**√**		**√**	
13	Nutrition management in Pregnancy	**√**	**√**		**√**				**√**	**√**			**√**			**√**	**√**		

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, 6thedition,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. Laila A. Eissa
Head of Department	**Dr. Noha Mansour Hassan**

Date: 16/9/2023

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بكالوريوس الصيدلة الإكلينيكية (اللائحة الموحدة والمعدلة)

Course Specification

Academic year: 2023-2024

Course name: **Drug Interaction**	**اسم المقرر:** تفاعلات دوائية
Academic Level: Level Five	**المستوى الأكاديمي:** المستوى الخامس
Scientific department: Pharmacology and toxicology dep.	**القسم العلمي:** الأدوية والسموم
Head of Department: Prof. Manar Ahmed Nader	**رئيس القسم:** ا.د/ منار أحمد نادر
Course Coordinator: Prof. Nashwa Abu-Elsaad	**منسق المقرر:** ا.د/ نشوى أبو السعد

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmacology and toxicology dep.
Department supervising the course	Pharmacology and toxicology dep.
Program on which the course is given	**B. Pharm. (Clinical Pharmacy) (Modified and Unified Clinical Pharmacy Bylaw)**
Academic Level	Level 5, first semester, 2023-2024
Date of course specification approval	September 2023

A. Basic Information: Course data:

Course Title	Drug Interaction
Course Code	PO 906
Prerequisite	Pharmacology III
Teaching credit Hours: Lecture	2
: Practical	-
Total Credit Hours	2

B. Professional Information:

1. Course Aims:

This course enables the students to:

Provide knowledge about classification of drug interaction
Provide knowledge about mechanisms underlying drug interaction
Provide knowledge about food and herbal drug interaction
Provide knowledge about drug-disease interaction
Inform the students about the basics of pharmacogenetics drug interaction
Provide coverage on the high-risk groups for drug interaction
Provide essential knowledge about special classes of drug-drug interaction

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
1.1.4	1.1.4.1	Recall and memorize the classification, pharmacokinetics and contraindications of drugs adverse drug reactions
	1.1.4.2	Define impact of food, disease state, herbs and pharmacogenetics on drug effect
	1.1.4.3	Recognize different classes of drug-drug interaction including cardiovascular, antimicrobial, analgesics, CNS, antidiabetic drugs

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Correlate food, herb and beverages intake with possible adverse drug interactions
	2.4.3.2	Assess possible drug-drug interactions and drug-related problems

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.1	3.2.1.1	Apply appropriate management to decrease risks of drug-drug interaction and different other drug adverse reaction
	3.2.1.2	Evaluate and revise the prescribed therapeutic approach

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Retrieve patient information from different sources to improve professional competencies
4.3.1	4.3.1.1	Follow up the treatment precautions to solve problems and achieve the desired treatment outcomes

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Introduction to drug interaction	2
2	Food drug interaction	2
3	Herbal drug interaction	2
4	Pharmacogenetics and drug interaction	2
5	Cardiovascular drug interaction	2
6	Centrally acting drugs interaction	2
7	Antibiotics drug interaction	2
8	Antifungal drug interaction	2
9	Antihistaminic drugs interaction	2
10	Analgesic drugs interaction	2
11	Antidiabetic drugs interaction	2
12	Contraceptives interaction	2
13	Self-learning (Drug interaction in pediatrics)	2
14	Revision/quiz	2
15	**Final written and oral exam**	

4- Teaching and Learning Methods:

4.1	**Advanced Lectures**
4.2	**Hybrid learning**
4.3	**Self-learning**
4.4	**Problem based learning**
4.5	**Computer aided learning**
4.6	**Case studies**

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	**1.1.4.1, 1.1.4.2, 1.1.4.2, 2.4.3.1, 2.4.3.2, 3.2.1.1, 3.2.1.2**
2-Oral	**1.1.4.1, 1.1.4.2, 1.1.4.2, 2.4.3.1, 2.4.3.2, 3.2.1.1, 3.2.1.2, 4.1.2.1, 4.1.2.2**
3- Periodical (Mid-term exam) / Course work	**1.1.4.1, 1.1.4.2, 1.1.4.2, 2.4.3.1, 2.4.3.2, 4.1.2.1, 4.1.2.2**

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	Periodical (Mid-term) exam / Course work	20%
2	Final-term examination	65%
3	Oral examination	15%
	Total	100%

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Data show- Computers, Internet. white board

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

Week No.	Course contents / K. elements	Domain 1				Domain 2			Domain 3			Domain 4	
		1.1.4.1	1.1.4.2	1.1.4.3		2.4.3.1	2.4.3.2		3.2.1.1	3.2.1.2		4.1.2.1	4.3.1.1
1	Introduction to drug interaction	✓	✓			✓			✓	✓			
2	Food drug interaction	✓		✓			✓		✓	✓			
3	Herbal drug interaction	✓		✓			✓		✓	✓			
4	Pharmacogenetics and drug interaction	✓		✓			✓		✓	✓			
5	Cardiovascular drug interaction	✓		✓			✓		✓	✓		✓	✓
6	Centrally acting drugs interaction	✓		✓			✓		✓	✓		✓	✓
7	Antibiotics drug interaction	✓		✓			✓		✓	✓		✓	✓
8	Antifungal drug interaction	✓		✓			✓		✓	✓		✓	✓
9	Antihistaminic drugs interaction	✓		✓			✓		✓	✓		✓	✓
10	Analgesic drugs interaction	✓		✓			✓		✓	✓		✓	✓
11	Antidiabetic drugs interaction	✓	✓			✓			✓	✓		✓	✓
12	Contraceptives interaction	✓	✓			✓			✓	✓		✓	✓

13	Self-learning (Drug interaction in pediatrics)	✓	✓			✓			✓	✓		✓	✓
14	Revision/quiz	✓	✓			✓			✓	✓		✓	✓

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.	Claire L Preston (2019) Stockley's Drug Interactions 12th edition Chicago: Pharmaceutical Press	Book
4.	Lakshman Delgoda Karalliedde, Simon Clarke, Ursula Gotel nee Collignon, Janaka Karalliedde (2016) Adverse drug interaction A Handbook for Prescribers, 2nd edition. Taylor and Francis Group.	Book
6.	http://www.sciencedirect.com http://www.googlescholar.com http://www.pubmed.com https://www.ekb.eg ACCP guidelines (https://www.accp.com/)	websites

Course Coordinator	**Prof. Nashwa Abu-Elsaad**
Head of Department	**Prof. Manar Ahmed Nader**

Date: 18 / 9 / 2023

Course specification
2023/2024
Clinical Pharmacy Program
Faculty of Pharmacy
Mansoura University

Level five

Course Specification: Therapeutics II

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmacology and toxicology
Course title: Therapeutics II
Course code: **PO 007**

Program on which the course is given	B. Pharm (Clinical Pharmacy-Modified bylaw)
Academic Level	Level 5, Second semester, 2023/2024
Date of course specification approval	18/9/2023

1. Basic Information: Course data:

Course title:	**Therapeutics II**	**Code: PO 007**
Specialization:	**Medical sciences**	
Prerequisite:	**Pharmacology-2**	
Teaching Hours:	**Lecture: 2**	**Practical: 1**
Number of units: (credit hours)	**3**	

2. Course Aims:

2.1. Provide knowledge about pharmacotherapy of certain cardiovascular diseases

2.2. Provide knowledge about bone disorders pharmacotherapy

2.3. Provide knowledge about Kidney disorders management

2.4. Inform the students about the pathophysiology of the diseases in brief

2.5. Provide coverage on the available drug algorithm that should be followed during treatment

2.6. Give an idea about nonpharmacological treatment of different diseases

2.7. Provide essential knowledge about treatment of special populations

2.8. Give the student an idea about the available dosage forms and dose regimen

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
1.1.4	1.1.4.1	Articulate knowledge from fundamental sciences to drug appropriateness, effectiveness, and safety in individuals and populations.
1.1.5	1.1.5.1	Understand pharmacotherapeutic guidelines for management of hepatic viral infections, central disorders, endocrine disorders and women's health

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Design pharmacologic care plans for management of disorders with reference to their particulate health problems and special considerations
	2.4.3.2	Make decisions for recognized drug-related and pharmaceutical care problems
	2.4.3.3	Recommend pharmacological and non-pharmacological systemic approaches for management of disorders affecting different body organs
	2.4.3.4	Select suitable care plans for patients with special consideration to their particular health issues

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.1	3.2.1.1	Integrate the proper therapeutic uses of different drugs
	3.2.1.2	Consult healthcare team about the proposed care plan appropriate for the patient

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Share decisions with pharmacy and non-pharmacy team members with effective time management skills
	4.1.2.2	Follow up the treatment plan to solve problems and achieve the desired treatment outcomes
4.3.1	4.3.1.1	Retrieve patient information from different sources to improve professional competencies

4. Contents:

Week No	Topics	Lecture credit hours
1	Therapeutic management of Anxiety	2
2	Therapeutic management of schizophrenia	2
3	Tourtette syndrome	2
4	Therapy of Enuresis	2
5	Pharmacotherapy for bipolar disorders	2
6	Therapeutic management of autism	2
7	Attention defects Hyperactive children therapy	2
8	Pharmacotherapy for sleep disorders (part 1)	2
9	Pharmacotherapy for sleep disorders (part 2)	2
10	Pharmacotherapy for Multiple sclerosis	2
11	Obesity	2
12	Eating disorders	2
13	Headache	2
14	Therapeutic management of pain (self learning)	2
15	Revision/Quiz	2
16	**Final theoretical exam**	-
Week No	**Practical topics**	**Practical credit hours**
1	Therapeutic management of Anxiety case study	1
2	Therapeutic management of schizophrenia case study	1
3	Tourtette syndrome case study	1
4	Therapy of Enuresis case study	1
5	Pharmacotherapy for bipolar disorders case study	1
6	Therapeutic management of autism case study	1
7	Attention defects Hyperactive children therapy case study	1
8	**Periodical (Mid-term exam)**	--
9	Pharmacotherapy for sleep disorders case study	1
10	Pharmacotherapy for Multiple sclerosis case study	1
11	Obesity case study	1
12	Eating disorders case study	1
13	Headache case study	1
14	Pain case study	1

15	**Practical exam**	1

5. Teaching and learning Methods:

	Teaching and Learning Method
5.1	**Computer aided learning:** **a. Online learning through My mans "Mansoura university "as recorded – video lectures** **b. Interactive discussion through My Mans** **c. Lectures using Data show, PowerPoint presentations**
5.2	**Self-learning**
5.3	**Practical session through tutorials**
5.4	**Case study**

6. Student Assessment

a. Assessment methods

Written exam	1.1.4.1, 1.1.5.1, 2.4.3.1, 2.4.3.2, 2.4.3.3, 2.4.3.4
Practical exam	3.2.1.1, 3.2.1.2
Oral	1.1.4.1, 1.1.5.1, 2.4.3.1, 2.4.3.2, 2.4.3.3, 2.4.3.4, 3.2.1.1, 3.2.1.2, 4.1.2.1, 4.1.2.2, 4.3.1.1
Periodical (Mid-term exam)	1.1.4.1, 1.1.5.1, 2.4.3.1, 2.4.3.2, 2.4.3.3, 2.4.3.4

b. Assessment schedule:

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

c. Weighting 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%

7. List of References

8.	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
2	Michael Katz, Kathryn R. Matthias, Marie Chisholm-Burns (2019)Pharmacotherapy Principle and Practice 5th edition McGraw Hill Professional	**Book**

3	Pharmacotherapy Handbook; Terry L. Schwinghammer; Joseph T. DiPiro; Vicki Ellingrod; Cecily V. DiPiro. McGraw Hill / Medical; 11th ed. (2021).	**Book**
4	Schwinghammer's Pharmacotherapy Casebook: A Patient-Focused Approach; Terry L. Schwinghammer; Julia M. Koehler; Jill S. Borchert; Douglas Slain; Sharon K. Park. McGraw Hill / Medical; 12th ed. (2023).	**Book**
5	http://www.sciencedirect.com http://www.googlescholar.com http://www.pubmed.com https://www.ekb.eg ACCP guidelines (https://www.accp.com/)	**websites**

8. Matrix of course content versus course k. elements:

Week No.	Course contents / K. elements	Domain 1		Domain 2				Domain 3		Domain 4		
		1.1.4.1	1.1.5.1	2.4.3.1	2.4.3.2	2.4.3.3	2.4.3.4	3.2.1.1	3.2.1.2	4.1.2.1	4.1.2.2	4.3.1.1
	A)Theoretical part											
1	Therapeutic management of Anxiety	✓	✓	✓	✓	✓	✓	✓				
2	Therapeutic management of schizophrenia	✓	✓	✓	✓	✓	✓	✓	✓			
3	Tourtette syndrom	✓	✓	✓	✓	✓	✓	✓	✓			
4	Therapy of Enuresis		✓		✓	✓	✓		✓			
5	Pharmacotherapy for bipolar disorders	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	Therapeutic management of autism	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	Attention defects Hyperactive children therapy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	Pharmacotherapy for sleep	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	disorders (part 1)														
9	Pharmacotherapy for sleep disorders (part 2)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	
10	Pharmacotherapy for Multiple sclerosis	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	
11	Obesity	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	
12	Eating disorders	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
13	Headache				✓	✓	✓	✓		✓	✓		✓	✓	✓
14	Therapeutic management of pain (self learning)	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	
15	Quiz	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓

Week No.	Course contents / K. elements	Domain 1			Domain 2					Domain 3			Domain 4		
		1.1.4.1	1.1.5.1		2.4.3.1	2.4.3.2	2.4.3.3	2.4.3.4		3.2.1.1	3.2.1.2		4.1.2.1	4.1.2.2	4.3.1.1
	B)Practical part														
1	Therapeutic management of Anxiety case study	✓	✓		✓	✓	✓	✓		✓					
2	Therapeutic management of schizophrenia case study	✓	✓		✓	✓	✓	✓		✓	✓				
3	Tourtette syndrome case study	✓	✓		✓	✓	✓	✓		✓	✓				

4	Therapy of Enuresis case study		✓			✓	✓	✓			✓				
5	Pharmacotherapy for bipolar disorders case study	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
6	Therapeutic management of autism case study	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
7	Attention defects Hyperactive children therapy case study	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
9	Pharmacotherapy for sleep disorders case study	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
10	Pharmacotherapy for Multiple sclerosis case study	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
11	Obesity case study	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
12	Eating disorders case study	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
13	Headache case study				✓	✓	✓	✓		✓	✓		✓	✓	✓
14	Pain case study	✓	✓	✓	✓		✓	✓		✓	✓			✓	

Course Coordinator	**Prof. Dr. Rania ramadan**
Head of Department	**Prof. Dr. Manar Ahmed Nader** 

Date: 18/9/2023

Course specification

2023-2024

Clinical Pharmacy Program

Faculty of Pharmacy

Mansoura University

بكالوريوس الصيدلة الإكلينيكية

(Unified & Modified by law– لائحة موحدة و معدلة**)**

Course Specification Academic year: 2023-2024

Course name: Treatment of Dermatological and Reproductive Diseases	اسم المقرر: علاج الأمراض الجلدية والتناسلية
Academic Level: Fifth Level	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy & Pharmacy Practice Department	القسم العلمي:الصيدلة الإكلينيكية والممارسة الصيدلية
Head of Department: **Dr. Mohamed Elhusseiny Shams**	رئيس القسم: أ.د/ محمد الحسيني شمس
Course Coordinator: **Dr. Heba Ahmed Abdelazeem**	منسق المقرر: د/ هبة عبد العظيم

Course specification

2023-2024

Clinical Pharmacy Program

Faculty of Pharmacy

Mansoura University

University	Mansoura
Faculty	Pharmacy
Department offering the course	Clinical Pharmacy & Pharmacy Practice Department
Department supervising the course	Clinical Pharmacy & Pharmacy Practice Department
Program on which the course is given	B. Pharm. (Credit hour) (Clinical Pharmacy)
Academic Level	Fifth level, second semester, 2022-2023
Date of course specification approval	7/9/2023

A- Basic Information: Course data:

Course Title	Treatment of Dermatological and Reproductive Diseases
Course Code	**PP 008**
Prerequisite	**Pathology & pharmacology-II**
Credit Hours: Lecture	**1**
Tutorial	**1**
Total Credit Hours	**2 (Credit H)**

2 - Course Aims:

This course aims at identifying skin structure and function, different types of skin infections and sexually transmitted disease. In addition to musculoskeletal disorders such as osteoarthritis, osteomyalgia, gout and hyperuricemia.

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	Mention signs and symptoms, pharmacological and non-pharmacological management of different dermatological, sexually transmitted, and musculoskeletal diseases.
1.1.4	1.1.4.1	Recognize the different pharmacological categories of drugs used in different skin conditions, musculoskeletal diseases, and sexually transmitted diseases, and proper selection of suitable drug according to patient's specific factors.
1.1.7	1.1.7.1	Outline updated clinical guidelines, that is important ir

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.1.1	2.1.1.1	Determine suitable therapeutic approach and monitoring plan to achieve prespecified targets in musculoskeletal, skin conditions.
2.4.3	2.4.3.1	Educate healthcare professional about dermatological ,and musculoskeletal drugs' drug interactions, contraindications, and adverse effects. .

DOMAIN 3: PHARMACEUTICAL CARE

Program K. element no.	Course K. element no.	Course K. element
3.2.1	3.2.1.1	Apply the evidence-based guidelines in dose adjustment in in special population,
3.2.5	3.2.5.1	Educate and counsel patients, other health care professionals, and communities about safe and proper use of medicines including OTC preparations and medical devices.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	**4.1.1.1**	Participate in case presentation to health care professionals and colleagues, to improve presentation and communication skills.
4.3.2	**4.3.2.1**	Search pertaining literature to update knowledge in this field to improve personal practice.

4- Course Contents

Week No.	Lecture Topics	Lecture Credit Hours
1	Introduction to the common dermatologic problems	1
2	**Acne vulgaris** ● Etiology and pathophysiology ● Clinical presentation	1
3	Treatment of acne	1
4	**Psoriasis** ● Etiology and pathophysiology ● Clinical presentation ● Treatment.	1
5	**Atopic dermatitis** ● Etiology and pathophysiology ● Clinical presentation ● Treatment.	1
6	**Dermatologic drug reactions and common skin conditions** ● Structure and function of the skin. ● Patient assessment. ● Drug induced cutaneous reactions.	1

7	**Skin and soft tissue infection** ● Etiology and pathophysiology. ● Folliculitis, furuncles, and carbuncles ● Treatment.	1
8	**Superficial fungal infection** ● Oropharyngeal and esophageal candidiasis	1
9	**Sexually transmitted disease** ● Gonorrhea	1
10	**Sexually transmitted disease** ● Syphilis	1

11-12	**Osteoarthritis and osteomalacia** ● Etiology and pathophysiology ● Clinical presentation ● Non-pharmacological management. ● Pharmacological management.	2
13-14	**Gout and hyperuricemia** ● Etiology **(self-learning)** ● pathophysiology ● Clinical presentation ● Non-pharmacological management ● Pharmacological management	2
15	**Revision and quiz**	2
16	**Starting Written and oral final exam**	-
Week No.	**Tutorial topics**	**Credit hours**
1	Case presentation: Acne vulgaris	1
2	Case presentation: Psoriasis	1
3	Case presentation: Atopic dermatitis	1
4	Case presentation: Dermatologic drug reactions and common skin conditions	1
5	Case presentation: Skin and soft tissue infection	1
6	Case presentation: Superficial fungal infection	1
7	Case presentation: Sexually transmitted disease"syphilis"	1
8	**Periodical (Mid-Term) Exam**	-
9	**Sexually transmitted disease"gonorrhea"**	
10-11	Case presentation: Osteoarthritis and osteomalacia	2
12-13	**Group project:** Gout and hyperuricemia (self-learning)	
14	Case presentation: tinea capisis	2
13	**Sheet / and Tutorial exam**	-

5- Teaching and Learning Methods:

5.1	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 ● Inter active discussion through My Mans	Week 1-15
5.2	Self-learning	Week 13,14
5.3	Practical session using tutorials	Week 1-7, 9-14
5.4	Class Activity: Group discussion offline and online.	Week 1-15
5.5	Problem – based learning and brainstorming	Week 1-15
5.6	Research assignments	Week 1-15
5.7	Role play	Week 13&14

6- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1/ 1.1.4.1/ 1.1.7.1/ 3.2.1.1/ 3.2.5.1/ 4.3.2.1
2-Tutorial exam	2.1.1.1/ 2.4.3.1/ 3.2.1.1/ 3.2.5.1/ 4.1.1.1/ 4.3.2.1
3-Oral	1.1.1.1/ 1.1.4.1/ 1.1.7.1/3.2.1.1/ 3.2.5.1/ 4.3.2.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1/ 1.1.4.1/ 1.1.7.1/3.2.1.1/ 3.2.5.1

b- Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	8th week
Assessment 2	Practical examination using tutorial	15th week
Assessment 3	Written exam	Starting 16th week
Assessment 4	Oral exam	Starting 16th week

c- Weighing of assessments

1	Periodical (Mid-term) exam	10%
2	Practical examination using tutorial	25%
3	Final-term examination	50%
4	Oral examination	15%
Total		100%

7- Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, Platform
Laboratory facilities	Data show – computers, internet, round tables
Hospital	Dermatology round
Library	Reference books

8- Matrix of knowledge and skills of the course:

Study Week No.	Course contents	Outcomes Domains / Key elements									
		Domain 1			Domain 2		Domain 3		Domain 4		
		1.1.1.1	1.1.4.1	1.1.7.1	2.1.1.1	2.4.3.1	3.2.1.1	3.2.5.1	4.1.1.1	4.3.2.1	
1	Acne vulgaris	√	√	√			√	√			
2	Psoriasis	√	√	√				√			
3	Atopic dermatitis	√	√	√			√	√			
4	Dermatologic drug reactions and common skin conditions	√	√	√			√	√			
5	Skin and soft tissue infection	√	√	√			√	√			
6	Superficial fungal infection	√	√	√			√	√			
7	**Periodical (Mid-Term) Exam**										
8	Sexually transmitted disease	√	√	√			√	√			
9, 10	Osteoarthritis and osteomalacia	√	√	√				√			
11, 12	Gout and hyperuricemia **(self-learning)**	√	√	√			√	√			√
13	Revision	√	√	√			√	√			√
1-7,9-14	**Tutorial Topics**										
1	Case presentation: Acne vulgaris				√	√	√	√	√	√	

Study Week No.	Course contents	Outcomes Domains / Key elements											
		Domain 1				Domain 2			Domain 3			Domain 4	
		1.1.1.1	1.1.4.1	1.1.7.1		2.1.1.1	2.4.3.1		3.2.1.1	3.2.5.1		4.1.1.1	4.3.2.1
2	Case presentation: Psoriasis					√	√		√	√		√	√
3	Case presentation: Atopic dermatitis					√	√		√	√		√	√
4	Case presentation: Dermatologic drug reactions and common skin conditions					√	√		√	√		√	√
5	Case presentation: Skin and soft tissue infection					√	√		√	√		√	√
6	Case presentation: Superficial fungal infection					√	√		√	√		√	√
7	Case presentation: Sexually transmitted disease”syphilis”					√	√		√	√		√	√
8	**Periodical (Mid-Term) Exam**					√	√		√	√		√	√
9	**Sexually transmitted disease”gonorrhea”**					√	√		√	√		√	√
10-11	Case presentation: Osteoarthritis and osteomalacia					√	√		√	√		√	√
12-13	**Group project:** Gout and hyperuricemia (self-learning)					√	√		√	√		√	√
14	Case presentation: tinea capisis					√	√		√	√		√	√

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.	Dipiro's Pharmacotherapy: A Pathophysiologic Approach. J. DiPiro, R.L. Talbert, G. Yee, G. Matzke, B. Wells, and L.M. Posey; McGraw- Hill, 11th edition, 2020	Essential Book
4	Egyptian knowledge bank website https://www.ekb.eg/. http://www.sciencedirect.com / https://scholar.google.com/ http://www.pubmed.com	Websites

Course Coordinator	**Dr. Heba Ahmed Abdelazeem**
Head of Department	**Pof.Dr. Mohamed Elhusseiny Shams** **Approval date 7/9/2023**

بكالوريوس الصيدلة الإكلينيكية (اللائحة الموحدة والمعدلة)

Course Specification

Academic year: 2023-

2024

Course name: Treatment of Pediatrics diseases	*اسم المقرر: علاج أمراض الأطفال*
Academic Level: Level 5	*المستوى الأكاديمي: الخامس*
Scientific department: Clinical Pharmacy and Pharmacy Practice	*القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلية*
Head of Department:	*رئيس القسم:*
Prof.Dr/ Mohamed Elhusseiny Shams	*أ.د/ محمد الحسيني شمس*

University	Mansoura
Faculty	Pharmacy
Department offering the course	Clinical Pharmacy and Pharmacy Practice
Department supervising the course	
Program on which the course is given	**B. Pharm. (U & M by law) (Clinical Pharmacy)**
Academic Level	Fifth level, second semester, 2023-2024
Date of course specification approval	7/9/2023

Mansoura University

Faculty of Pharmacy

Clinical Pharmacy

Program

Course specification

2022/2023

Credit hr Program

1- Basic Information: Course data:

Course Title	**Treatment of Pediatrics diseases**
Course Code	**PP 009**
Prerequisite	**Pathology & Pharmacology II**
Credit Hours: Lecture	**2**
Tutorial	**1**
Total Credit Hours	**3 (Credit H)**

2- Course Aims:

This course will cover the following topics:

- Definition of infant, neonate, child and adolescent
- Introduction to the essential nutritional requirements for each age category
- Congenital infantile disorders affecting the different body systems (cardiovascular, respiratory, endocrine and renal disorders)
- Conditions considered as pediatric emergencies and how to manage them

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	Describe the risk factors, clinical presentation, relevant laboratory investigation in relation to updated treatment guidelines of different pediatric diseases.
1.1.4	1.1.4.1	Identify the different pharmacological and nonpharmacological options in management of various pediatric diseases.
1.1.6	1.1.6.1	Recognize updated scientific resources to make evidence-based clinical decisions.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.1.1	2.1.1.1	Construct a pharmaceutical patient care plan for acute and chronic pediatric diseases.

DOMAIN 3: Pharmaceutical care

Program K. element no.	Course K. element no.	Course K. element
3.1.1	3.1.1.1	Interpret monitoring parameters of patient's response and therapeutic agents to manage drug therapy problems effectively.
3.2.4	3.2.4.1	Educate patients about goals of therapy, monitoring of response and the possible side effects of the care plan.
3.2.5	3.2.5.1	Counsel and educate patients to rationalize management of pediatric diseases. Collaborate with healthcare team to optimize individualized patient care plan and manage drug therapy related problems.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	4.1.1.1	Contribute with health care team in formulary management activities related to drugs for pediatric patients
4.3.2	4.3.2.1	Practice self-learning to improve professional skills

4- Course Contents

A) Theoretical part

Week No.	Lecture Topics	Lecture Credit Hours
1	**Introduction to the course**	2

2	**Sepsis:** Signs and symptoms, Early versus late onset neonatal sepsis, Cerebrospinal fluid findings	2
3	Treatment Regimens for Sepsis	2

4	**Meningitis:** Meningitis Sequelae, Empiric Antibiotic of Meningitis, Chemoprophylaxis of Bacterial Meningitis	2
5	**Respiratory syncytial virus infection:** Clinical Presentation, Risk Factors for Severe Disease, Prophylaxis, Treatment	2
6	**Otitis media:** Clinical Presentation, Risk factors, Common Pathogens, Signs & Symptoms, Treatment, Complications, Prevention Strategies	2
7	**Immunization 1:** Recommended Schedule, Combination vaccines, Interchangeability of products, Barriers to Routine Immunization	2
8-9	**Immunization 2:** Considerations in Special Populations	4
109	**Pediatric seizure disorders:** Incidence of Pediatric Seizures, Febrile Seizures, Treatment Options Based on Seizure Type,	2
11	**Pediatric seizure disorders 2:** Comparison of Available Antiseizure Drugs	2
12-13	**Attention-deficit/hyperactivity disorder:** Clinical Presentation, Classification, Treatment Options	4
14	**Toxicology:** Poison Control Center Overview; Pediatric Poisonings; Management of Select Agents; Select Antidotes **(self-learning).**	2
15	**Revision and quiz**	2
16	**Starting the final written and oral exam**	-

B) Tutorial part:

Week No.	Tutorial topics	Credit hours
1	introduction	1
2	sepsis	
3	Meningitis	1
4	Respiratory syncytial virus infection	1
5	Otitis media	1
6	Immunization 1	1
7	Immunization 2	1
8	**Periodical (Mid-Term Exam)**	1
9	Pediatric seizure disorders 1	1
10	Pediatric seizure disorders 2	1
11-12	Attention-deficit/hyperactivity disorder	2
13-14	**Pharmacokinetic and pharmacodynamic changes in pediatric**	2
15	**Sheet / and Tutorial exam**	-

5-Teaching and Learning Methods:

Teaching and learning method		Week no.	K. element to be addressed
5.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning	Week 1-15	1.1.1.1, 1.1.4.1, 1.1.6.1

	• Online learning through my mans "Mansoura university "as recorded – video lectures • Inter active discussion through My Mans		
5.2	Self-learning	Week 13-14	4.3.2.1
5.3	Practical session using tutorials	Week 1-7 Week 9-14	2.1.1.1, 3.1.1.1, 3.2.4.1, 3.2.5.1
5.4	Class Activity: Group discussion offline and online.	Week 1-7 Week 9-14	4.1.1.1, 4.3.2.1
5.5	Problem – based learning and brainstorming	Week 1-7 Week 7-14	4.1.1.1, 4.3.2.1
5.7	Role play	Week 12-13	4.1.1.1, 4.3.2.1

6- Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.1.1, 1.1.4.1, 1.1.6.1, 4.3.2.1
2-Tutorial exam	1.1.6.1, 2.1.1.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
3-Oral	1.1.1.1, 1.1.4.1, 1.1.6.1, 4.3.2.1
4-Periodical (Mid-term exam/ Course work)	1.1.1.1, 1.1.4.1, 1.1.6.1

a- Assessment schedule

Assessment 1	Periodical (Mid-term exam)	Week 8
Assessment 2	Practical examination using tutorial	15th week
Assessment 3	Written exam	starting16th week
Assessment 4	Oral exam	Starting 16th week

b- Weighing of assessments

1	Periodical (Mid-term) exam	10%
2	Practical examination using tutorial	25%
3	Final-term examination	50%
4	Oral examination	15%
Total		100%

7-Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, Platform
Library	Books and mobile applications
Hospital	Pediatrics rounds

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.	A Pathophysiologic Approach, Eleventh Edition By: Joseph T. DiPiro, Gary C. Yee, L. Michael Posey, Stuart T. Haines, Thomas D. Nolin Published: June 2020 ISBN: 978126011681623.	Essential Book
4.	Nelson Textbook of Pediatrics. Twenty first Edition. Philadelphia, PA: Elsevier, 2020. By: Robert M. Kliegman, MD and Joseph St. Geme, MD Published: April 2019 ISBN: 9780323529501	Essential Book
5.	http://www.sciencedirect.com / http://www.scholar.google.com / http://www.pubme.com https://www.ekb.eg	Websites

9.1- Matrix 1. of knowledge and skills of the course

Study Week No.	Course contents	Outcomes Domains / key elements								
		Domain 1			Domain 2	Domain3			Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1	2.1.1.1	3.1.1.1	3.2.4.1	3.2.5.1	4.1.1.1	4.3.2.1
1	Introduction	√	√	√						
2	**Sepsis:** Signs and symptoms, Early versus late onset neonatal sepsis, Cerebrospinal fluid findings	√	√	√						
3	Treatment Regimens for Sepsis	√	√	√						
4	**Meningitis:** Meningitis Sequelae, Empiric Antibiotic of Meningitis, Chemoprophylaxis of Bacterial Meningitis	√	√	√						
5	**Respiratory syncytial virus infection:** Clinical Presentation, Risk Factors for Severe Disease, Prophylaxis, Treatment	√	√	√						

6	**Otitis media:** Clinical Presentation, Risk factors, Common Pathogens, Signs & Symptoms, Treatment, Complications, Prevention Strategies	√	√	√								
7	**Immunization 1:** Recommended Schedule, Combination vaccines, Interchangeability of products, Barriers to Routine Immunization	√	√	√								
8-9	**Immunization 2:** Considerations in Special Populations	√	√	√								
10	**Pediatric seizure disorders:** Incidence of Pediatric Seizures, Febrile Seizures, Treatment Options Based on Seizure Type,	√	√	√								

11	**Pediatric seizure disorders 2:** Comparison of Available Antiseizure Drugs	√	√	√									
12-13	**Attention-deficit/hyperactivity disorder:** Clinical Presentation, Classification, Treatment Options	√	√	√									
14	**Toxicology:** Poison Control Center Overview; Pediatric Poisonings; Management of Select Agents; Select Antidotes **(self-learning).**	√	√									√	
15	**Revision and quiz**	√	√	√									

B) Tutorial part:

Study Week No.	Course contents	Domain 1			Domain 2	Domain3			Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1	2.1.1.1	3.1.1.1	3.2.4.1	3.2.5.1	4.1.1.1	4.3.2.1
1	introduction			√	√	√	√	√	√	√
2	sepsis			√	√	√	√	√	√	√
3	Meningitis			√	√	√	√	√	√	√
4	Respiratory syncytial virus infection			√	√	√	√	√	√	√
5	Otitis media			√	√	√	√	√	√	√
6	Immunization 1			√	√	√	√	√	√	√
7	Immunization 2			√	√	√	√	√	√	√

8	**Periodical (Mid-Term Exam)**											
9	Pediatric seizure disorders 1			√	√		√	√	√		√	√
10	Pediatric seizure disorders 2			√	√		√	√	√		√	√
11-12	Attention-deficit/hyper activity disorder			√	√		√	√	√		√	√
13-14	**Pharmaco kinetic and pharmaco dynamic changes in pediatric**			√	√		√	√	√		√	√

Course Coordinator	**Dr. Hadeel abuleneen**
Head of Department	**Prof.Dr. Mohamed Elhusseiny Shams** **Approval date: 7/9/2023**

بكالوريوس الصيدلة الإكلينيكية (**Unified and modified bylaw-**لائحة موحدة ومعدلة)

Course Specification Academic year: 2023/2024

Course name: managment of cardiovascular disease (PP 010)	اسم المقرر: العلاج الدوائي لأمراض القلب
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy & Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية و الممارسة الصيدلية
Head of Department: **Prof. Dr/ Mohamed El-Husseiny Shams**	**:**رئيس القسم أ.د/ محمد الحسيني شمس
Course Coordinator: **Prof. dr. Ghada suddek**	**:**منسق المقرر أ.د/ غادة صديق

University	Mansoura
Faculty	Pharmacy
Department offering the course	1- Pharmacology and toxicology department 2- Cardiology department- faculty of medicine
Department supervising the course	Clinical Pharmacy & Pharmacy Practice Department
Program on which the course is given	B. Pharm. (unidied and modified)
Academic Level	Fifth level, second semester, 2023-2024
Date of course specification approval	7/9/2023

A. Basic Information: Course data:

Course Title	Managment of Cardiovascular Disease
Course Code	**PP 010**
Prerequisite	**Pharmacology-II**
Credit : Lecture	**2**
Practical sessions using tutorial	**1**
Total Credit Hours	**3 (Credit H)**

B. Professional Information:

1. Course Aims:

This course aims at providing students with fundamental knowledge in main diseases affecting the cardiovascular system including: signs and symptoms, pathophysiology, evidence-based management approaches for dyslipidemias, hypertension, coronary artery disease, acute coronary syndromes, heart failure. In addition to providing patient counseling and monitoring for the previous disorders.

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**	Mention signs and symptoms, pharmacological and non-pharmacological management of different cardiovascular diseases.
1.1.4	**1.1.4.1**	Recognize the different pharmacological categories of drugs used in cardiovascular patients, and proper selection of suitable drug according to patient's specific factors.
1.1.7	**1.1.7.1**	Outline updated clinical guidelines, that is important ir

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	**2.4.3.1**	Educate healthcare professional about cardiovascular drugs' major drug interactions, contraindications, and adverse effects.

DOMAIN 3: PHARMACEUTICAL CARE

Program K. element no.	Course K. element no.	Course K. element
3.2.1	**3.2.1.1**	Apply the principles of pharmacokinetics and evidence-based guidelines in dose adjustment in heart failure patients.
3.2.5	**3.2.5.1**	Provide education and counseling to patients, healthcare professionals and communities to achieve safe and cost-effective use of medicines.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	**4.1.1.1**	Participate in case presentation to health care professionals and colleagues, to improve presentation and communication skills.
4.3.2	**4.3.2.1**	Search pertaining literature to update knowledge in this field to improve personal practice.

4- Course Contents

Week nu.	Lecture Topics	Lecture Credit Hours
1	Introduction to the course	2
2	**Hypertension. (Part 1)** ● Essential hypertension ● Secondary hypertension ● Classification of Blood Pressure in Adults ● Non-pharmacological measurement Pharmacotherapy	2
3	**Hypertension. (Part 2)** ● Pharmacotherapy (cont.) ● Compelling conditions	2

4	**Chronic heart failure** ● Pathophysiology ● Clinical presentation	2
5	**Chronic heart failure** • Management of chronic heart failure.	2
6	**Acute decompensated heart failure** ● Pathophysiology ● Clinical presentation ● Management of acute decompensated heart failure.	2
7	**Stable ischemic heart disease.** ● Pathophysiology ● Clinical presentation ● Treatment of stable ischemic heart disease	2
8	**Acute coronary syndrome-1** ● Pathophysiology and Types of acute coronary syndrome	2
9	**Acute coronary syndrome-2** • Treatment of acute coronary syndrome	2
10	**Dyslipidemia-1** ● Types of dyslipidemia ● Non-pharmacological management	2
11	**Dyslipidemia -2** Pharmacological management of dyslipidemia	2
12	**Venous thromboembolism-1** ● Pathophysiology ● **Non-Pharmacological management of VTE**	2

13	**Venous thromboembolism-2** ● **Pharmacological management of VTE**	2
14	**Pharmacotherapy of stroke** **T**ypes of stroke(self learning)	2
15	**Revision and quiz**	2
16	**Start of final written exam**	--

Week No.	**Tutorial topics**	**Credit hours**
1	Introduction to the course	1
2	Case presentation: Hypertension	
3	Case presentation: Hypertension	1
4	Case presentation: Chronic heart failure	1
5	Case presentation: Acute decompensated heart failure	1
6	Case presentation: Stable ischemic heart disease.	1
7	Case presentation: Acute coronary syndrome.	1
8	Mid-term exam	-
9	Case presentation: Dyslipidemia	1
10	Case presentation: Dyslipidemia-2	1
11	Case presentation: deep vein thrombosis	1
12	Case presentation: pulmonary embolism	1
13	Case presentation: stroke	1
14	**Revision and Group project**: Pulmonary arterial hypertension prevention	1
15	**Practical exam**	-

5- Teaching and Learning Methods:

	Teaching and Learning Methods:	Weeks No.	Key elements to be addressed
5.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning ● Online learning through mymans "Mansoura University" as recorded – video lectures ● Inter active discussion through Mymans	Week 1-15	1.1.1.1, 1.1.4.1, 1.1.7.1, 2.4.3.1, 3.2.1.1, 3.2.5.1.
5.2	Self-learning	Week 14	4.1.1.1, 4.3.2.1.
5.3	Practical session using tutorials	Week 1-14	2.4.3.1, 2.4.3.1, 3.2.1.1, 3.2.5.1.
5.4	Class Activity: Group discussion offline and online.	Week 5-15	4.1.1.1, 4.3.2.1,
5.5	Problem – based learning and brainstorming	Week 5-15	4.1.1.1, 4.3.2.1.
5.6	Research assignments	Week 1-15	4.1.1.1, 4.3.2.1.
5.7	Role play	Week 12	4.1.1.1, 4.3.2.1

6- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1/ 1.1.4.1/ 1.1.7.1/ 3.2.1.1/ 3.2.5.1/ 4.3.2.1
2-Practical exam applying OSCE	2.4.3.1/ 2.4.3.1/ 3.2.1.1/ 3.2.5.1 / 4.1.1.1 / 4.3.2.1
3-Oral exam	1.1.1.1/ 1.1.4.1/ 1.1.7.1/3.2.1.1/ 3.2.5.1/ 4.3.2.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1/ 1.1.4.1/ 1.1.7.1/3.2.1.1/ 3.2.5.1

a- Assessment schedule

Assessment 1	Periodical (Mid-term exam)	Week 7-9
Assessment 2	Tutorial examination	14th week
Assessment 3	Written exam	Starting in Week 15
Assessment 4	Oral exam	Starting in week 15

b- Weighing of assessments

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

6- Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, Platform
Laboratory facilities	Data show – computers, internet, round tables
Hospital	Cardiology round
Library	Reference books

5- 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.	Dipiro's Pharmacotherapy: A Pathophysiologic Approach. J. DiPiro, R.L. Talbert, G. Yee, G. Matzke, B. Wells, and L.M. Posey; McGraw-Hill, 11th edition, 2020	Essential Book
4.	Caitlin M G ibson, Cardiology II. ACCP Updates in Therapeutics ® 2018 Pharmacotherapy	Essential Book
5.	http://www.pubmed.com http://www.sciencedirect.com/ https://scholar.google.com/ https://www.ekb.eg	Websites

5- Matrix of knowledge and skills of the course

Study Week No.	Course contents	Outcomes Domains / Key elements								
		Domain 1			Domain 2		Domain 3		Domain 4	
		1.1.1.1	1.1.4.1	1.1.7.1	2.4.3.1	2.4.3.1	3.2.1.1	3.2.5.1	4.1.1.1	4.3.2.1
Theoretical part:										
Introduction to the course		√	√	√			√	√		
Hypertension		√	√	√			√	√		
Hypertension		√	√	√			√	√		
Chronic heart failure		√	√	√			√	√		
Chronic heart failure		√	√	√			√	√		
Acute decompensated heart failure		√	√	√			√	√		
Stable ischemic heart disease.		√	√	√			√	√		
Acute coronary syndrome-1		√	√	√			√	√		
Acute coronary syndrome-2		√	√	√			√	√		
Dyslipidemia-1		√	√	√			√	√		
Dyslipidemia-2		√	√	√			√	√		
Venous thromboembolism-1		√	√	√			√	√		

Venous thromboembolism-2	√	√	√					√	√			√
Pharmacotherapy of stroke	√	√	√					√	√			√
Revision and quiz	√	√	√					√	√			√
Practical topics												
Introduction to the course					√	√		√	√		√	√
Case presentation: Hypertension					√	√		√	√		√	√
Case presentation: Hypertension					√	√		√	√		√	√
Case presentation: Chronic heart failure					√	√		√	√		√	√
Case presentation: Acute decompensated heart failure					√	√		√	√		√	√
Case presentation: Stable ischemic heart disease.					√	√		√	√		√	√
Case presentation: Acute coronary syndrome.					√	√		√	√		√	√
Case presentation: Dyslipidemia					√	√		√	√		√	√
Mid-term exam												
Case presentation: Dyslipidemia					√	√		√	√		√	√
Case presentation: deep vein					√	√		√	√		√	√

thrombosis												
Case presentation: pulmonary embolism					√	√		√	√		√	√
Case presentation: stroke					√	√		√	√		√	√
Revision and Group project: Pulmonary arterial hypertension prevention					√	√		√	√		√	√

Course Coordinator	**Prof. Dr. Ghada suddek**
Head of Department	**Prof. Dr/ Mohamed El-Husseiny Shams**  **Approval date: 7/9/2023**

Course Specification

Academic year: 2023-2024

Course name: Management of Gastrointestinal Diseases	أمراض الجهاز الهضمي اسم المقرر:
Academic Level: Level 5	المستوى الأكاديمي: الخامس
scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلية
Head of Department: Prof. Dr. Mohamed Elhusseiny Shams	رئيس القسم: د/ محمد الحسيني شمس أ
Course Coordinator: To be nominated	منسق المقرر:
University	Mansoura
Faculty	Pharmacy
Department offering the course	Clinical Pharmacy and Pharmacy Practice
Department supervising the course	
Program on which the course is given	**B. Pharm. (U & M by law) (Clinical Pharmacy)**
Academic Level	Fifth level, Second semester, 2023-2024
Date of course specification approval	7/9/2023

1- Basic Information: Course data:

Course Title	**Management of Gastrointestinal Diseases**
Course Code	**PP011**
Prerequisite	**Pathology & pharmacology-II**
Credit Hours: Lecture	**2**
Tutorial	**1**
Total Credit Hours	**3 (Credit H)**

2- Course Aims:

This course enhances the understanding of students about basic knowledge and skills required by clinical pharmacists in the field of management of hepatic disorders, gastrointestinal diseases, inflammatory bowel diseases and irritable bowel syndrome. The students will also acquire knowledge about some gastrointestinal symptoms including nausea, vomiting, constipation, and diarrhea

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	Describe the risk factors, clinical presentation, relevant laboratory investigation in relation to updated treatment guidelines of different gastrointestinal diseases.
1.1.4	1.1.4.1	Identify different pharmacological and nonpharmacological options in management of various disorder affecting gastro-intestinal system.
1.1.6	1.1.6.1	Recognize different scientific resources to make evidence-based informed professional decisions.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.1.1	2.1.1.1	Construct a pharmaceutical care plan for acute and chronic diseases affecting gastro-intestinal system

DOMAIN 3: Pharmaceutical care

Program K. element no.	Course K. element no.	Course K. element
3.1.1	**3.1.1.1**	Interpret monitoring parameters of patient's response and therapeutic agents to manage drug therapy problems effectively.
3.2.4	**3.2.4.1**	Educate patients about goals of therapy, monitoring of response and the possible side effects of the care plan.
3.2.5	**3.2.5.1**	Provide patient counseling to rationalize management of diseases affecting the gastro-intestinal system. Consult healthcare team to optimize individualized patient care plan and manage drug therapy related problems.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	**4.1.1.1**	Share with other other healthcare professionals in formulary management activities related to drugs affecting digestive system
4.3.2	**4.3.2.1**	Practice self-learning to improve professional skills

4- Course Contents

Week No.	Lecture Topics	Lecture Credit Hours
1	**Introduction to the course**	2
2	**Gastroesophageal Reflux Disease (GERD)**	2
3	**Peptic Ulcer Disease (PUD)**	2
4	**Upper GI Bleeding (self-learning: diagnosis of bleeding)**	2
5	**Irritable Bowel Syndrome**	2
6	**Complications of Liver Disease.**	2
7	**Nausea and Vomiting**	2
8	**Pancreatitis**	2
9	**Diarrhea-Constipation**	2
10	**Viral hepatitis: HAV**	2

11	**Viral hepatitis: HBV**	2
12	**Viral hepatitis: HCV**	2
13	**Ulcerative colitis (self learning: risk factors of UC)**	2
14	**Crohn's disease**	2
15	**discussion, and revision**	2
16	**Starting final exam**	-

Week No.	Tutorial topics	Credit hours
1	Case presentation: Gastroesophageal Reflux Disease (GERD)	1
2	Case presentation: Peptic Ulcer Disease	1
3	Case presentation: Upper GI Bleeding	1
4	**Group project:** irritable bowel syndrome	1
5-6	Case presentation: Complications of Liver Disease	2
7	Case presentation: Nausea and Vomiting	1
8	**Periodical (Mid-Term Exam)**	-
9	Pancreatitis	1
10	Diarrhea-Constipation	1
11-12	Case presentation: Viral hepatitis	2
13-14	Case presentation: Inflammatory Bowel Disease (IBD)	2
15	**Sheet / and Tutorial exam**	-

5- Teaching and Learning Methods:

Teaching and learning method		Week no.	K. element to be addressed
5.1	Computer aided learning: **a.** Lectures using Data show, power Point presentations **b.** Distance learning ● Online learning through Mymans "Mansoura university "as recorded – video lectures ● Inter active discussion through My Mans	**Week 1-15**	1.1.1.1, 1.1.4.1, 1.1.6.1
5.2	Self-learning	**Week 4&13**	4.1.1.1, 4.3.2.1
5.3	Practical sessions using tutorials	**Week 1-7** **Week 9-14**	2.1.1.1, 3.1.1.1, 3.2.4.1, 3.2.5.1
5.4	Class Activity: Group discussion offline and online	**Week 1-7** **Week 9-14**	4.1.1.1, 4.3.2.1

5-Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.1.1, 1.1.4.1, 1.1.6.1, 2.1.1.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
2-Tutorial exam	1.1.1.1, 1.1.4.1, 1.1.6.1, 2.1.1.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
3-Oral	1.1.1.1, 1.1.4.1, 1.1.6.1, 2.1.1.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
4- Periodical (Midterm exam) / Course work	1.1.1.1, 1.1.4.1, 1.1.6.1, 2.1.1.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1

b- Assessment schedule

Assessment 1	Periodical (Mid-term exam)	**Week 8**
Assessment 2	Practical examination using tutorial	**15th week**

Assessment 3	Written exam	**Starting 16th week**
Assessment 4	Oral exam	**Starting 16th week**

c- Weighing of assessments

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

5- Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, Platform
Library	Books and mobile applications
Hospital	Management of Gastrointestinal Diseases rounds

8. Matrix of Knowledge and Skills of the Course

Study Week No.	Course contents	Outcomes Domains / Key elements									
		Domain 1				Domain 2		Domain 3				Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1		2.1.1.1		3.1.1.1	3.2.4.1	3.2.5.1		4.1.1.1	4.3.2.1
1	Introduction to the course	√	√	√		√		√	√	√		√	
2	Gastroesophageal Reflux Disease (GERD)	√	√	√		√		√	√	√		√	
3	Peptic Ulcer Disease (PUD)	√	√	√		√		√	√	√		√	
4	Upper GI Bleeding (self-learning: diagnosis of bleeding)	√	√	√		√		√	√	√		√	
5	Irritable Bowel Syndrome	√	√	√		√		√	√	√		√	

8. Matrix of Knowledge and Skills of the Course

Study Week No.	Course contents	Outcomes Domains / Key elements									
		Domain 1				Domain 2		Domain 3				Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1		2.1.1.1		3.1.1.1	3.2.4.1	3.2.5.1		4.1.1.1	4.3.2.1
6	Complications of Liver Disease.	√	√	√		√		√	√	√		√	
7	Nausea and Vomiting	√	√	√		√		√	√	√		√	
8	Pancreatitis	√	√	√		√		√	√	√		√	√
9	Diarrhea-Constipation	√	√	√		√		√	√	√		√	
10	Viral hepatitis: HAV	√	√	√		√		√	√	√		√	

8. Matrix of Knowledge and Skills of the Course

Study Week No.	Course contents	Outcomes Domains / Key elements										
		Domain 1				Domain 2		Domain 3				Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1		2.1.1.1		3.1.1.1	3.2.4.1	3.2.5.1		4.1.1.1	4.3.2.1
11	Viral hepatitis: HBV	√	√	√		√		√	√	√		√	
12	Viral hepatitis: HCV	√	√	√		√		√	√	√		√	
13	Ulcerative colitis (self learning: risk factors of UC)	√	√	√		√		√	√	√		√	
14	Crohn's disease	√	√	√		√		√	√	√		√	
15	discussion, and revision	√	√	√		√		√	√	√		√	

8. Matrix of Knowledge and Skills of the Course

Study Week No.	Course contents	Outcomes Domains / Key elements									
		Domain 1				Domain 2		Domain 3				Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1		2.1.1.1		3.1.1.1	3.2.4.1	3.2.5.1		4.1.1.1	4.3.2.1
1	Case presentation: Gastroesophageal Reflux Disease (GERD)	√	√	√		√		√	√	√		√	√
2	Case presentation: Peptic Ulcer Disease	√	√	√		√		√	√	√		√	√
3	Case presentation: Upper GI	√	√	√		√		√	√	√		√	√

8. Matrix of Knowledge and Skills of the Course

Study Week No.	Course contents	Outcomes Domains / Key elements										
		Domain 1				Domain 2		Domain 3				Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1		2.1.1.1		3.1.1.1	3.2.4.1	3.2.5.1		4.1.1.1	4.3.2.1
	Bleeding												
4	**Group project:** irritable bowel syndrome	√	√	√		√		√	√	√		√	√
5-6	Case presentation: Complications of Liver Disease	√	√	√		√		√	√	√		√	√
7	Case presentation: Nausea and Vomiting	√	√	√		√		√	√	√		√	√

8. Matrix of Knowledge and Skills of the Course

Study Week No.	Course contents	Outcomes Domains / Key elements										
		Domain 1				Domain 2		Domain 3				Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1		2.1.1.1		3.1.1.1	3.2.4.1	3.2.5.1		4.1.1.1	4.3.2.1
8	**Periodical (Mid-Term Exam)**												
9	Pancreatitis	√	√	√		√		√	√	√		√	√
10	Diarrhea-Constipation	√	√	√		√		√	√	√		√	√

5- 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.	A Pathophysiologic Approach, Eleventh Edition By: Joseph T. DiPiro, Gary C. Yee, L. Michael Posey, Stuart T. Haines, Thomas D. Nolin Published: June 2020 ISBN: 978126011681623.	Essential Book
4.	https://www.ekb.eg/. https://online.lexi.com https://accesspharmacy.mhmedical.com/ http://www.sciencedirect.com https://scholar.google.com/ http://www.pubmed.com	Websites

Course Coordinator	
Head of Department	**Prof.Dr Mohamed Elhusseiny Shams**

Course specification

2022/2023

Clinical Pharmacy Program

Faculty of Pharmacy

Mansoura University

بكالوريوس الصيدلة الإكلينيكية) لائحة موحدة و معدلة –

(Clinical Pharmacy unified & modified by law)

Course Specification

Academic year: 2022/2023

Course name: Treatment of respiratory system diseases	اسم المقرر: علاج أمراض الجهاز التنفسي
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلية
Head of Department: Prof. Dr. Mohamed Elhousseiny Shams	رئيس القسم: أ.د/ محمد الحسيني السبيعي شمس
Course Coordinator:	منسق المقرر:

University	Mansoura
Faculty	Pharmacy
Department offering the course	Clinical Pharmacy and Pharmacy Practice
Department supervising the course	
Program on which the course is given	**B. Pharm. (U & M by law) (Clinical Pharmacy)**
Academic Level	Fifth level, second semester, 2023-2024
Date of course specification approval	7th September 2023

Course specification

2022/2023

Clinical Pharmacy Program

Faculty of Pharmacy

Mansoura University

1- Basic Information: Course data:

Course Title	**Management of respiratory system diseases**
Course Code	**PP 012**
Prerequisite	**Pathology and pharmacology II**
Credit Hours: Lecture	**2**
Tutorial	**1**
Total Credit Hours	**3 (Credit H)**

2- Course Aims:

- This course covers the following topics: bronchial asthma, chronic obstructive pulmonary disease, cystic fibrosis, drug induced respiratory problems, respiratory tract infections and pulmonary hypertension.
- Each topic will be addressed with respect to etiology and precipitating factors of the disease, classical signs and symptoms, required laboratory investigations and their significance, non-pharmacological as well as pharmacological management of the disease, scores or biomarkers used to monitor progress or deterioration.

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**	Describe the risk factors, clinical presentation, relevant laboratory investigation in relation to updated treatment guidelines of different respiratory diseases.
1.1.4	**1.1.4.1**	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.
1.1.6	**1.1.6.1**	Recognize different scientific resources to make evidence-based informed professional decisions.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.1.3	2.1.3.1	Recognize own personal and professional limitations and accept the conditions of referral to or guidance from other members of the health care team.

DOMAIN 3: Pharmaceutical care

Program K. element no.	Course K. element no.	Course K. element
3.1.1	3.1.1.1	Interpret monitoring parameters of patient's response and therapeutic agents to manage drug therapy problems effectively.
3.2.1	3.2.1.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.
3.2.4	3.2.4.1	Educate patients about goals of therapy, monitoring of response and the possible side effects of the care plan.
3.2.5	3.2.5.1	Provide patient counseling to rationalize management of diseases affecting gastro-intestinal system.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	4.1.1.1	Contribute with healthcare team in formulary management activities related to the drugs affecting the respiratory tract
4.3.2	4.3.2.1	Practice self-learning to improve professional skills

4- Course Contents

Week No.	Lecture Topics	Lecture Credit Hours
1	Bronchial Asthma 1: diagnosis, classification of severity and control	2
2	Bronchial Asthma 2: pharmacologic treatment	2
3	Bronchial Asthma 3: Guidelines, action plan and exacerbation	2
4	Chronic obstructive pulmonary disease 1: Definition and Diagnosis	2
5	Chronic obstructive pulmonary disease 2: Assessment, Factors Determining Severity of COPD	2
6	Chronic obstructive pulmonary disease 3: Therapy Goals,Management of Stable COPD	2
7	Chronic obstructive pulmonary disease 4: Management of Acute Exacerbations of Chronic COPD	2
8	Pulmonary hypertension: Definition, Diagnosis and Assessment,Treatment	2
9	Cystic fibrosis: General Principles, Patient Assessment	2
10	Cystic fibrosis: Goals of Therapy, Treatment	2
11	Upper and lower respiratory tract infections: Definition, Types (self-learning)	2
12	Upper and lower respiratory tract infections: Diagnosis and Assessment, Treatment	2
13	Drug-induced pulmonary problems: Definition, Diagnosis	2
14	Drug-induced pulmonary problems: Assessment, Treatment	2
15	Revision and quiz	2
16	**Starting the final written and oral exam**	-

Week No.	Tutorial topics	Credit hours
1	Bronchial Asthma: diagnosis, classification of severity and control	1
2	Bronchial Asthma: pharmacologic treatment	1
3	Bronchial Asthma: Guidelines, action plan and exacerbation	1
4	Chronic obstructive pulmonary disease 1	1
5	Chronic obstructive pulmonary disease 2	1
6	Chronic obstructive pulmonary disease 3	1
7	Pulmonary hypertension	1
8	Mid-term exam	-
9	Cystic fibrosis part 1	1
10	Cystic fibrosis part 2	1
11	Group project: Upper respiratory tract infections	1
12	Drug-induced pulmonary problems, Part 1	1
13	Drug-induced pulmonary problems, Part 2	1
14	Revision and activity	1
15	**Practical exam**	-

5- Teaching and Learning Methods:

No	Teaching and Learning Methods	Week	Key elements to be addressed
5.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning ● Online learning through mymans "Mansoura University "as recorded – video lectures ● Interactive discussion through My Mans	Week 1-15	1.1.1.1/1.1.4.1/ 1.1.6.1/2.1.3.1/ 3.1.1.1/3.2.1.1 3.2.4.1/3.2.5.1
5.2	Self-learning	Week 11	4.1.1.1/4.3.2.1
5.3	Practical session using tutorials	Week 1-14	1.1.1.1/1.1.4.1/ 1.1.6.1/2.1.3.1/ 3.1.1.1/3.2.1.1 3.2.4.1/3.2.5.1
5.4	Class Activity: Group discussion offline and online.	Week 1-15	4.1.1.1/4.3.2.1
5.5	Problem – based learning and brainstorming	Week 1-15	4.1.1.1/4.3.2.1
5.7	Role play	Week 11	4.1.1.1/4.3.2.1

6- Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.1.1, 1.1.4.1, 1.1.6.1, 4.3.2.1
2-Tutorial exam	2.1.3.1, 3.1.1.1, 3.2.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
3-Oral	1.1.1.1, 1.1.4.1, 1.1.6.1, 4.3.2.1
4- Periodical (Mid-term exam)	1.1.1.1, 1.1.4.1, 1.1.6.1

b- Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	8th week
Assessment 2	Practical examination using tutorial	15th week
Assessment 3	Written exam	Starting in 16th week
Assessment 4	Oral exam	Starting in 16th week

c- Weighing of assessments

1	Periodical (Mid-term) exam	10%
2	Practical examination using tutorial	25%
3	Final-term examination	50%
4	Oral examination	15%
Total		100%

7-Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, Platform
Library	Books and mobile applications
Hospital	Respiratory rounds

8- List of References

No	References	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos prepared by stuff members	Videos on platform
3.	A Pathophysiologic Approach, Eleventh Edition By: Joseph T. DiPiro, Gary C. Yee, L. Michael Posey, Stuart T. Haines, Thomas D. Nolin Published: June 2020 ISBN: 978126011681623.	Essential Book
4.	http://www.sciencedirect.com / https://scholar.google.com/ http://www.pubmed.com https://www.ekb.eg	websites

9.1- Matrix1. of knowledge and skills of the course

Study Week No.	Course contents	Domain 1				Domain 2		Domain 3					Domain 4	
		1.1.1.1	1.1.4.1	1.1.6.1		2.1.3.1		3.1.1.1	3.2.1.1	3.2.4.1	3.2.5.1		4.1.1.1	4.3.2.1
A) **Theoretical part:**														
1	Bronchial Asthma 1: diagnosis, classification of severity and control	√												
2	Bronchial Asthma 2: pharmacologic treatment		√	√										
3	Bronchial Asthma 3: Guidelines, action plan and exacerbation		√	√										
4	Chronic obstructive pulmonary disease 1: Definition and Diagnosis	√	√	√										
5	Chronic obstructive pulmonary disease 2: Assessment,	√	√	√										

	Factors Determining Severity of COPD												
6	Chronic obstructive pulmonary disease 3: Therapy Goals,Management of Stable COPD	√	√	√									
7	Chronic obstructive pulmonary disease 4: Management of Acute Exacerbations of Chronic COPD	√	√	√									
8	Pulmonary hypertension: Definition, Diagnosis and Assessment,Treatment	√	√	√									√
9	Cystic fibrosis: General Principles, Patient Assessment	√	√	√									√
10	Cystic fibrosis: Goals of Therapy, Treatment	√	√	√									√

11	Upper and lower respiratory tract infections: Definition, Types (self-learning)	√	√	√									√
12	Upper and lower respiratory tract infections: Diagnosis and Assessment, Treatment	√	√	√									√
13	Drug-induced pulmonary problems: Definition, Diagnosis	√	√	√									√
14	Drug-induced pulmonary problems: Assessment, Treatment	√	√	√									√
15	Revision and quiz	√	√	√									√
B) Tutorial part:													
1	Bronchial Asthma: diagnosis, classification of severity and control					√		√	√	√	√	√	√
2	Bronchial Asthma:					√		√	√	√	√	√	√

	pharmacologic treatment													
3	Bronchial Asthma: Guidelines, action plan and exacerbation					√		√	√	√	√		√	√
4	Chronic obstructive pulmonary disease 1					√		√	√	√	√		√	√
5	Chronic obstructive pulmonary disease 2					√		√	√	√	√		√	√
6	Chronic obstructive pulmonary disease 3					√		√	√	√	√		√	√
7	Pulmonary hypertension					√		√	√	√	√		√	√
8	Mid-term exam													
9	Cystic fibrosis part 1					√		√	√	√	√		√	√
10	Cystic fibrosis part 2					√		√	√	√	√		√	√
11	Group project: Upper respiratory tract infections					√		√	√	√	√		√	√
12	Drug-induced pulmonary problems, Part 1					√		√	√	√	√		√	√

13	Drug-induced pulmonary problems, Part 2					√		√	√	√	√		√	√
14	Revision and activity					√		√	√	√	√		√	√

Course Coordinator	
Head of Department	**Prof. Dr. Mohamed Elhusseiny Shams**

بكالوريوس *الصيدلة الإكلينيكية* (لائحة موحدة و معدلة)

Course Specification

Academic year: 2023-2024

Course name: Drug information	**اسم المقرر:** معلومات دوائية
Academic Level: Level 5	**المستوى الأكاديمي:** الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	**القسم العلمي:** الصيدلة الإكلينيكية والممارسة الصيدلية
Head of Department Dr. Mohamed Elhusseiny Shams	**رئيس القسم:** د. محمد الحسيني شمس
Course Coordinator: To be nominated	**منسق المقرر:** سيتم ترشيحه

University	Mansoura
Faculty	Pharmacy
Department offering the course	Clinical Pharmacy and Pharmacy Practice
Department supervising the course	Clinical Pharmacy and Pharmacy Practice
Program on which the course is given	**B. Pharm. (Clinical Pharmacy) (Unified & Modified by law)**
Academic Level	Level 5, Second semester, 2023-2024
Date of course specification approval	7/9/2023

A. Basic Information: Course data:

Course Title	**Drug information**
Course Code	**PP 013**
Prerequisite	**Pharmacology II, Clinical Pharmacy II**
Teaching credit Hours: Lecture	**1**
Tutorial	**-**
Total Credit Hours	**(1 Credit H)**

B. Professional Information:

1 .Course Aims:

This course enables the students to:

1. Define and understand Pharmacovigilance drug information and poison information centers especially Egyptian Pharmacovigilance center.
2. Determine all activities relating to the detection, assessment, understanding and prevention of adverse effects or any other medicine-related problem.
3. Identify, measure, and compare the costs, risks, and benefits of programs, services, or therapies and determining which alternative produces the best health outcome for the resource invested.

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	1.1.6.1	Utilize economic informatics to improve the quality of life and analysis of the cost of drug therapy to healthcare systems, manage resources and optimize patient safety and understand Pharmacoeconomics.
1.1.7	1.1.7.1	Collect and analyze drug information, relating to the detection, assessment, understanding and prevention of adverse effects or any other medicine-related problem

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.5.2	2.5.2.1	Retrieve, interpret, and evaluate evidence-based information needed in pharmacy profession especially Pharmacoeconomics.

DOMAIN 3: PHARMACEUTICAL CARE

Program K. element no.	Course K. element no.	Course K. element
3.2.3	3.2.3.1	Integrate best available evidence for application of non-conventional therapy into pharmacy practice that uses cost-benefit, cost-effectiveness, cost-minimization, cost-of-illness and cost-utility analyses to compare pharmaceutical products and treatment strategies.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.2.1	4.2.1.1	Demonstrate effective communication skills verbally, non-verbally, and to improve public health and safety in relation to the use of medicines.
4.3.2	4.3.2.1	Promote continuous professional development by practicing self and independent learning to detect problems related to the use of medicines and communicate the findings in a timely manner and to contribute to the assessment of benefit, harm, effectiveness and risk of medicines.

3- Course Contents:

Week No.	Topics	Credit Hours
1	Introduction to the course	1
2	Pharmacovigilance	1
3	Adverse Drug Reactions	1
4	Introduction to the Egyptian Pharmacovigilance center	1
5	The Yellow Card/ Individual Case Safety Report (ICSR)	1
6	Most commonly reported ADRs	1
7	Drug design and clinical trails	1
8	Data presentation	1
9	Pharmacoeconomics	1
10	The cost - Partial economic evaluations	1
11	Cost- effectiveness analysis	1
12	Cost utility analysis	1
13	Full economic evaluations	1
14	Humanistic Evaluation Methods (self- learning)	1
15	Revision and quiz	1
16	**Starting the final written and oral exam**	-

4- Teaching and Learning Methods:

	Teaching and learning method	Week number	K. elements to be addressed
4.1	Lectures using white board.	1-15	1.1.6.1, 1.1.7.1, 2.5.2.1, 3.2.3.1
4.2	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • On line learning through mymans "Mansoura university "as recorded – video lectures Inter active discussion through My Mans	1-15	1.1.6.1, 1.1.7.1, 2.5.2.1, 3.2.3.1
4.3	Self-learning	14	4.2.1.1, 4.3.2.1
4.4	Class Activity: Group discussion offline and online.	1-15	2.5.2.1, 3.2.3.1, 4.2.1.1, 4.3.2.1
4.5	Problem – based learning and brainstorming	1-15	2.5.2.1, 3.2.3.1, .1.1, 4.3.2.1
4.6	Research assignments	1-15	2.5.2.1, 3.2.3.1, 4.2.1.1, 4.3.2.1

5- Student Assessment:

a- Assessment Methods:

Periodical (midterm)/ course work	1.1.7.1, 4.2.1.1, 4.3.2.1
Written exam	1.1.6.1, 1.1.7.1, 2.5.2.1, 3.2.3.1, 4.2.1.1, 4.3.2.1
Oral exam	1.1.6.1, 1.1.7.1, 2.5.2.1, 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	Written exam	Starting in 16th week
Assessment 2	Oral exam	Starting in 16th week

c- Weighing of assessments

1	Periodical (Mid-term) exam / Course work	10%
2	Oral examination	15%
3	Final written examination	75%
Total		100%

6- Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, Platform
Library	Books and Pharmacopoeia

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

Study Week	Course contents	Outcomes Domains / Key elements							
		Domain 1			Domain 2		Domain 3		Domain 4	
		1.1.6.1	1.1.7.1		2.5.2.1		3.2.3.1		4.2.1.1	4.3.2.1
1	Introduction to the course		√						√	√
2	Pharmacovigilance		√						√	√
3	Adverse Drug Reactions		√						√	√
4	Introduction to the Egyptian		√						√	√

	Pharmacovigilance center									
5	The Yellow Card/ Individual Case Safety Report (ICSR)		√						√	√
6	Most commonly reported ADRs		√						√	√
7	Drug design and clinical trails		√						√	√
8	Data presentation		√						√	√
9	Pharmacoeconomics		√						√	√
10	The cost - Partial economic evaluations	√			√		√			
11	Cost- effectiveness analysis	√							√	√
12	Cost utility analysis	√			√		√			
13	Full economic evaluations	√			√		√			
14	Humanistic Evaluation Methods (self- learning)	√			√		√			
15	Revision and quiz	√			√		√			

8- List of References

No	Reference	Type
1.	-Guidelines for Detecting & Reporting Adverse Drug Reactions In Egypt- 2020 Version 01 Individual Case Safety Reports. --Liu, Yifei. “Essentials of Pharmacoeconomics.” American Journal of Pharmaceutical Education vol. 73,5 (2022): 94.	Reference textbooks
2.	Electronic book prepared by staff members	Course notes
3.	Recorded videos prepared by staff members	Videos on platform
4.	https://www.ekb.eg/ https://www.google scholer.com/ https://www.pubmed.com/ https://www.sciencedirect.com/	Official Websites

Course Coordinator	**To be nominated**
Head of Department	**Dr Mohamed ELhusseiny Shams** Date ….7/9/2023

Fifth level		Course Specification of Antimicrobial Agents

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Microbiology and Immunology
Course title: Antimicrobial Agents
Course code: PM E05

Program on which the course is given	B. Pharm (Modified and unified bylaw)
Academic Level	Level 5, Second semester, 2023/2024
Date of course specification approval	10/9/2023

1. Basic Information: Course data:

Course title:	**Antimicrobial Agents**	**Code:** PM E05
Specialization:	**Discretionary**	
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 provide students with information about factor affecting choice of antimicrobial agent, about the specific mechanism of action of different antimicrobial major antimicrobial associated problems, how to detect the specific mechanism of resistance for different antimicrobials and infection prevention and control practices.

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	Outline the different classes of antimicrobial agents and their use in treatment of pathogenic bacteria.
1.1.3	1.1.3.1	Identify the source of infection and outline methods for infection prevention.
1.1.4	1.1.4.1	Recognize the mechanism of action of each antimicrobial agent against the microbe for complete patient recovery.
	1.1.4.2	Illustrate the requirements for successful antimicrobial therapy.
1.1.5	1.1.5.1	Recognize problems and adverse effects associated with the use of antimicrobials.
	1.1.5.2	Understand the crucial role of the laboratory in detecting antimicrobial resistance
	1.1.5.3	Outline and explain approaches used to overcome microbial resistance

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.1.1	2.1.1.1	Utilize different measures to monitor and control of infection
2.2.1	2.2.1.1	Utilize different laboratory test for detecting antimicrobial resistance
2.4.3	2.4.3.1	Apply rational prescribing by adhering to the principles of the stewardship program for treatment and prophylaxis.

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
3.1.3	3.1.3.1	Explain the laboratory methods to detect antimicrobial resistance and resistance mechanisms and their limitations.
3.2.6	3.2.6.1	Explain the importance of antimicrobial formularies, consumption data and prescribing policies and processes to monitor use of antimicrobials

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.1	4.1.1.1	Able to solve problems, decision making and time management
4.1.2	4.1.2.1	Understand ethical, legal and safety guidelines
	4.1.2.2	Use effective team work to evaluate information and solving the problems.
4.2.1	4.2.1.1	Communicate efficiently in a scientific and easy language, by verbal and written means, regardless of the person's condition.
4.3.2	4.3.2.1	Apply independent education to promote continuous professional development.

4. Contents:

Week No	Topics	Lecture credit hours
1	Orientation of the course and Introduction to antimicrobial agents	1
2	Requirements for successful antimicrobial therapy	1
3	Problems associated with the use of antimicrobials	1
4	Rational and irrational use of antibiotics	1
5	Antimicrobial stewardship	1
6	Monitor and control of infection (Chain of infection)	1
7	Standard methods for infection prevention	1
8	Personal Protective Equipment	--
9	Waste management	1
10	Bioassay of antibiotics	1
11	Mechanism of antimicrobial resistance	1
12	Classification of β-Lactamase and phenotypic detection of ESBL and AmpC	1
13	Phenotypic detection of AmpC	1
14	Phenotypic detection of carbapenemase and strategies to minimize resistance	1

15	Revision and quiz	1
16	**Final Theoretical exam**	-

Week No	Topics	Practical credit hours
1	Laboratory safety measures and principles of Disk Diffusion Testing	1
2	Determination of antimicrobial susceptibility pattern	1
3	Detection of methicillin resistant *Staphylococcus aureus*.	1
4	Detection of Extended spectrum beta lactamases (ESBLs) producing strains. 1- Initial screening tests. 2- **Phenotypic confirmatory tests:** A- Broth dilution test	1
5	Detection of Extended spectrum beta lactamases (ESBLs) producing strains. **Phenotypic confirmatory tests:** B-Double-disc approximation test	1
6	Detection of ampC enzymes	1
7	Detection of Metallo-betalactamases	1
8	**Mid-term Exam**	--
9	Modified Hodge Test for Carbapenemase Detection	1
10	**Assay of efflux pump** ● Efflux pump activity by EtBr cartwheel method	1
11	**Assay of efflux pump** ● MIC Determination in the presence of efflux pump inhibitor	1
12	Activity assessment	1
13	Infection prevention control Standard measures	1
14	Revision	1
15	Practical exam applying OSPE	-

5. Teaching and learning Methods:

Teaching and Learning Methods	
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 for practical sessions

	• Inter active discussion through My Mans
5.2	Self-learning
5.3	Practical session using chemicals and laboratory equipment and/ or tutorials
5.4	Class Activity: Group discussion
5.5	Research assignments

6. Student Assessment:

a- Assessment methods

Assessment Methods	K elements to be assessed
1- Periodical (Mid-term exam) / Course work	1.1.3.1, 1.1.4.2,1.1.5.1, 1.1.5.3, 2.1.1.1, 2.4.3.1, 4.1.2.1, 4.1.2.1, 4.2.1.1, 4.3.2.1
2-Practical exam	1.1.3.1, 1.1.4.1, 2.1.1.1, 2.2.1.1, 2.4.3.1, 3.1.2.1, 3.1.3.1, 3.2.6.1, 4.1.2.2.
3-Written exam	1.1.1.1, 1.1.3.1, 1.1.4.1, 1.1.4.2, 1.1.5.1, 1.1.5.2, 1.1.5.3, 2.1.1.1, 2.2.1.1, 2.4.3.1, 3.1.2.1, 3.1.3.1, 3.2.6.1

b- Assessment schedule

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

c- Weighting of assessments

1	**Periodical (Mid-term exam) Practical examination and tutorial**	**25 %**
2	**Written exam**	**75 %**
Total		**100%**

7. List of References

No.	Reference	type
1	Electronic book prepared by staff members	Book
2	Gualerzi, C. O., Brandi, L., & Fabbretti, A. (2014). Antibiotics: Targets, mechanisms and resistance. Weinheim: Wiley-VCH.	Book
3	https://www.cdc.gov/handhygiene/providers/index.html	Website
4	https://www.uptodate.com/contents/infection-prevention-precautions-for-preventing-transmission-of-infection	Website

5	http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html.	**Website**
6	Simon RJ Maxwell: Rational prescribing: the principles of drug selection. Clinical Medicine 2016 Vol 16, No 5: 459–64	**Journal**
7	Richard Ofori-Asenso and Akosua Adom Agyeman : Irrational Use of Medicines—A Summary of Key Concepts. Pharmacy 2016, 4, 35; doi:10.3390/pharmacy4040035	**Journal**
8	CDC. Core Elements of Hospital Antibiotic Stewardship Programs. Atlanta, GA: US Department of Health and Human Services, CDC; 2014. Available at http://www.cdc.gov/getsmart/healthcare/ implementation/core-elements.html.	**Website**
9	https://www.pharmatutor.org/articles/microbial-assay-antibiotics	**Website**
10	https://medcraveonline.com/JABB/phenotypic cofirmatory-disc-diffusion-test-pcddt-double-disc-synergy-test-ddst-e-test-os-diagnostic-tool-for-detection-of-extended-spectrum-beta-lactamase-esbetal-producing-uropathogens.html	**Website**
11	https://0810o8mo2-1105-y-https-www-webofscience-com.mplbci.ekb.eg/wos/bci/full record/BCI:BCI202200167675?SID=F5asOPXJmHNrZTuNrCq	Egyptian knowledge bank

Matrix 1: Course content and course key elements:

Course contents	Week No.	Course Key Elements									
A) Theoretical part		Domain 1							Domain 2		
		1.1.1.1	1.1.3.1	1.1.4.1	1.1.4.2	1.1.5.1	1.1.5.2	1.1.5.3	2.1.1.1	2.2.1.1	2.4.3.1
Orientation of the course and Introduction to antimicrobial agents	1	✓		✓	✓		✓	✓			✓
Requirements for successful antimicrobial therapy	2	✓		✓	✓		✓	✓			✓
Problems associated with the use of antimicrobials	3	✓		✓	✓		✓	✓			✓
Rational and irrational use of antibiotics	4	✓		✓	✓		✓	✓			✓
Antimicrobial stewardship	5		✓		✓			✓	✓		
Monitor and control of infection (Chain of infection)	6		✓		✓			✓	✓		
Standard methods for infection prevention	7		✓		✓			✓	✓		
Personal Protective Equipment	8		✓		✓			✓	✓		
Waste management	9	✓		✓		✓				✓	✓
Bioassay of antibiotics	10	✓		✓		✓				✓	✓
Mechanism of antimicrobial resistance	11	✓		✓	✓	✓	✓			✓	✓
Classification of β-Lactamase and phenotypic detection of ESBL and AmpC	12	✓		✓	✓	✓	✓				✓
Phenotypic detection of AmpC	13	✓		✓	✓	✓	✓				✓

Phenotypic detection of carbapenemase and strategies to minimize resistance	14	✓		✓	✓	✓	✓				✓
Revision and quiz	15	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Course contents	Week No.	Course Key Elements							
		Domain 3			Domain 4				
		3.1.2.1	3.1.3.1	3.2.6.1	4.1.1.1	4.1.2.1	4.1.2.2	4.2.1.1.	4.3.2.1
Orientation of the course and Introduction to antimicrobial agents	1		✓	✓	✓		✓	✓	✓
Requirements for successful antimicrobial therapy	2		✓	✓	✓		✓	✓	✓
Problems associated with the use of antimicrobials	3		✓	✓	✓		✓	✓	✓
Rational and irrational use of antibiotics	4		✓	✓	✓		✓	✓	✓
Antimicrobial stewardship	5	✓				✓	✓	✓	✓
Monitor and control of infection (Chain of infection)	6	✓				✓	✓	✓	✓
Standard methods for infection prevention	7	✓				✓	✓	✓	✓
Personal Protective Equipment	8	✓				✓	✓	✓	✓
Waste management	9		✓		✓		✓	✓	
Bioassay of antibiotics	10		✓		✓		✓	✓	

Mechanism of antimicrobial resistance	11		✓		✓		✓	✓		
Classification of β-Lactamase and phenotypic detection of ESBL and AmpC	12		✓		✓		✓	✓		
Phenotypic detection of AmpC	13		✓		✓		✓	✓		
Phenotypic detection of carbapenemase and strategies to minimize resistance	14		✓		✓		✓	✓		

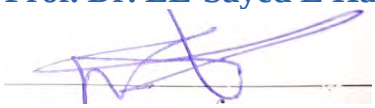
Course contents	Week No.	Course Key Elements									
B) Practical part		Domain 1							Domain 2		
		1.1.1.1	1.1.3.1	1.1.4.1	1.1.4.2	1.1.5.1	1.1.5.2	1.1.5.3	2.1.1.1	2.2.1.1	2.4.3.1
Laboratory safety measures and principles of Disk Diffusion Testing	1			✓						✓	✓
Determination of antimicrobial susceptibility pattern	2			✓						✓	✓
Detection of methicillin resistant *Staphylococcus aureus*.	3			✓						✓	✓
Detection of Extended spectrum beta lactamases (ESBLs) producing strains. 1- Initial screening tests. 2- **Phenotypic confirmatory tests:**	4			✓						✓	✓

A- Broth dilution test											
Detection of Extended spectrum beta lactamases (ESBLs) producing strains. **Phenotypic confirmatory tests:** B-Double-disc approximation test	5			✓						✓	✓
Detection of ampC enzymes	6			✓						✓	✓
Detection of Metallo-betalactamases	7			✓						✓	✓
Modified Hodge Test for Carbapenemase Detection	9			✓						✓	✓
Assay of efflux pump ● Efflux pump activity by EtBr cartwheel method	10			✓						✓	✓
Assay of efflux pump ● MIC Determination in the presence of efflux pump inhibitor	11			✓					✓	✓	✓
Activity assessment	12		✓		✓			✓	✓		✓
Infection prevention control Standard measures	13		✓		✓			✓	✓		✓
Revision	14		✓	✓	✓			✓	✓	✓	✓

Course contents	Week No.	Course Key Elements							
		Domain 3			Domain 4				
		3.1.2.1	3.1.3.1	3.2.6.1	4.1.1.1	4.1.2.1	4.1.2.2	4.2.1.1.	4.3.2.1
Laboratory safety measures and principles of Disk Diffusion Testing	1		✓						
Determination of antimicrobial susceptibility pattern	2		✓						
Detection of methicillin resistant *Staphylococcus aureus*.	3		✓						
Detection of Extended spectrum beta lactamases (ESBLs) producing strains. 1- Initial screening tests. 2- **Phenotypic confirmatory tests:** A- Broth dilution test	4		✓						
Detection of Extended spectrum beta lactamases (ESBLs) producing strains. **Phenotypic confirmatory tests:** B-Double-disc approximation test	5		✓		✓		✓		
Detection of ampC enzymes	6		✓		✓		✓		
Detection of Metallo-betalactamases	7		✓		✓		✓		
Modified Hodge Test for Carbapenemase Detection	9		✓		✓		✓		

Assay of efflux pump • Efflux pump activity by EtBr cartwheel method	10		✓		✓		✓		
Assay of efflux pump • MIC Determination in the presence of efflux pump inhibitor	11		✓		✓		✓		
Activity assessment	12	✓	✓	✓	✓		✓		
Infection prevention control Standard measures	13	✓	✓	✓	✓		✓		
Revision	14	✓	✓	✓	✓		✓		

Course specification
2023/2024
Clinical Pharmacy Program
Faculty of Pharmacy
Mansoura University

Course Coordinator:	**Prof. Dr. Rasha M. Fathy Barwa** 
Head of Department:	**Prof. Dr. EL-Sayed E Habib** 

Date: 10/9/2023

Course specification
2023- 2024
Faculty of Pharmacy
Mansoura University
Clinical Pharmacy Program

Level-4/5
Clinical Pharmacy Students
(Credit Hour System)

Production and Manufacture of Medicinal Plants

University: Mansoura
Faculty: Pharmacy
Department: Pharmacognosy
Course title: Production and Manufacture of Medicinal Plants

Program on which the course is given	Bachelor of Pharmacy (Modified and unified bylaw Clinical Pharmacy)
Academic Level	Level 4/5
Date of course specification approval	6/ 9/2023

1- Basic Information: Course data:

Course title:	Production and Manufacture of Medicinal Plants	**Code:**	PG E09
Specialization:	Clinical Pharmacy (Pharmaceutical science)		
Prerequisite: Registration			
Teaching Hours:	**Lecture:** 1	**Practical:**	1
Number of units: (credit hours)	2		

2- Course Aims:

The course introduces the students to the technologies of the processing, scaling up and industrial production of medicinal plants. It also describes all aspects related to the manufacturing of products from medicinal herbs including cultivation, collection, preparation, storage, modern methods for extraction, isolation of biologically active constituents, structure elucidation and formulation of medicinal plants. The potential use of natural products in the preparation of pharmaceutical forms and dietary supplements such as whey protein, slimming preparations, plants' carotenes and pigments, and crude flavonoids, as well as final packing of entire powdered forms or extract.

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 basic steps of processing medicinal plants to products and identify new technology for production of medicinal plants in the industry.
1.1.3	1.1.3.1	Draw the basics of macro and microscopical characters of different medicinal plant organs, detection of adulteration as well as, their proper collection, drying, storage and marketing in addition to chemotaxonomic classification of medicinal plants.
1.1.4	1.1.4.1	Recognize pharmacological effects of plant derived natural products and anti-oxidants drugs as well as their medicinal uses.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Select appropriate methods of extraction, isolation, purification, identification, standardization and formulation of medicines from plant source.
2.2.2	2.2.2.1	Analyze and standardization of active ingredients and select the proper method for authentication of medicinal plants or in the pharmaceutical preparation for quality management
2.3.1	2.3.1.1	Recognize the appropriate methods for preparation, analysis and handling of plant natural products and production of pharmaceuticals
2.5.1	2.5.1.1	Apply the requirement of the regulatory authority in manufacturing of medicinal plants including quality, safety, and efficacy requirements.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.2.3	3.2.3.1	Provide evidence-based information about safe use of medicinal plants.

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
4.3.2	4.3.2.1	Practice independent learning to promote continuous professional development.

4- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Plant-derived medicines and their role in global health	**1**
2	Collection of medicinal plants, Factors Causing Variability in Drug Activity: I- genetic factors: polyploidy, hybridization, selection, mutation	**1**
3	II- Ecological factors: 1- Light & temperature, 2- Latitude, 3- Altitude, 4- Minerals, water and oxygen, 5- Precursors, 6- Parasites, 7- allelopathy 8- Plant growth regulators	**1**
4	III- Subsequent factors {changes taking place in drugs subsequent to collection and drying: desirable changes, undesirable changes	**1**
5	Technologies for the Processing of Medicinal Plants	**1**
6	Grinding and extraction of the drug, concentration and drying of the extracts.	**1**
7	Production of bioactive compounds from medicinal plants by tissue culture techniques	**1**
8	Plant cell and tissue cultures (introduction, definitions, callus induction)	**1**
9	Plant cell and tissue cultures (suspension cultures, scaling up)	**1**
10	Formulation of plant extracts into dosage forms	**1**
11	Quality Control and Instrumental Analysis of Plant Extracts	**1**
12	Good Manufacturing Practice for Herbal Medicines	**1**
13	Regulatory aspects of medicinal product production**.**	**1**
14	Revision	**1**
15	**Final written and oral exam**	
Week No.	**Practical topics**	**Practical credit hours**
1.	Lab rules and explanation for the course assignments	1
2.	Collection of medicinal plants	1
3.	Segregation of medicinal plants	1
4.	Chemical authentication of medicinal plants	1
5.	Botanical authentication of medicinal plants	1
6.	chemical authentication of medicinal plants	1
7.	Methods of drying for medicinal plants	1

8.	Extraction methods	1
9.	Demo on extraction facilities	1
10.	Plant extract formulation examples part I	1
11.	Plant extract formulation examples part II	1
12	Field visit	
13	Revision	
14	**Sheet / and Practical exam**	1

5- Teaching and learning Methods:

	Teaching and Learning Methods	Week No.
5.1	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 • Inter active discussion through My Mans	1-14
5.2	Self-learning	12
5.3	Practical session using laboratory equipment and through platform	1-13
5.4	Class Activity: Group discussion offline and online.	8
5.5	Research assignments	10

6- Student Assessment:

a- Assessment methods:

Assessment Methods	**K elements to be assessed**
1-Written exam	1.1.1.1, 1.1.3.1, 1.1.4.1, 2.2.1.1, 2.2.2.1, 2.3.1.1, 2.5.1.1, 3.2.3.1, 4.3.2.1
2-Practical exam	2.2.1.1, 2.2.2.1, 2.3.1.1, 2.5.1.1, 4.1.2.1
3-Oral	1.1.1.1, 1.1.3.1, 1.1.4.1, 2.2.1.1., 2.5.1.1, 3.2.3.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.3.1, 1.1.4.1, 2.2.1.1

b- Assessment schedule

Assessment 1	Practical	14th week
Assessment 3	Mid-term	8th week
Assessment 3	Oral	15th week
Assessment 4	Written	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 %
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.	Textbook of Industrial Pharmacognosy. 1st edition. A.N. Kalia. CBS Publishers, 2018.	Book
4.	Drugs from discovery to approval. 5nd edition, Rich N.G. Wiley-Blackwell, 2019	Book
5.	Good Pharmaceutical Manufacturing Practice. 5st edition, John Sharp. CRC Press, 20`5.	Book
6.	Medicinal Plants: From Farm to Pharmacy 1st ed. 2019, by Nirmal Joshee, Sadanand A. Dhekney, Prahlad Parajuli (Editors), Springer	Book
7.	Medicinal Plants: Production, Cultivation and Uses. Aubert Matthias, Nicolas Laisné (Editors). NOVA science publishers, New York, 2017	Book
8.	From medicinal plant raw material to herbal remedies. Aromatic and Medicinal Plants: Back to Nature Djordjevic, S.M., InTech Open, Croatia, 2017.	Book
9.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	websites

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

Week No.	Course contents / K. elements	Domain 1			Domain 2				Domain 3	Domain 4	
		1.1.1.1	1.1.3.1	1.1.4.1	2.2.1.1	2.2.2.1	2.3.1.1	2.5.1.1	3.2.3.1	4.1.2.1	4.3.2.1
1	Plant-derived medicines and their role in global health	✓	✓	✓						✓	✓
2	Collection of medicinal plants, Factors Causing Variability in Drug Activity: I- genetic factors: polyploidy, hybridization, selection, mutation	✓	✓	✓							
3	II- Ecological factors: 1- Light & temperature, 2- Latitude, 3- Altitude, 4- Minerals, water and oxygen, 5- Precursors, 6- Parasites, 7- allelopathy 8- Plant growth regulators	✓	✓	✓							✓
4	III- Subsequent factors {changes taking place in drugs subsequent to collection and drying: desirable changes, undesirable changes	✓	✓	✓					✓		
5	Technologies for the Processing of Medicinal Plants	✓	✓	✓							
6	Grinding and extraction of the drug, concentration and drying of the extracts.	✓	✓	✓							
7	Production of bioactive compounds from medicinal plants by tissue culture techniques		✓	✓					✓	✓	✓
8	Plant cell and tissue cultures (introduction, definitions, callus induction)		✓	✓					✓	✓	✓
9	Plant cell and tissue cultures (suspension cultures, scaling up)	✓	✓	✓							
10	Formulation of plant extracts into dosage forms	✓	✓	✓					✓		
11	Quality Control and Instrumental Analysis of Plant Extracts	✓	✓	✓					✓		
12	Good Manufacturing Practice for Herbal Medicines	✓	✓	✓					✓		
13	Regulatory aspects of medicinal product production.	✓									
14	Revision	✓			✓						
	Practical topics										
1	Lab rules and explanation for the course assignments				✓	✓	✓	✓	✓	✓	✓
2	Collection of medicinal plants				✓	✓	✓	✓	✓	✓	✓
3	Segregation of medicinal plants				✓	✓	✓	✓	✓	✓	✓
4	Chemical authentication of medicinal plants				✓	✓	✓	✓	✓	✓	✓
5	Botanical authentication of medicinal plants				✓	✓	✓	✓	✓	✓	✓
6	chemical authentication of medicinal plants				✓	✓	✓	✓	✓	✓	✓
7	Methods of drying for medicinal plants				✓	✓	✓	✓	✓	✓	✓
8	Extraction methods				✓	✓	✓	✓	✓	✓	✓

9	Demo on extraction facilities				✓	✓	✓	✓	✓	✓	✓
10	Plant extract formulation examples part I				✓	✓	✓	✓	✓	✓	✓
11	Plant extract formulation examples part II				✓	✓	✓	✓	✓	✓	✓
12	Field visit				✓	✓	✓	✓	✓	✓	✓
13	Revision				✓	✓	✓		✓	✓	✓

Course Coordinator :	
Head of department	**Prof. Dr. Mahmoud Fahmy El-Sebai**

Level-4/5
Clinical Pharmacy Students
(Credit Hour System)

Course Specification: Chromatography and Separation Techniques

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmacognosy
Course title: Chromatography and Separation Techniques
Course code: PG E10

Program on which the course is given	Bachelor of Pharmacy (Modified and unified bylaw Clinical Pharmacy)
Academic Level	Level 4/5, First / second semester
Date of course specification approval	6 / 9 / 2023

1. Basic Information : Course data :

Course title:	Chromatography and Separation Techniques	**Code:** PG E10
Specialization:	Pharmaceutical science	
Prerequisite:	Registration	
Teaching credit Hours:	**Lecture:** 1	**Practical:** 1
Total Number of units: (credit hours)	2 **hours**	

2- Course Aims:

At the end of the course the student should:	
1.	Gain valuable knowledge about the modes of separation, gel filtration and permeation, ion exchange chromatography.
2.	Master the types & properties of ion exchange chromatography, ion exchange and non-ion exchange manifestations and applications.
3.	Gain understanding of the High-pressure liquid chromatography, gas liquid chromatography and their application.

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 comprehensive understanding of pharmacological, biological, social, behavioral, administrative, and clinical sciences.
1.1.3	1.1.3.1	Combine the principles of basic science to handle, identify, extract, design, prepare, analyze and ensure synthetic / natural pharmaceutical raw materials and finished products.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Distinguish, plan, formulate, purify, standardize and quantify, of pharmaceutical resources and from various origins.
2.3.1	2.3.1.1	Select and implement appropriate methods, procedures, and resources for managing and disposing of synthetic/natural materials, biological, radioactive, and biotechnology-based pharmacy products.
2.3.2	2.3.2.1	Use best practices and follow strict ethical, legal, and safety guidelines for the management of biological and pharmaceutical materials/products.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Support the development of pharmacy knowledge and practices and contribute in the delivery of health services both individually and as a team.
4.2.2	4.2.2.1	Use artificial technology when possible, to offer important information.
4.3.2	4.3.2.1	Apply principles of continuous professional development, such as analyzing one's own learning requirements and devising a strategy to meet them.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Introduction to chromatography	1
2	Different modes of separation	1
3	Thin layer chromatography (TLC) and flash chromatography	1
4	Gel filtration and its applications	1

5	Gel permeation and its applications	1
6	Supercritical fluid chromatographic technique (self-learning)	1
7	Types and properties of Ion exchange chromatography	1
8	Ion exchange and non-ion exchange manifestations and applications	1
9	High-pressure liquid chromatography	**1**
10	Applications on high-pressure liquid chromatography	**1**
11	Gas liquid chromatography	**1**
12	applications on Gas liquid chromatography	**1**
13	Advanced separation technique	**1**
14	Revision	**1**
15	**Final written and oral exam**	
Week No.	**Tutorial Topics**	**Tutorial credit hours**
1.	Separation techniques	1
2.	Stationary phases (including ion exchange, ion pairing and chiral) and Mobile phases	1
3.	Partition Coefficients, Retention Factors, Separation and Resolution	1
4.	Thin layer chromatography (TLC) and flash chromatography	1
5.	High performance liquid chromatography (HPLC / UPLC / normal/reverse/chiral phase)	1
6.	Gas chromatography (system considerations and detection methods).	1
7.	Gel permeation chromatography	1
8.	Supercritical Fluid Chromatography	1
9.	Capillary electrophoresis principles	1
10.	Gel electrophoresis principles	1
11.	Capillary Zone Electrophoresis	1
12.	Protein purification (affinity, Ion exchange)	1
13	Protein purification (exclusion chromatography, SDS-PAGE)	1
14	**Sheet exam**	

4- Teaching and Learning Methods:

	Teaching and Learning Methods	Week No.

5.1	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 • Inter active discussion through My Mans	1-14
5.2	Self- learning	10
5.3	tutorials session	1-13
5.4	Class Activity: Group discussion offline and online.	9
5.5	Research assignments	8

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.3.1.1, 2.3.2.1, 4.3.2.1
2-Tutorial exam	2.2.1.1, 2.3.1.1, 2.3.2.1
3-Oral	1.1.1.1, 1.1.3.1, 4.1.2.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.3.1, 4.2.2.1

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	8h week
Assessment 2	tutorial examination	14th week
Assessment 3	Written exam	15th week
Assessment 4	Oral exam	15th week

c. Weighing of assessments

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

6- Matrix of knowledge and skills of the course

Week No.	Course contents / K. elements	Domain 1		Domain 2			Domain 4		
		1.1.1.1	1.1.3.1	2.2.1.1	2.3.1.1	2.3.2.1	4.1.2.1	4.2.2.1	4.3.2.1
1	Introduction to chromatography	✓	✓	✓	✓				
2	Different modes of separation	✓	✓	✓	✓	✓			
3	Thin layer chromatography (TLC) and flash chromatography								
4	Gel filtration and its applications		✓		✓				
5	Gel permeation and its applications			✓		✓			
6	Supercritical fluid chromatographic technique (self-learning)	✓	✓			✓			
7	Types and properties of Ion exchange chromatography	✓	✓	✓	✓				
8	Ion exchange and non-ion exchange manifestations and applications	✓	✓	✓	✓	✓			
9	High-pressure liquid chromatography								
10	Applications on high-pressure liquid chromatography		✓		✓				
11	Gas liquid chromatography			✓		✓			
12	applications on Gas liquid chromatography	✓	✓			✓			
13	Advanced separation technique	✓	✓	✓	✓				
14	Revision	✓	✓	✓	✓	✓			
	Tutorial topics								

1	Separation techniques					✓			✓	✓	✓
2	Stationary phases (including ion exchange, ion pairing and chiral) and Mobile phases				✓		✓				
3	Partition Coefficients, Retention Factors, Separation and Resolution					✓			✓	✓	✓
4	Thin layer chromatography (TLC) and flash chromatography				✓		✓				
5	High performance liquid chromatography (HPLC / UPLC / normal/reverse/chiral phase)					✓			✓	✓	✓
6	Gas chromatography (system considerations and detection methods).				✓		✓				
7	Gel permeation chromatography					✓			✓	✓	✓
8	Supercritical Fluid Chromatography				✓		✓				
9	Capillary electrophoresis principles					✓			✓	✓	✓
10	Gel electrophoresis principles				✓		✓				
11	Capillary Zone Electrophoresis					✓			✓	✓	✓
12	Protein purification (affinity, Ion exchange)				✓		✓				
13	Protein purification (exclusion chromatography, SDS-PAGE)					✓			✓	✓	✓

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.	Modern Analytical Chemistry, David Harvey, McGraw-Hill, 1st ed, 2016, ISBN: 0–07– 237547–7	**Book**
4.	Principles of Instrumental Analysis", D. A. Skoog, F. J. Holler, S.R. Crouch, Brooks Cole; 6th edition (2016)	**Book**
5.	Chemical Analysis: Modern Instrumentation Methods and Techniques, Francis Rouessac, AnnickRouessac, John Wiley & Sons, 2nd ed, 2017	**Book**
6.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	**websites**

Course Coordinator	**Prof. Dr. ……**
Head of Department	**Prof. Dr.** Mahmoud Fahmy El-Sebai

Date: 6 / 9 / 2023

Fifth level

Course Specification: Advanced Pharmaceutical Analysis-Spectroscopy

Course Specification

Academic year: 2023-2024

Course name: Advanced Pharmaceutical Analysis-Spectroscopy	اسم المقرر: تحاليل صيدلية متقدمة – تحليل طيفى
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Pharmaceutical analytical chemistry	القسم العلمي: الكيمياء التحليلية الصيدلية
Head of Department: Prof. Dr. jenny Gihan Mohamed Ahmed Nasr	رئيس القسم: أ.د/ جيني جيهان محمد أحمد نصر
Course Coordinator: Prof. Dr. Manal Ibrahim Eid	منسق المقرر: أ.د/ منال إبراهيم عيد

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmaceutical analytical chemistry
Department supervising the course	Pharmaceutical analytical chemistry
Program on which the course is given	B. Pharm (Clinical Pharmacy), Modified and unified bylaw)
Academic Level	Level 5, First semester, 2023-2024
Date of course specification approval	10/9/2023

1- Basic Information: Course data:

Course Title	**Advanced Pharmaceutical Analysis-Spectroscopy**
Course Code	**PC E12**
Prerequisite	**Registration**
Teaching Hours: Lecture	**1**
Practical/Tutorial	**1**
Total Credit Hours	**2**

2. Course Aims:

1. Orienting the students to recall the basic principles of the advanced pharmaceutical analysis methods such as derivative spectrophotometry, synchronous spectrofluorimetric, chemiluminescence, and flow injection analysis.
2. Knowing applications of these methods to assess pharmaceutical compounds in pharmaceutical and biological matrices.
3. Recognizing the requirements for pharmaceutical industry, such as quality control and quality assurance of pharmaceutical products.

3. Course Key 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 advanced spectroscopic methods involved in pharmaceutical analysis such as derivative spectrophotometry, synchronous spectrofluorimetric, chemiluminescence, flow injection analysis, and lab-on-a-chip techniques.
1.1.3	**1.1.3.1**	Recognize the principles of spectrometry to identify and analyze pharmaceutical compounds in raw materials, pharmaceutical preparations, and biological fluids.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.2.1	**2.2.1.1**	Design new green analytical methods for the identification and quantification of pharmaceutical compounds in different pharmaceutical formulations.
2.2.3	**2.2.3.1**	Demonstrate how to use the available spectrometric instruments and software for the assay of single and multicomponent dosage forms.
2.2.4	**2.2.4.1**	Explain calculations and statistical analysis in assessment and validation of the developed methods.
2.3.1	**2.3.1.1**	Select appropriate green methods for handling and disposal of chemicals used in pharmaceutical analysis to avoid direct contact with hazardous chemicals.
2.3.2	**2.3.2.1**	Select best practices and adhere to high safety standards for management of pharmaceutical raw materials and pharmaceutical products.
2.5.3	**2.5.3.1**	Perform research studies and data analysis.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	**4.1.1.1**	Communicate effectively in team working.
4.1.2	**4.1.2.1**	Retrieve and analyze information to solve problems, and work individually or effectively in a team.
4.2.2	**4.2.2.1**	Utilize artificial technology to present relevant information.
4.3.1	**4.3.1.1**	Use effective strategies to manage and improve self-practice of pharmacy.
4.3.2	**4.3.2.1**	Apply principles of self-learning to improve professional skills

4. Course Contents

Week No.	Topics	Lecture credit Hours
1	**Application of UV-Vis spectroscopy: qualitative and quantitative analysis.** Fundamentals of UV-Vis spectroscopy, its application in qualitative analysis, Beer's law, problems on Beer's law.	1
2	**Determination of pKa by spectrophotometric titrations.**	1
3	**Quantitative application of UV-Vis spectroscopy: mathematical derivatization.** Fundamentals of derivative spectroscopy and its applications.	1
4	**Quantitative application of UV-Vis spectroscopy: chemical derivatization:** Chemical derivatization of compounds of low molar absorptivity, examples and applications.	1
5	**Reaction stoichiometric determination by Job's method, molar ratio method, and limiting logarithmic method**	1
6	**Conventional and synchronous spectrofluorimetry: fundamentals and applications.** Fluorescence and phosphorescence phenomena, Factors affecting fluorescence, fluorescence quantum efficiency, and advantages and disadvantages of spectrofluorimetry.	1
7	**Quantitative applications of spectrofluorimetry**. Analysis of inorganic compounds, organic compounds, and biochemical species, micellar enhancement of fluorescence, synchronous spectrofluorimetry, derivative synchronous spectrofluorimetry.	1
8	**Fundamentals of chemiluminescence.** Definition, types, advantages, and examples.	1

9	**Applications of chemiluminescence.** Quantitative applications of chemiluminescence in analysis of inorganic, organic, and biochemical species: analysis of toxic gases, analysis of biomolecules, and analysis of cancer calls.	1
10	**Flow injection analysis: fundamentals.** Definition, advantages, and examples.	1
11	**Flow injection analysis: applications.** Quantitative applications of flow injection analysis for the assay of pharmaceutical compounds in pharmaceutical and biological matrices.	1
12	**Lab-on-a-Chip technology: fundamentals and applications.** Introduction, advantages, applications.	1
13	**Green chemistry principles:** Introduction and illustration of the twelve principles of green chemistry. **Greenness assessment approaches**: analytical eco-scale and GAPI approaches and how to apply such techniques on the developed methods (self-learning).	1
14	**Revision and quiz**	1
15	**Final written and oral exam**	--
Week No.	**Practical Topics**	**Tutorial credit hours**
1.	Beer's law (introduction and problems solving).	1
2.	Determination of pKa by spectrophotometry (algebric method).	1
3.	Determination of pKa by spectrophotometry (graphical method).	1
4.	Determination of reaction stoichiometry by Job's method.	1
5.	Determination of reaction stoichiometry by molar ratio method.	1
6.	Determination of reaction stoichiometry by limiting logarithmic method.	1
7.	Derivative spectrophotometric analysis of aspirin and methocarbamol binary mixture.	1
8.	**Periodical Exam**	
9.	Derivative synchronous spectrofluorimetric determination of binary and ternary mixtures.	1
10.	Spectrofluorimetric analysis of pregabalin via its reaction with certain fluorogenic reagents.	1
11.	Greenness assessment by GAPI approach.	1

12.	Greenness assessment by analytical eco-scale approach.	1
13.	Seminars	1
14	**Sheet / and Practical exam**	--

5. Teaching and Learning Methods:

No.	Teaching and Learning Methods:
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
4.2	Practical session using chemicals and laboratory equipment and/ or tutorials and discussion
4.3	Self-learning
4.4	Formative Assignments
4.5	Class Activity Discussion / Brainstorming / problem solving
4.6	Tutorial

6. Student Assessment:

a- Assessment Methods:

Assessment Methods	**K. elements to be assessed**
1-Written exam	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.2.4.1, 2.3.1.1, 2.3.2.1, 2.5.3.1, 4.1.1.1, 4.1.2.1, 4.2.2.1, 4.3.1.1
2-Practical examination and tutorial	2.2.1.1, 2.2.3.1, 2.2.4.1, 2.3.1.1, 4.1.1.1, 4.1.2.1, 4.2.2.1, 4.3.1.1,4.3.2.1
3-Oral exam	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.2.4.1, 2.3.1.1, 2.3.2.1, 2.5.3.1
4- Periodical exam	1.1.1.1, 1.1.3.1, 2.2.1.1, 4.2.2.1

b- Assessment schedule

Assessment 1	Periodical exam	8th week

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

Weighing of assessments

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

6. Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Chemicals- Glass wares- White board

7. Matrix of knowledge and skills of the course

Week No.	Course contents / K. elements	Domain 1		Domain 2						Domain 4				
		1.1.1.1	1.1.3.1	2.2.1.1	2.2.3.1	2.2.4.1	2.3.1.1	2.3.2.1	2.5.3.1	4.1.1.1	4.1.2.1	4.2.1.1	4.3.1.1	4.3.2.1
1	**Application of UV-Vis spectroscopy: qualitative and quantitative analysis.** Fundamentals of UV-Vis spectroscopy, its application in qualitative analysis, Beer's law, problems on Beer's law.	□	□	□	□									
2	**Determination of pKa by spectrophotometric titrations.**	□	□	□	□									
3	**Quantitative application of UV-Vis spectroscopy: mathematical derivatization.** Fundamentals of derivative spectroscopy and its applications.	□	□	□	□	□		□	□	□	□	□	□	□

4	**Quantitative application of UV-Vis spectroscopy: chemical derivatization:** Chemical derivatization of compounds of low molar absorptivity, examples and applications.													
5	**Reaction stoichiometric determination by Job's method, molar ratio method, and limiting logarithmic method**													
6	**Conventional and synchronous spectrofluorimetry: fundamentals and applications.** Fluorescence and phosphorescence phenomena, Factors affecting fluorescence, fluorescence quantum efficiency, and advantages and disadvantages of spectrofluorimetry.													

7	**Quantitative applications of spectrofluorimetry**. Analysis of inorganic compounds, organic compounds, and biochemical species, micellar enhancement of fluorescence, synchronous spectrofluorimetry, derivative synchronous spectrofluorimetry.	□	□	□	□		□	□	□					
8	**Fundamentals of chemiluminescence.** Definition, types, advantages, and examples.	□	□	□	□	□	□	□	□	□	□	□	□	□
9	**Applications of chemiluminescence.** Quantitative applications of chemiluminescence in analysis of inorganic, organic, and biochemical species: analysis of toxic gases, analysis of biomolecules, and analysis of cancer calls.	□	□	□	□	□	□	□	□	□	□	□	□	□

10	**Flow injection analysis: fundamentals.** Definition, advantages, and examples.												
11	**Flow injection analysis: applications.** Quantitative applications of flow injection analysis for the assay of pharmaceutical compounds in pharmaceutical and biological matrices.												
12	**Lab-on-a-Chip technology: fundamentals and applications.** Introduction, advantages, applications.												
13	**Green chemistry principles:** Introduction and illustration of the twelve principles of green chemistry. **Greenness assessment approaches**: analytical eco-scale and GAPI												

	approaches and how to apply such techniques on the developed methods (self-learning).													
14	**Revision and quiz**													
Practical topics														
1	Beer's law (introduction and problems solving).													
2	- Determination of pKa by spectrophotometry (algebric method).													
3	- Determination of pKa by spectrophotometry (graphical method).													

4	-	Determination of reaction stoichiometry by Job's method.												
5	-	Determination of reaction stoichiometry by molar ratio method.												
6	-	Determination of reaction stoichiometry by limiting logarithmic method.												
7	-	Derivative spectrophotometric analysis of aspirin and methocarbamol binary mixture.												
9	-	Derivative synchronous spectrofluorimetric determination of binary and ternary mixtures.												
10	-	Spectrofluorimetric analysis of pregabalin via its reaction with certain fluorogenic reagents.												
11	-	Greenness assessment by GAPI approach.												
12	-	Greenness assessment by analytical eco-scale approach.												

13	- Seminars													

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.	Fundamentals of Analytical Chemistry, Douglas A.; Skoog; Donald M.; West, F.James Holler; Stanely, R.Crouch, Belmont, CA, USA 9th ed. (2014).	Essential Book
4.	Quantitative Chemical Analysis, Daniel C. Harris, 6th ed., W.H. Freeman and Company, New York (2003).	Essential Book
5.	Instrumental Methods of Chemical Analysis, Galan W. Ewing, 5th Ed. McGraw-hill book company, New York (1995).	Essential Book
6.	Practical Pharmaceutical Chemistry, Beckett, A. H. and Stenlake, J. B. 4th ed., Cambridge, England (1988).	Essential Book
7.	https://www.ekb.eg http://www.sciencedirect.com http://www.google scholar.com http://www.pubmed.com	Websites

Course Coordinator	**Prof. Dr. Manal Ibrahim Eid**
	M. Eid
Head of Department	**Prof. Dr. jenny Geehan Mohamed Ahmed Nasr**

Date: 10/9/2023

Modified Bylawبكالوريوس الصيدلة الإكلينيكية (لائحة معدلة –)

Course Specification

Academic year: 2023-2024

Course name: Cosmetic preparations	اسم المقرر: مستحضرات التجميل
Academic Level: Elective Course	المستوى الأكاديمي: مقرر اختياري
Scientific department: Pharmaceutics	القسم العلمي: الصيدلانيات
Head of Department: **Prof. Dr. Irhan Ibrahim Abu Hashim**	رئيس القسم: أ.د/ ارهان ابراهيم ابو هاشم
Course Coordinator: **Noha Mohamed Saleh Marey**	منسق المقرر د/نهى محمد صالح المتولي مرعي

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmaceutics
Department supervising the course	Pharmaceutics
Program on which the course is given	**B. Pharm. (Modified Bylaw) (Clinical Pharmacy)**
Academic Level	**Level 4, First semester, 2023-2024**
Date of course specification approval	**20/9/2023**

3- Basic Information: Course data:

Course Title	**Cosmetic preparations**
Course Code	**PTE14**
Prerequisite	**Registration**
Teaching Hours: Lecture	**1**
Practical	**1**
Total Credit Hours	**2 (Credit H)**

4- Course Aims:

2.1. Knowing the basic principles and techniques of compounding, dispensing and evaluation of different cosmetic preparations.

2.2. Enumerating the different properties and classification of each cosmetic preparation.

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 cosmetic products and bases in their preparation.
1.1.3	1.1.3.1	Classify different methods of preparation of various cosmetic products.
	1.1.3.2	Identify the different methods of evaluation of some cosmetic preparations.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Organize the basic concepts involved in the formulation and manufacture of cosmetic products.
	2.2.1.2	Specify the factors affecting on the preparation and evaluation of different cosmetic preparations.
2.2.4	2.2.4.1	Apply quality control and quality assurance of all the processes of pharmaceutical formulations and their applications for cosmetic delivery systems evaluation such as shampoo, fragrance, nail lacquers and eye makeup.

DOMAIN 4: PERSONAL PRACTICE

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

4.1.2	**4.1.2.1**	Share decision-making activities with other team members and communicate verbally in a scientific language.
4.3.2	**4.3.2.1**	Practice self-learning to improve professional skills

4- Course Contents

Week No.	Topics	Credit Hours
1	Definition of cosmetics, types of cosmetics. Skin care products.	1
2	Antiperspirant and deodorants	1
3	Moisturizers	1
4	Anti-dandruff preparations	1
5	Cleansers	1
6	Hair dyes and Sunscreen preparations	1
7	Tanning	1
8	Eye make up **(Mid-Term Exam)**	1
9	Dentifrices	1
10	Shampoos	1
11	Nail lacquers	1
12	Fragrance preparations	1
13	Discussion of self-learning topic	1
14	**Revision**	1
15	**Final written and oral exam**	-
Week No.	**Practical topics**	**Credit hours**

1	Antiperspirants	1
2	deodorants	1
3	Shaving Creams	1
4	Foundation Creams	1
5	Cleansing Creams	1
6	Toothpastes	1
7	Eye makeup	1
8	**Mid-Term Exam**	-
9	Moisturizer (Hand cream)	1
10	Sunscreen cream	1
11	Acne vulgaris cream	1
12	Shampoo	1
13	**Revision**	1
14	**Practical exam**	-

5- Teaching and Learning Methods:

	Teaching and Learning Method	**Week no.**
1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning	1-14

	• Online learning through My Mans "Mansoura university "as recorded – video lectures • Interactive discussion through My Mans Platform	
2	Self-learning	13
3	Practical session using chemicals and laboratory equipment and/ or tutorials	1-7 9-13
4	Class Activity: Group discussion offline and online.	1-3
5	Problem – based learning and brainstorming	8-9
6	Research assignments	13

6- Student Assessment:

e- Assessment Methods:

1-Written exam	1.1.1.1 / 1.1.3.1/1.1.3.2
2-Practical exam	2.2.1.1 / 2.2.1.2/2.2.4.1/ 4.3.2.1
3-Oral	4.1.2.1
4-Periodical (mid-term and class work)	4.1.2.1 / 4.3.2.1/ 1.1.1.1/ 1.1.3.1/1.1.3.2

f- Assessment schedule

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

Other assessment		

g- Weighing of assessments

1	**Midterm and Practical exam**	25%
2	**Final-term examination**	75%
3	**Other types of assessment**	-------
Total		100%

7- Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, Platform
Laboratory facilities	Water baths, glassware, chemicals, electronic balance
Library	Books and Pharmacopoeia

8- Matrix of knowledge and skills of the course

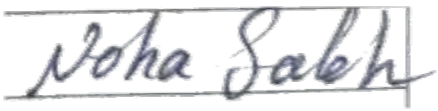
Study Week	**Course contents**	**Outcomes Domains / Key elements**							
		Domain 1			**Domain 2**			**Domain 4**	
		1.1.1.1	**1.1.3.1**	**1.1.3.2**	**2.2.1.1**	**2.2.1.2**	**2.2.4.1**	**4.1.2.1**	**4.3.2.1**
1	Definition of cosmetics, types of cosmetics. Skin care products.	√	√	√	√	√	√	√	√
2	Antiperspirant and deodorants	√	√	√	√	√	√	√	√
3	Moisturizers	√	√	√	√	√	√	√	√

4	Anti-dandruff preparations	√	√	√		√	√	√		√	√
5	Cleansers	√	√	√		√	√	√		√	√
6	Hair dyes and Sunscreen preparations	√	√	√		√	√	√		√	√
7	Tanning	-	-	-		-	-	-		-	-
8	Eye make up **(Mid-Term Exam)**	√	√	√		√	√	√		√	√
9	Dentifrices	√	√	√		√	√	√		√	√
10	Shampoos	√	√	√		√	√	√		√	√
11	Nail lacquers	√	√	√		√	√	√		√	√
12	Fragrance preparations	√	√	√		√	√	√		√	√
13	Discussion of self-learning topic	√	√	√		√	√	√		√	√
14	**Revision**	√	√	√		√	√	√		√	√
1-7 **9-13**	**Practical topics** Antiperspirant and deodorants, Creams (Shaving, foundation, and cleansing), Toothpastes, Eye makeup, Moisturizer (Hand cream), Sunscreen cream ,									√	√

	Acne vulgaris cream , Shampoo										

9- 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.	Harrys cosmeticology, Martin M Rieger (Editor). Publisher: chemical publisher, chemical publishing company ,8th edition, May 2000.	Book
4.	Handbook of cosmetic science and technology, the theory and practice of cosmeceuticals, Patel Hardik k., Suthar Rajnikant M., Patel Meghana H, Paperback, 2015.	Book
5.	The chemistry and manufacture of cosmetics M, Schlossman (editor), Allureds publishing crop USA vols 1, 2001.	Book
6.	https://www.researchgate.net/publication/325023106 http://www.sciencedirect.com/ http://www.google.com / http://www.pubmed.com https://www.ekb.eg	Websites

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

Date: 20/9/2023