



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program

14

توصيف مقررات

برنامج الصيدلة الاكلينيكية لائحة فارم دي

للعام الجامعي 2024/2023



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024



بكالوريوس الصيدلة الإكلينيكية (فارم د-Pharm D)
Course Specification

Academic year: 2023/2024

Course name: Pharmacotherapy of endocrine and renal disorders	اسم المقرر: العلاج الدوائي لأمراض الغدد الصماء وأمراض الكلى
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية و الممارسة الصيدلانية
Head of Department: Assoc. Prof. Dr/ Mohamed El Hussein E. Shams	رئيس القسم : أ.د/ محمد الحسيني شمس
Course Coordinator: Dr. Mona Mohammed Eltamalawy	منسق المقرر : د/ مني محمد الطملاوي



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

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. (PharmD) (Clinical Pharmacy)
Academic Level	Fifth level, first semester, 2023/2024
Date of course specification approval	7 th September 2023

1- Basic Information: Course data:

Course Title	Pharmacotherapy of endocrine and renal Disorders
Course Code	PP 906
Prerequisite	Pharmacology I
Credit Hours: Lecture	2
Practical sessions using tutorial	1
Total Credit Hours	3 (Credit H)

2- Course Aims:

This course includes the clinical presentation, diagnosis, and application of pharmaceutical care plans in different endocrinologic disorders and different renal disorders and related fluid and electrolyte disturbances. The course develops the students' ability to design, monitor, refine safe and cost-effective treatment plans and provide appropriate information to patient, caregivers, and health professionals.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024

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 endocrinologic disorders and renal disorders.
1.1.6	1.1.6.1	Recognize different scientific resources to make evidence-based informed professional decisions.
1.1.10	1.1.10.1	Identify the role of different pharmacological and nonpharmacological options in management of various disorder affecting endocrine glands and renal system.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Formulate pharmaceutical care plans for management of endocrine and renal disorders and drug-related problems with reference to their particulate health problems and special considerations.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

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 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	Share with healthcare professionals in formulary management activities related to management of endocrinologic disorders and renal disorders.
4.3.2	4.3.2.1	Practice self-learning to improve professional skills



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

4- Course Contents

Week No	Topics	Lectures credit hours
1.	Diabetes Mellitus: A.Type-I DM <i>Differentiate between the diagnostic and classification criteria for type 1 and type 2 diabetes, Review the various therapeutic agents used in Diabetes Mellitus, Recommend appropriate therapeutic management for secondary complications from Diabetes Mellitus disorders, Role of clinical pharmacist in patient counselling regarding disease and drug therapies.</i>	2 hours
2.	Diabetes Mellitus: B.Type-II DM <i>Review the various therapeutic agents used in Type II Diabetes Mellitus, Recommend appropriate therapeutic management for secondary complications from Diabetes Mellitus disorders, Role of clinical pharmacist in patient counselling regarding disease and drug therapies.</i>	2 hours
3.	Introduction to Renal Disease <i>Key Definitions, estimation of Kidney function</i> Chronic Kidney Disease <i>Pathophysiology, clinical presentation, Stages of CKD, Pharmacological and non-pharmacological management</i>	2 hours
4.	Complications of CKD <i>Anemia, Electrolyte disturbance and metabolic acidosis, Bone mineral diseases and secondary hyperparathyroidism</i>	2 hours
5.	Thyroid Disorder: A. Hyperthyroidism <i>Differentiate between the diagnostic and classification criteria for thyroid disorders, Review the various therapeutic agents used in thyroid disorders, select appropriate treatment and monitoring options for a given patient presenting with one of the previously mentioned in thyroid disorders, Recommend appropriate therapeutic management for secondary complications from thyroid disorders, Role of clinical pharmacist in patient counselling regarding disease and drug therapies.</i>	2 hours



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

6.	Thyroid Disorder: B. Hypothyroidism <i>Review the various therapeutic agents used in hypothyroid disorders, select appropriate treatment and monitoring options for a given patient presenting with one of the previously mentioned in thyroid disorders, Recommend appropriate therapeutic management for secondary complications from thyroid disorders, Role of clinical pharmacist in patient counselling regarding disease and drug therapies</i>	2 hours
7.	Acute Kidney Injury <i>Pathophysiology, clinical presentation, Classifications of AKI, Pharmacological and non-pharmacological management</i>	2 hours
8.	Drug Induced Kidney Injury <i>Categorize AKI, Classify the stage, identify risk factors for AKI, formulate preventive strategies to decrease the risk of AKI in specific patient populations, formulate a therapeutic plan to manage AKI.</i>	2 hours
9.	Parathyroid Disorder <i>Differentiate between the diagnostic and classification criteria for parathyroid disorders, Review the various therapeutic agents used in parathyroid disorders, select appropriate treatment and monitoring options for a given patient presenting with one of the previously mentioned in thyroid disorders</i>	2 hours
10.	Parathyroid Disorder. <i>Recommend appropriate therapeutic management for secondary complications from thyroid disorders, Role of clinical pharmacist in patient counselling regarding disease and drug therapies</i>	2 hours
11.	Renal Replacement Therapy <i>Indications, types, advantages and disadvantages, management of complications.</i>	2 hours
12.	Modifying Drug Therapy <i>Contraindicated drugs, drugs that need increased interval or decreasing the dose.</i>	2 hours
13.	Kidney Failure (Self-learning)	2 hours



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

	https://www.niddk.nih.gov/health-information/kidney-disease/kidney-failure	
14	Revision and quiz	2 hours
15	Start of final written exam	-
Week No	Topics	Practical credit hours
1.	Patient Education & Calculation of Insulin	1
2.	Case study: Type-I Diabetes Mellitus	1
3.	Case study: Chronic Kidney Disease	1
4.	Case study: Complication of CKD Anemia	1
5.	Case study: Type-II Diabetes Mellitus	1
6.	Case study: Hyperthyroidism	1
7.	Case study: Complication of CKD Mineral and Bone Disorder	1
8.	Mid-term exam	-
9.	Case study: Complication of CKD Secondary Hyperparathyroidism	1
10.	Case study: Complications of CKD Electrolyte disturbance and Metabolic Acidosis	1
11.	Case study: Hypothyroidism	1
12.	Case study: Acute Kidney Injury	1
13.	Kidney Disease & Diabetes Education (Student's project)	1
14.	Practical exam	1



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

5- Teaching and Learning Methods:

	Teaching and Learning Methods:	Weeks No.	Key elements to be addressed
5.1	Hybrid learning and computer aided learning: <ul style="list-style-type: none"> • Advanced Lectures using Data show, power Point presentations and group discussions • Distance learning <ul style="list-style-type: none"> • Online learning through Mymans "Mansoura University" as recorded – video lectures • Inter active discussion through Mymans 	1-6,8-14 7,13	1.1.1.1, 1.1.6.1, 1.1.10.1, 2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.1.2.1.
5.2	Self-learning	13	4.1.1.1, 4.3.1.1, 4.3.2.1
5.3	Practical sessions using tutorials	1-14	2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1
5.4	Class Activity: Group discussion offline and online	1-13	4.2.1.1 4.2.2.1 4.3.1.1
5.5	Case study		4.3.2.1



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

6- Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.1.1, 1.1.6.1, 1.1.10.1, 2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
2-Tutorial exam applying OSPE	1.1.1.1, 1.1.6.1, 1.1.10.1, 2.4.3.1, 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, 1.1.6.1, 1.1.10.1, 2.4.3.1, 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, 1.1.6.1, 1.1.10.1, 2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1

• Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	7-9 th week
Assessment 2	Practica examination	14 th week
Assessment 3	Written	Start from 15 th week
Assessment 4	Oral	Start from 15 th week

• Weighing of assessments

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

7- Facilities required for teaching and learning

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



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

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.	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.	Koda-Kimble and Young's Applied Therapeutics: The Clinical Use of Drugs. B.K. Alldredge, R.L. Corelli, M.E. Ernst, B.J. Guglielmo, P.A. Jacobson, W.A. Kradjan, and B.R. Williams; Lippincott Williams & Wilkins, 12 th Ed., (2023).	Essential Book
5.	Kidney Disease: Improving Global Outcomes (KDIGO) Blood Pressure Work Group. KDIGO 2021 Clinical Practice Guideline for the Management of Blood Pressure in Chronic Kidney Disease, <i>Kidney Int</i> 2021;99(3S):S1-S87,	Guidelines
6.	Kidney Disease: Improving Global Outcomes (KDIGO) Diabetes Work Group. KDIGO 2020 Clinical Practice Guideline for Diabetes Management in Chronic Kidney Disease, <i>Kidney Int.</i> 2020;98(4S):S1-S115.	Guidelines
7.	Karen Shapiro, Bombatch C., Garrett S. D, Veverka A., Brian S., Davis C., Drew A., Wellings F.. NAPLEX Course Book 2022 edition. USA. RxPREP, Inc., 2022.	Essential book
8.	H. Matt, V. Andrea, F. Annette, <i>et al.</i> Applied Therapeutics. The Clinical Use of Drugs. Eleventh edition. USA. Wolters Kluwer. 2018	Essential Book
9.	<ul style="list-style-type: none">• https://www.ekb.eg/• http://online.lexi.com• https://accesspharmacy.mhmedical.com/• http://www.sciencedirect.com/• http://www.Scholar.google.com/• http://www.pubmed.com/	Websites



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

Renal Replacement Therapy	√	√	√		√		√	√	√	√		
Complications of CKD: Electrolyte disturbance and metabolic acidosis	√	√	√		√		√	√	√	√		
Kidney Failure (Self learning)											√	
Tutorial topics												
Patient Education & Calculation of Insulin	√	√	√		√		√	√	√	√	√	
Case study: Type-I Diabetes Mellitus	√	√	√		√		√	√	√	√	√	
Case study: Chronic Kidney Disease	√	√	√		√		√	√	√	√	√	
Case study: Complication of CKD: Anemia	√	√	√		√		√	√	√	√	√	
Case study: Type-II Diabetes Mellitus	√	√	√		√		√	√	√	√	√	
Case study: Hyperthyroidism	√	√	√		√		√	√	√	√	√	
Case study: CKD-Mineral and Bone Disorder	√	√	√		√		√	√	√	√	√	



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

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

A) Theoretical part:

Course Contents	Teaching and Learning methods						Assessment methods			
	Lecture	Hybrid leaning	Comp. aided learning	Lab sessions	Case study	Self-learning	Corse Work	Practical/ Tutorial	Written	Oral
Diabetes Mellitus: A.Type-I DM	√				√		√		√	√
Diabetes Mellitus: B.Type-II DM	√				√		√		√	√
Introduction to Renal Disease	√				√		√		√	√
Chronic Kidney Disease	√				√		√		√	√
Thyroid Disorder: A. Hyperthyroidism	√				√				√	√
Thyroid Disorder: B. Hypothyroidism	√				√				√	√
Complications of CKD: Anemia		√			√				√	√
Complications of CKD: Bone mineral diseases and secondary hyperparathyroidism	√				√				√	√
Parathyroid disorders: Part 1	√				√				√	√
Parathyroid disorders: Part 2	√				√				√	√
Renal replacement therapy	√				√				√	√
Complications of CKD: Electrolyte disturbance and metabolic acidosis	√				√				√	√
Kidney Failure (Self learning)		√				√			√	√



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

B) Practical part:

Course Contents	Teaching and Learning methods						Assessment methods			
	Lecture	Hybrid learning	Comp. aided learning	Lab sessions	Case study	Self-learning	Corse Work	Tutorial	Written	Oral
Patient Education & Calculation of Insulin				√				√		
Case study: Type-I Diabetes Mellitus				√				√		
Case study: Chronic Kidney Disease				√				√		
Case study: Complication of CKD: Anemia				√				√		
Case study: Type-II Diabetes Mellitus				√				√		
Case study: Hyperthyroidism				√				√		
Case study: CKD-Mineral and Bone Disorder				√				√		
Case study: CKD- Secondary Hyperparathyroidism				√				√		
Case study: Hypothyroidism				√				√		
Case study: Complications of CKD: Electrolyte disturbance and Metabolic Acidosis				√				√		
Case Study: Acute Kidney Injury				√				√		



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

Kidney Disease & Diabetes Education (Student's project)				√				√		
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Course Coordinator	Dr. Mona Eltamalawy Mona Eltamalawy
Head of Department	Prof. Dr. Mohamed Elhusseiny <i>Mohamed Elhusseiny</i> Approval Date: 07/9/2023



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024



Pharm D) – بكالوريوس الصيدلة الإكلينيكية (فارم د –

Course Specification Academic year: 2023/2024

Course name: Pharmacotherapy of cardiovascular disease (PP 907)	اسم المقرر: العلاج الدوائي وأمراض القلب
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy & Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية و الممارسة الصيدلانية
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



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024

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. (PharmD) (Clinical Pharmacy)
Academic Level	Fifth level, first semester, 2023-2024
Date of course specification approval	7/9/2023

A. Basic Information: Course data:

Course Title	Pharmacotherapy of Cardiovascular Disease
Course Code	PP 907
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.



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

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 in

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Formulate pharmaceutical care plans for cardiovascular disorders and drug related problems with reference to their particulate health problems and special considerations

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.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

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	Hypertension. (Part 1) <ul style="list-style-type: none">● Essential hypertension● Secondary hypertension● Classification of Blood Pressure in Adults● Non-pharmacological measurement● Pharmacotherapy	2
2	Hypertension. (Part 2) <ul style="list-style-type: none">● Pharmacotherapy (cont.)● Compelling conditions	2



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

3	Chronic heart failure <ul style="list-style-type: none">● Pathophysiology● Clinical presentation	2
4	Chronic heart failure <ul style="list-style-type: none">● Management of chronic heart failure.	2
5	Acute decompensated heart failure <ul style="list-style-type: none">● Pathophysiology● Clinical presentation● Management of acute decompensated heart failure.	2
6	Stable ischemic heart disease. <ul style="list-style-type: none">● Pathophysiology● Clinical presentation● Treatment of stable ischemic heart disease	2
7	Acute coronary syndrome-1 <ul style="list-style-type: none">● Pathophysiology and Types of acute coronary syndrome	2
8	Acute coronary syndrome-2 <ul style="list-style-type: none">● Treatment of acute coronary syndrome	2
9	Dyslipidemia-1 <ul style="list-style-type: none">● Types of dyslipidemia● Non-pharmacological management	2
10	Dyslipidemia -2 Pharmacological management of dyslipidemia	2
11	Venous thromboembolism-1 <ul style="list-style-type: none">● Pathophysiology● Non-Pharmacological management of VTE	2



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

12	Venous thromboembolism-2 • Pharmacological management of VTE	2
13	Pharmacotherapy of stroke Types of stroke(self learning)	2
14	Revision and quiz	2
15	Start of final written exam	--
Week No.	Tutorial topics	Credit hours
1.	Introduction to practical course, general instructions and methods of assessment	1
2.	Case presentation: Hypertension	1
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: deep vein thrombosis	1
11.	Case presentation: pulmonary embolism	1
12.	Case presentation: stroke	1
13.	Revision and Group project: Pulmonary arterial hypertension prevention	1
14.	Practical exam	-



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

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 <ul style="list-style-type: none"> ● Online learning through mymans "Mansoura University" as recorded – video lectures ● Inter active discussion through Mymans 	Week 1-14	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 13	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 5-14	4.1.1.1, 4.3.2.1,
5.5	Problem – based learning and brainstorming	Week 5-14	4.1.1.1, 4.3.2.1.
5.6	Research assignments	Week 1-14	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:

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



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

a- Assessment schedule

Assessment 1	Periodical (Mid-term exam)	Week 7-9
Assessment 2	Tutorial examination	14 th 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%



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024

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 staff 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, 11 th edition, 2020	Essential Book
4.	Caitlin M Gibson, 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



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

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:											
	Hypertension	√	√	√			√	√			
	Hypertension	√	√	√			√	√			
	Chronic heart failure	√	√	√			√	√			
	Chronic heart failure	√	√	√			√	√			
	Acute decompensated heart failure	√	√	√			√	√			
	Stable ischemic heart disease.	√	√	√			√	√			
	Acute coronary syndrome-1	√	√	√			√	√			



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

Acute coronary syndrome-2	√	√	√				√	√		
Dyslipidemia-1	√	√	√				√	√		
Dyslipidemia-2	√	√	√				√	√		
Venous thromboembolism-1	√	√	√				√	√		
Venous thromboembolism-2	√	√	√				√	√		√
Pharmacotherapy of stroke	√	√	√				√	√		√
Revision and quiz	√	√	√				√	√		√
Practical topics										
Introduction to practical					√	√	√	√	√	√



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

course, general instructions and methods of assessment													
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.				√	√		√	√		√		√	
Mid-term exam													
Case presentation: Dyslipidemia				√	√		√	√		√		√	



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

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

9.2: Matrix 2. between course contents, methods of learning and assessment

A) Theoretical Part:

Course Contents	Teaching and Learning Methods							Assessment methods			
	Lecture	Hybrid learning	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/Tutorial	Written	Oral
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	√	√			√		√			√	√
Course Contents	Teaching and Learning Methods							Assessment methods			
	Lecture	Hybrid learning	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/Tutorial	Written	Oral
Introduction to practical course, general instructions and methods of assessment				√		√			√		
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.				√		√			√		
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 <i>Mohamed Elhusseiny</i> Approval date: 7/9/2023



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024

بكالوريوس الصيدلة الإكلينيكية (فارم دي – Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Biotechnology	اسم المقرر : التقنية الحيوية
Academic Level: Five	المستوى الأكاديمي :الخامس
Scientific department: Microbiology and immunology	القسم العلمي : الميكروبيولوجيا و المناعة
Head of Department: Prof. Dr. El Sayed E. Habib	رئيس القسم : إ.د/ السيد الشربيني حبيب
Course Coordinator: Prof. Mona I. Shaaban	منسق المقرر: منى ابراهيم شعبان



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

University	Mansoura
Faculty	Pharmacy
Department offering the course	Microbiology and immunology
Department supervising the course	Microbiology and immunology
Program on which the course is given	B. Pharm. (Clinical Pharmacy) (Pharm D)
Academic Level	Fifth level, First semester, 2023-2024
Date of course specification approval	10/9/2023

A. Basic Information: Course data:

Course Title	Biotechnology
Course Code	PM 906
Prerequisite	Pharmaceutical Microbiology and Antimicrobials
Teaching credit Hours: Lecture	2
: Practical	1
Total Credit Hours	3

B. Professional Information:

1.Course Aims:

This course enables the students to:

- Have the knowledge about the use of microorganisms in different fields of biotechnology.
- Be familiar with different fermentation processes and their products.
- Detect and monitor genetically engineered M.O and its use in making protein of interest or drug
- Recognize the use of recombinant DNA technology in the pharmaceutical and medical fields.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

- Understand the basics of gene therapy and its applications in the treatment of genetic disorders.
- Identify bioremediation and its applications.

2- Course k. elements:

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

Domain 1- Fundamental Knowledge

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

Domain 2: Professional and Ethical Practice

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



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

Domain 3: Pharmaceutical Care

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

Domain 4: Personal Practice:

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

3- Course Contents:

A) Theoretical part

Week No.	topics	Hours
1	Genetic engineering and its applications	2
2	Recombinantn DNA technology	2
3	Manipulation of living organisms to produce new products	2
4	DNA manipulation techniques (southern, western, northern and microarray)	2
5	Monoclonal antibodies	2
6	Gene therapy and its applications	2



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

7	Introduction to Biotechnology and Media composition	2
8	Fermentation system	2
9	Solid State fermentation (SSF)	2
10	Products of Fermentation Process	2
11	Application of Fermentation Process I	2
12	• Application of Fermentation Process II	2
13	Bioremediation and its application	2
14	Revision and quiz	2
15	Start of Final written and oral exam	--

A) Practical part

Week No.	Topics	Hours
1	Topic 1: Isolation of soil bacteria and Identification and Examination of soil micro-organisms	1
2	Topic 2: Identification and Examination of soil micro-organisms	1
3	Topic 3: Identifying Antibiotic Producing Microorganisms from Soil	1
4	Topic 4: Antimicrobial spectrum of Streptomyces	1
5	Topic 5: Mutation	1
6	Topic 6: Polymerase Chain Reaction(PCR)	1
7	Topic 7: Gel electrophoresis	1
8	Mid-term exam	-



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

9	Topic 8: Recombinant DNA technology	1
10	Topic 9: SDS-PAGE	1
11	Topic 10: Western blot	1
12	Topic 11: Northern and southern blot part1	1
13	Topic 12: Northern and southern blot part2	1
14	Sheet and practical exam	1

4- Teaching and Learning Methods:

No	Teaching and Learning Methods	week	K. elements to be addressed
4.1	Lectures	1-14	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (3.2.3.1), (3.2.3.2), (4.1.2.1), (4.2.1.1), (4.2.2.1), (4.3.2.1)
4.2	Inter active discussion through My Mans	13	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (3.2.3.1), (3.2.3.2), (4.1.2.1), (4.2.1.1), (4.2.2.1), (4.3.2.1)
4.3	Practical session using chemicals and laboratory equipment and/ or tutorials	1-14	(1.1.1.1), (1.1.2.1), (1.1.3.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (4.1.2.1), (4.2.1.1), (4.2.2.1), (4.3.2.1)
4.4	Distance learning: On line learning through My mans "Mansoura university "	1-11	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (4.1.2.1), (4.2.1.1)
4.5	Demos	1-11	(1.1.1.1), (1.1.2.1), (1.1.3.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (4.1.2.1), (4.2.1.1), (4.2.2.1), (4.3.2.1)
4.6	Problem-based learning and brainstorming	1-13	(3.2.3.1), (4.2.1.1), (4.2.2.1), (4.3.2.1)



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	K elements to be assessed
1- Periodical (Mid-term exam) / Course work	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (3.2.3.1), (4.2.1.1), (4.3.2.1)
2-Practical exam applying OSPE	(1.1.2.1), (1.1.3.1), (1.1.7.2), (2.2.2.1), (2.2.3.1), (4.1.2.1), (4.2.1.1)
3-Written exam	(1.1.1.1), (1.1.2.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.2.1), (2.2.3.1), (3.2.3.1), (3.2.3.2), (4.2.1.1)
4-Oral	(1.1.1.1), (1.1.2.2), (1.1.3.1), (1.1.7.1), (1.1.7.2), (2.2.1.1), (2.2.3.1), (3.2.3.1), (3.2.3.2), (4.2.1.1)

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	7-9 th week
Assessment 2	Practical examination	14 th week
Assessment 3	Written exam	Start from 15 th week
Assessment 4	Oral exam	Start from 15 th week

c. Weighing of assessments

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

6- Facilities required for teaching and learning

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



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

7- 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.	Gilmore BF, Denyer SP, editors. Hugo and Russell's pharmaceutical microbiology. John Wiley & Sons; 2023.	Book
4.	Walsh, G. (2013). Pharmaceutical Biotechnology: Concepts and Applications. E book.	Book
5.	- Sue Carson, Heather Miller, Melissa Srougi, D. Scott Witherow (2019) Molecular Biology Techniques, A Classroom Laboratory Manual, 4th Edition , Academic Press	



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

7	<ol style="list-style-type: none">1. https://en.wikipedia.org/wiki/Industrial_fermentation2. https://www.wiley.com/en-us/Principles+and+Applications+of+Fermentation+Technology-p-97811194604803. https://bioprocessing.weebly.com/types-of-fermenters.html4. https://biologyreader.com/fermentor.html5. Front. Sustain. Food Syst., 09 August 2019 https://doi.org/10.3389/fsufs.2019.000636. https://link.springer.com/chapter/10.1007/978-94-017-0661-2_2 https://en.wikipedia.org/wiki/Industrial_fermentation7. https://www.wiley.com/en-us/Principles+and+Applications+of+Fermentation+Technology-p-97811194604808. https://bioprocessing.weebly.com/types-of-fermenters.html9. https://biologyreader.com/fermentor.html10. Front. Sustain. Food Syst., 09 August 2019 https://doi.org/10.3389/fsufs.2019.0006310. https://link.springer.com/chapter/10.1007/978-94-017-0661-2_2	websites
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Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

8- Matrix

Matrix 1. Course contents and course key elements

A) Theoretical part:

Course contents / K. elements	Domain 1						Domain 2			Domain 3		Domain 4			
	1.1.1.1	1.1.2.1	1.1.3.2	1.1.4.3	1.1.5.7	1.1.6.2	2.2.1.1	2.2.2.1	2.2.3.3	3.2.3.1	3.2.3.2	4.1.2.1	4.2.1.1	4.2.2.1	4.3.2.1
Genetic engineering and its applications		✓				✓		✓		✓			✓	✓	✓
Recombinant DNA technology						✓		✓		✓			✓	✓	✓
Manipulation of living organisms to produce new products						✓		✓		✓			✓	✓	✓
DNA manipulation techniques (southern, western, northern and		✓							✓					✓	



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

microarray)																				
Monoclonal antibodies		✓									✓									
Gene therapy and its applications						✓						✓							✓	
Introduction to Biotechnology and Media composition	✓	✓							✓										✓	
Fermentation system				✓					✓										✓	
TSolid State fermentation (SSF)				✓					✓										✓	
Products of Fermentation Process					✓				✓										✓	✓
Application of Fermentation Process I					✓				✓										✓	✓
• Application		✓			✓				✓										✓	✓



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

of Fermentation Process II																	
• Bioremediation and its application																	
Bioremediation and its application						✓			✓						✓	✓	

B) Practical part:

Course	Domain 1	Domain 2	Domain 3	Domain 4
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**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

contents / K. elements	1.1.1	1.1.2	1.2.2	1.3.1	1.7.1	1.7.2	2.2.1.1	2.2.2.1	2.2.3.1	3.2.3.1	3.2.3.2	3.2.3.3	4.1.2.1	4.2.2.1	4.2.2.2	4.3.3.1
Isolation of soil bacteria and Identification and Examination of soil micro-organisms	✓						✓						✓	✓	✓	✓
Identification and Examination of soil micro-organisms	✓						✓						✓	✓	✓	✓
Identifying Antibiotic Producing Microorganisms from Soil				✓		✓	✓						✓	✓	✓	✓
Antimicrobial spectrum of Streptomycetes				✓		✓	✓						✓	✓	✓	✓



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

Mutation								✓					✓	✓	✓	✓
Polymerase Chain Reaction (PCR)	✓								✓				✓	✓	✓	✓
Gel electrophoresis													✓	✓	✓	✓
Recombinant DNA technology	✓					✓		✓	✓				✓	✓	✓	✓
SDS-PAGE	✓					✓							✓	✓	✓	✓
Western blot	✓					✓							✓	✓	✓	✓
Northern and southern blot	✓					✓							✓	✓	✓	✓
Northern and southern blot	✓					✓							✓	✓	✓	✓

b. Course contents, learning methods and assessment:

A) Theoretical part:



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

Course Content	Teaching and Learning methods						Course Work mid-term Exam)
	Lectures	Inter active discussion	Practical sessions	Distance learning	Demos	Problems-based learning	
Topic 1; Genetic engineering and its applications	✓	✓					✓
Topic 2; Recombinantn DNA technology	✓	✓					✓
Topic 3; Manipulation of living organisms to produce new products	✓	✓				✓	✓
Topic 4; DNA manipulation techniques (southern, western, northern and microarray)	✓	✓				✓	✓
Topic 5; Monoclonal antibodies	✓	✓					
Topic 6; Gene therapy and its applications	✓	✓					
Topic 7: Introduction to Biotechnology and Media composition	✓	✓				✓	
Topic 8: Fermentation system	✓	✓				✓	
Topic 9: Solid State fermentation (SSF)	✓	✓				✓	
Topic 10: Products of Fermentation Process	✓	✓				✓	
Topic 11: Application of Fermentation Process I	✓	✓				✓	
Topic 12: • Application of Fermentation Process II Bioremediation and its application	✓	✓				✓	
Topic 13: Bioremediation and its application		✓		✓		✓	



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

B) Practical part:

Course Content	Teaching and Learning methods						Ass
	Lectures	Inter active discussion	Practical sessions	Distance learning	Demos	Problems-based learning	Corse Work
Topic 1: Isolation of soil bacteria and Identification and Examination of soil micro-organisms			✓	✓	✓	✓	✓
Topic 2: Identification and Examination of soil micro-organisms			✓	✓	✓	✓	✓
Topic 3: Identifying Antibiotic Producing Microorganisms from Soil			✓	✓	✓	✓	✓
Topic 4: Antimicrobial spectrum of Streptomyces			✓	✓	✓	✓	✓
Topic 5: Mutation			✓	✓	✓	✓	✓
Topic 6: Polymerase Chain Reaction(PCR)			✓	✓	✓	✓	✓
Topic 7: Gel electrophoresis			✓	✓	✓	✓	✓
Topic 8: Recombinant DNA technology			✓	✓	✓	✓	✓
Topic 9: SDS-PAGE			✓	✓	✓	✓	✓
Topic 10: Western blot			✓	✓	✓	✓	✓
Topic 11: Northen and southern blot part1			✓	✓	✓	✓	✓
Topic 12: Northen and southern blot part2			✓	✓	✓	✓	✓

Course Coordinator	Pro. Mona Shaaban Mona Shaaban
Head of Department	Prof. Dr. El-Sayed E. Habib

Date:10 /9/2023



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024



بكالوريوس الصيدلة الإكلينيكية (فارم د – Pharm D)

Course Specification

Academic year: 2023-2024

Course name: Pharmacotherapy of Neuropsychiatric Diseases	اسم المقرر: العلاج الدوائي للأمراض العصبية والنفسية
Academic Level: Level five	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية و الممارسة الصيدلانية
Head of Department: Prof. Dr/ Mohamed Elhusseiny Shams	رئيس القسم: أ.د/ محمد الحسيني شمس



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

Course Coordinator: Assoc. Prof. Dr/ Moetaza Mahmoud	منسق المقرر: أ.م.د/ معتزة محمود
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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. (PharmD) (Clinical Pharmacy)
Academic Level	Fifth level, first semester, 2023-2024
Date of course specification approval	7 th September, 2023

A- Basic Information: Course data:

Course Title	Pharmacotherapy of Neuropsychiatric Diseases
Course Code	PP 908
Prerequisite	Pharmacology-III
Credit Hours: Lecture	2



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

Practical	1
Total Credit Hours	3 (Credit H)

B. Professional Information:

1. Course Aims:

The course aims to educate students about: pathophysiology, clinical interpretation, treatment of neuropsychiatric diseases such as schizophrenia, depression, anxiety, parkinsonism, migraines, dementia, and Alzheimer's disease.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024

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 neuropsychiatric diseases.
1.1.4	1.1.4.1	Recognize the different pharmacological categories of drugs used in neuropsychiatry, 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 in neuropsychiatry disease.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Formulate pharmaceutical care plans for management of neuropsychiatric disorders and drug-related problems with reference to their particulate health problems and special considerations.

DOMAIN 3: PHARMACEUTICAL CARE

Program K. element no.	Course K. element no.	Course K. element
3.2.1	3.2.1.1	Apply the monitoring plan for psychiatric drug dose adjustment in liver disease.
3.2.5	3.2.5.1	Provide proper disease and drug counseling for patients with psychiatric disorders.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

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.

3- Course Contents

Week No.	Lecture Topics	Lecture Credit Hours
1	Schizophrenia Etiology and pathophysiology clinical presentation,	2
2	Schizophrenia non- pharmacological management, pharmacological management.	2
3	Depression Etiology and pathophysiology clinical presentation	2
4	Depression non- pharmacological management pharmacological management	2



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

5	Anxiety Etiology and pathophysiology clinical presentation, non- pharmacological management pharmacological management	2
6	Seizure disorders Etiology and pathophysiology clinical presentation	2
7	Seizure disorders non- pharmacological management pharmacological management.	2
8	Parkinsonism Etiology and pathophysiology clinical presentation, non- pharmacological management pharmacological management.	2
9	Migraines Etiology and pathophysiology clinical presentation, non- pharmacological management pharmacological management	2
10	Attention-deficit/hyperactivity disorder. Etiology and pathophysiology clinical presentation, non- pharmacological management pharmacological management	2
11	Alzheimer's disease Etiology and pathophysiology clinical presentation, non- pharmacological management pharmacological management	2
12	Sleep disorders Etiology and pathophysiology clinical presentation, non- pharmacological management pharmacological management	2
13	Stroke	2



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

	Etiology and pathophysiology clinical presentation, management	
14	Revision and quiz	2
15	Final theoretical exam	-

Week No.	Practical topics	Credit hours
1	Case presentation: Schizophrenia	1
2	Case presentation: Depression	1
3	Case presentation: Depression	1
4	Case presentation: Anxiety	1
5	Case presentation: Seizure disorders	1
6	Case presentation: Seizure disorders	1
7	Case presentation: Parkinsonism	1
8	Mid-term exam	-
9	Case presentation: migraine	1
10	Case presentation: pain management	1
11	Case presentation: Alzheimer's disease & Group project	1
12	Case presentation: sleep disorders	1
13	Case presentation: stroke	1
14	Tutorial exam	1



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

5- Teaching and Learning Methods:

	Teaching and Learning Methods:	Weeks No.	Key elements to be addressed
5.1	Hybrid learning: 1- Lectures using Data show, power Point presentations 2- Distance learning <ul style="list-style-type: none"> • Online learning through mymans "Mansoura University "as recorded – video lectures • Inter active discussion through My Mans 	Week 1 - 14	1.1.1.1, 1.1.4.1, 1.1.7.1, 3.2.1.1, 3.2.5.1, 4.3.2.1.
5.2	Self-learning	Week 13	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 1 – 13	4.1.1.1, 4.3.2.1
5.5	Problem – based learning and brainstorming	Week 1 – 13	4.1.1.1, 4.3.2.1
5.6	Research assignments	Week 1 – 13	4.1.1.1, 4.3.2.1
5.7	Role play	Week 13	4.1.1.1, 4.3.2.1



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

d. Student Assessment:

- **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 OSPE	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

Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	7-9 th week
Assessment 2	Practical examination and tutorial	14 th week
Assessment 3	Written exam	Start from 15 th week
Assessment 4	Oral exam	Start from 15 th week

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%



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024

7- Facilities required for teaching and learning

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

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.	Dipiro's Pharmacotherapy: A Pathophysiologic Approach. J. DiPiro, R.L. Talbert, G. Yee, G. Matzke, B. Wells, and L.M. Posey; McGraw-Hill, 11 th edition, 2020	Essential Book



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

4.	Jacintha Cauffield, General Psychiatry. 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

9-1. Matrix of knowledge and skills of the course

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
Schizophrenia Etiology and	√	√	√			√	√		



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

pathophysiology clinical presentation,										
Schizophrenia non- pharmacological management, pharmacological management.	√	√	√			√	√			
Depression Etiology and pathophysiology clinical presentation	√						√			
Depression non- pharmacological management	√						√			



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

pharmacological management										
Anxiety	√	√	√				√	√		
Seizure disorders	√	√	√				√	√		
Etiology and pathophysiology clinical presentation										
Seizure disorders non-pharmacological management pharmacological management.		√	√				√	√		



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

Parkinsonism	√	√	√				√	√			
Migraines	√	√	√				√	√			
Dementia	√	√	√				√	√			
Alzheimer's disease	√	√	√					√			
Stroke	√	√	√				√	√		√	
Practical Topics											
Case presentation: Schizophrenia					√	√		√	√	√	√
Case presentation: Depression					√	√		√	√	√	√
Case presentation: Depression					√	√		√	√	√	√



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

Case presentation: Anxiety					√	√		√	√		√	√
Case presentation: Seizure disorders					√	√		√	√		√	√
Case presentation: Seizure disorders					√	√		√	√		√	√
Case presentation: Parkinsonism					√	√		√	√		√	√
Case presentation: migraine					√	√		√	√		√	√
Case presentation:					√	√		√	√		√	√



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

pain management												
Case presentation: Alzheimer's disease & Group project				√	√	√	√	√	√	√	√	√
Case presentation: sleep disorders				√	√	√	√	√	√	√	√	√
Case presentation: stroke				√	√	√	√	√	√	√	√	√



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

Course Contents	Teaching and Learning Methods							Assessment methods			
	Lecture	Hybrid learning	Computer based learning	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/Tutorial	Written	Oral
Schizophrenia Etiology and pathophysiology clinical presentation,	√	√	√		√						
Schizophrenia non-pharmacological management, pharmacological management.	√	√	√		√						
Depression Etiology and pathophysiology clinical presentation	√	√	√		√						
Depression non-pharmacological management pharmacological management	√	√	√		√						
Anxiety	√	√	√		√						



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

Seizure disorders											
Etiology and pathophysiology clinical presentation	√	√	√		√			√			
Seizure disorders											
non-pharmacological management pharmacological management.	√	√	√		√			√			
Parkinsonism	√	√	√		√			√			
Migraines	√	√	√		√			√			
Attention-deficit/hyperactivity disorder.	√	√	√		√						
Alzheimer’s disease	√	√	√		√						
Sleep disorders	√	√	√		√						
Stoke							√				
Final theoretical exam										√	√



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical
Pharmacy Program



Course specification
2023- 2024

B) Practical Part:												
Week No.	Course Contents	Lecture	Teaching and Learning Methods						Assessment methods			
			Hybrid	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/ Tutorial	Written	Oral
	Case presentation: Schizophrenia		√		√	√	√			√		
	Case presentation: Depression		√		√	√	√			√		
	Case presentation: Depression		√		√	√	√			√		
	Case presentation: Anxiety		√		√	√	√			√		
	Case presentation: Seizure disorders		√		√	√	√			√		
	Case presentation: Seizure disorders		√		√	√	√			√		
	Case presentation: Parkinsonism		√		√	√	√			√		
9.	Case presentation: migraine		√		√	√	√			√		
	Case presentation: pain management		√		√	√	√			√		
	Case presentation: Alzheimer's disease & Group project		√		√	√	√		√	√		
	Case presentation: sleep disorders		√		√	√	√			√		
	Case presentation: stroke		√		√	√	√			√		



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

Course Coordinator	Assoc. Prof. Dr. Moetaza Mahmoud <i>Moetaza Soliman</i>
Head of Department	Prof. Dr. Mohamed Elhuseiny Shams <i>Mohamed Elhousseiny</i>

Date: 7 / 9 / 2023



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024



الإكلينيكية (فارم دي) بكالوريوس الصيدلة

Pharm D-Clinical Pharmacy

Course Specification

Academic year: 2023/2024

Course name: Clinical Nutrition	اسم المقرر : تغذية اكلينيكية
Academic Level: 5	الأكاديمي :الخامس المستوى
Scientific department: Biochemistry	القسم العلمي : الكيمياء الحيوية
Head of Department: Dr. Noha M.H. Abdel-Rahman	رئيس القسم : أ.م.د/ نهى منصور حسن عبد الرحمن
Course Coordinator: Prof. Dr. Laila A. Eissa	منسق المقرر : أ.د/ ليلي عيسى



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

University	Mansoura
Faculty	Pharmacy
Department offering the course	Biochemistry
Department supervising the course	Biochemistry
Program on which the course is given	Pharm D-Clinical Pharmacy Program
Academic Level	Fifth level, First semester, 2023-2024
Date of course specification approval	16 th september, 2023

A. Basic Information: Course data:

Course Title	Clinical nutrition
Course Code	PB 905
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.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

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	Formulate pharmaceutical care plans for management of several disorders and drug-related problems with reference to their particulate health problems and special considerations.
2.5.2	2.5.2.1	Identify relevant and necessary evidence-based information about a patient's health-related care needs.



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

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.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Introduction (assessment of nutrition)	1
2	Macronutrients and calculation of calories, Vitamins and minerals (role in metabolism – clinical significance)	1
3	Basal metabolic rate (BMR) - Recommended daily allowance (RDA),energy balance	1
4	Dietary care for patient with hepatic disorders	1
5	Dietary care for patient with renal disorders	1
6	Nutritional requirement for pediatrics	1
7	Dietary care for patients with obesity	1



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

8	Gut microbiota and human health	1
9	Self-learning (cardiac diseases) and nutritional management of diabetes mellitus	1
10	Dietary care for cancer patients	1
11	Dietary care for pregnant and lactation	1
12	Parental nutrition	1
13	Enteral nutrition, Nutrigenomics	1
14	Revision and quiz	1
15	Final written and oral exam	-
Practical topics		
Week No	Topics	No. of hours
1	Assessment of Nutrition	1
2	Diet and digestive system	1
3	Diet and renal Disease	1
4	Diet and Osteoporosis	1
5	Nutrition in celiac disease	1
6	Nutritional requirements during life stages (geriatrics)	1
7	Nutritional requirements during life stages (pediatrics)	1
8	Mid-term exam	-
9	Diet and sport care	1
10	Enteral 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



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

4- Teaching and learning Methods:

No	Teaching and learning Methods	Week	K. elements to be assessed
4.1	Advanced lecture	1-14	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	Hybrid learning: On line learning through My mans "Mansoura university "	1-13	1.1.1.1, 1.1.2.1, 1.1.6.1, 3.1.1.1, 3.2.2.1, 4.1.2.1, 4.2.1.1
4.3	Practical works and tutorials	1-14	2.4.3.1, 2.5.2.1, 3.1.1.1, 3.2.2.1, 4.1.2.1
4.4	Self-learning	9	1.1.1.1, 1.1.2.1, 1.1.6.1, 3.1.1.1, 3.2.2.1, 4.1.2.1, 4.2.1.1
4.5	Case study	4,5,6	1.1.1.1, 1.1.2.1, 1.1.6.1, 2.4.3.1, 3.1.1.1, 3.2.2.1, 4.1.2.1, 4.2.1.1
4.6	Presentation	2-10	1.1.1.1, 1.1.2.1, 1.1.6.1, 3.1.1.1, 3.2.2.1, 4.1.2.1, 4.2.1.1

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,
2-Practical exam	2.4.3.1, 2.5.2.1, 4.1.2.1,
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- Periodical (Mid-term exam) / case study	1.1.1.1, 1.1.6.1, 2.5.2.1,

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	7 th -9 th week
Assessment 2	Practical examination and tutorial	14 th week
Assessment 3	Oral	Start from 15 th week
Assessment 4	Written	Start from 15 th



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

	week
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c. Weighing of assessments

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

6- Facilities required for teaching and learning

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

7- 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, 4 th edition, 2020.	Books
4.	Nutrition for health and health care, Linda Kelly DeBruyne and Kathryn Pinna. Cengage learning. 6 th edition, 2017.	Books
5.	William's basic nutrition and diet therapy, Staci Nix, Elsevier, 16 th edition, 2020	Books
6.	Basic nutrition, Lori A. Smolin, Ph.D. and Mary B. Grosvenor, M.S., R.D., Chelsea house, 3 rd 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



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

6- Matrix 1 of course content versus course k. elements:

7- A) Theoretical part:

Course contents / K. elements	Domain1					Domain2			Domain3		Domain4	
	1.1. 1.1	1.1.2 .1	1.1.4 .1	1.1.5 .1	1.1.6 .1	2.1 .2 1	2.4 .3 1	2.5. 2.1	3.1 .1 1	3.2. 2.1	4.1.2.1	4.2.1. 1
Measures of healthy life style	√						√		√			
Macronutrients and calculation of calories,	√		√		√	√		√	√	√		
Basal metabolic rate (BMR) - Recommended daily allowance (RDA(√		√	√			√		√	√		
Dietary care for patient with renal and hepatic disorders	√	√		√	√				√		√	√
Dietary care for patients with obesity	√		√			√		√	√	√	√	
Nutritional	√	√		√	√	√	√	√	√	√	√	√



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

requirement for pediatrics ,)															
Vitamins and minerals (role in metabolism – clinical significance	√		√		√			√	√						
Gut microbiota and human health	√	√	√	√				√	√					√	
Self-learning (cardiac diseases) and nutritional management of diabetes mellitus	√	√			√				√	√		√		√	
Dietary care for cancer		√		√	√	√	√		√	√				√	
Dietary care for pregnant and lactation		√		√			√		√	√		√			
parental nutrition	√	√			√							√		√	
Enteral nutrition, Nutrigenomics		√		√			√		√					√	



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

B) Practical part:

Assessment of Nutrition		√	√	√			√	√	√		√		√	√
Diet and digestive system	√	√		√	√		√		√		√		√	
Diet and renal Disease	√		√	√			√		√	√			√	
Diet and Osteoporosis	√			√			√		√		√			√
Nutrition in Celiac disease	√		√		√		√		√	√			√	
Nutritional requirements during life stages (geriatrics)	√	√	√		√		√	√		√	√		√	√
Nutritional requirements during life stages (pediatrics)	√	√	√		√		√	√		√	√		√	√
Diet and sport care	√		√	√	√		√	√		√			√	
Enteral nutrition	√	√		√	√			√	√	√	√			√
Parental Nutrition				√	√		√		√	√			√	
Nutrition management in different types of anemia	√	√		√	√			√		√			√	
Nutrition management in Pregnancy	√	√		√	√			√		√			√	



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

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

A) Theoretical part:

Course contents	Teaching and learning methods						Assessment methods				
	Advance lectures	Hybrid learning	Lab session	presentation	Case study	Self-learning	Course work	Course Work mid-term Exam)	Practical	Written	Oral
Measures of healthy life style.	√	√					√	√		√	√
Macronutrients and calculation of calories,.	√	√					√	√		√	√
Basal metabolic rate (BMR) - Recommended daily allowance (RDA)	√	√					√	√		√	√
Dietary care for patient	√	√					√	√		√	√



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

with renal and hepatic disorders												
Dietary care for patients with obesity	√	√					√	√		√	√	
Nutritional requirement for pediatrics)	√	√					√			√	√	
Vitamins and minerals (role in metabolism – clinical significance	√	√					√			√	√	
Gut microbiota and human health	√	√					√			√	√	
Self-learning (cardiac diseases) and nutritional management of diabetes mellitus	√	√				√				√	√	
Dietary care for cancer ,	√	√								√	√	
Dietary care for pregnant and lactation	√	√								√	√	
parental nutrition	√	√								√	√	
Entral nutrition, Nutrigenomics	√	√								√	√	



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

B. Practical part

Assessment of Nutrition		√	√				√		√		
Diet and digestive system		√	√	√			√		√		
Diet and renal Disease		√	√	√			√		√		
Diet and Osteoporosis		√	√	√	√		√		√		
Nutrition in Celiac disease		√	√	√	√		√		√		
Nutritional requirements during life stages (geriatrics)		√	√	√	√		√		√		
Nutritional requirements during life stages (gpediatrics)		√	√	√	√		√		√		
Diet and sport care		√	√	√			√		√		
Enteral nutrition		√	√	√			√		√		
Parental Nutrition		√	√	√			√		√		
Nutrition management in different types of anemia		√	√	√			√		√		
Nutrition management in Pregnancy		√	√				√				



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

Course Coordinator	Prof. Dr. Laila A. Eissa
	<i>Laila Eissa</i>
Head of Department	Dr.Noha M.H.Abdel-rahman
	<i>[Signature]</i>

Date: 16 /9/ 2023



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024



بكالوريوس الصيدلة الإكلينيكية (فارم د – Pharm D)
Course Specification
Academic year: 2023/2024

Course name: Drug information	اسم المقرر: معلومات الدواء
Academic Level: Level 5	الخامس المستوى الأكاديمي:
Scientific department: Pharmacology & Toxicology	القسم العلمي: الأدوية والسموم
Head of Department: Prof Dr Manar A Nader	رئيس القسم: إ.د/ منار أحمد نادر
Course Coordinator: Prof Dr Manar A Nader	منسق المقرر: إ.د/ منار أحمد نادر



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

University	Mansoura University
Faculty	Faculty of Pharmacy
Department offering the course	Pharmacology and Toxicology
Department supervising the course	Pharmacology and Toxicology
Program on which the course is given	Pharm D-Clinical Pharmacy Program
Academic Level	Level 5, First semester, 2023-2024
Date of course specification approval	18/9/ 2023

1- Basic Information: Course data:

Course Title	Drug information
Course Code	PO 905
Prerequisite	Pharmacology III
Teaching credit Hours: Lecture	1
: Practical	1
Total Credit Hours	2

A- Professional Information:

1. Course Aims:

This course enables 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.
4. Classify of study design, clinical trials, data presentation, basic statistical concepts
5. Describe basic pharmacoeconomic literature.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

2. 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	Collect and analyze drug information including evidence-based information, that may be applicable to pharmaceutical industry and patient care
1-1-8	1-1-8-1	Utilize economic informatics to improve the quality of care, manage resources and optimize patient safety.

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 and patient's health-related care needs.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3-2-3	3-2-3-1	Rationalize best available evidence for application of non-conventional therapy into pharmacy practice.
3-2-7	3-2-7-1	Demonstrate the adverse education and counseling to patients, healthcare team and communities to achieve safe and cost effective use of medicines



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

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; non-verbal communication and writing skills when dealing with patients, other health team and communities.
4-3-2	4-3-2-1	Promote continuous professional development including assessing own learning needs and developing a plan to meet these needs.

3. Course Contents

A) Theoretical part

Week	Topics	Hours
1	Introduction to drug information concept	1
2	Drug Information Centre [DIC].	1
3	Drug Information Resources (primary & secondary resources)	1
4	Drug Information Resources (tertiary resources)	1
5	Study design & clinical trial	1
6	Basic concepts in statistical concepts (Data presentation)	1
7	Basic concepts in statistical concepts (Probability and Statistical Hypothesis & Measures of dispersion and variation)	1
8	Basic concepts in statistical concepts (parametric & non-parametric measures, regression analysis)	1
9	Pharmacovigilance	1
10	Pharmacovigilance	1
11	Pharmacoeconomic	1
12	Pharmacoeconomic	1
13	Evidence based medicine (self learning)	1
14	Revision and quiz	1
15	Final written and oral exam	-



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

B) Practical part

Week No.	Topics	Hours
1	Use of Mobile Applications/ Website in Clinical Settings: Medical Calculators.	1
2	Use of Mobile Applications/ Website in Clinical Settings: Drug Interaction Checkers.	1
3	Basics for scientific writing	1
4	Basics for scientific writing	1
5	Journal club & application on The classification of study design and clinical trials	1
6	Journal club & application on The classification of study design and clinical trials	1
7	Pubmed in evidence based practice	1
8	Mid-term exam	-
9	Pubmed in evidence based practice	1
10	Basic statistical concepts (application using prism)	1
11	Basic statistical concepts (application using prism)	1
12	Basic statistical concepts (application using prism)	1
13	Basic statistical concepts (application using prism)	1
14	Practical exam	1



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

4. Teaching and Learning Methods:

	Teaching and learning method	Week number	K. elements to be addressed
4.1	Advanced lectures: <ul style="list-style-type: none"> Lectures using Data show, power Point presentations Brain storming Group discussion 	1-14	1.1.5.1, 1.1.6.1, 2.5.2.1, 3.2.3.1, 3.2.5.1
4.2	b. Hybrid learning <ul style="list-style-type: none"> On line learning through my mans "Mansoura university " Inter active discussion through My Mans 	1-11	3.2.3.1, , 3.2.5.1, 4.2.1.1, 4.3.2.1
4.3	Self-learning	13	4.2.1.1, 4.3.2.1
4.4	Practical session	1-14	1.1.5.1, 1.1.6.1, 2.5.2.1, 3.2.3.1, , 3.2.5.1, 4.2.1.1, 4.3.2.1
4.5	Computer aided learning	7-11	1.1.5.1, 1.1.6.1, 2.5.2.1, 3.2.3.1, , 3.2.5.1, 4.2.1.1, 4.3.2.1
4.6	Collaborative learning: research project	9-11	4.2.1.1, 4.3.2.1

5. Student Assessment:

b- Assessment Methods:

Assessment Methods	Key elements to be assessed
1- Periodical (Mid-term exam / Course work)	1.1.5.1, 1.1.6.1, 2.4.3.1, 2.4.5.1, 3.2.3.1, 3.2.5.1
2- Practical exam using OSPE	1.1.5.1, 1.1.6.1, 2.4.3.1, 2.4.5.1, 3.2.3.1, 3.2.5.1, 4.2.1.1, 4.3.2.1
3- Written exam	1.1.5.1, 1.1.6.1, 2.4.3.1, 2.4.5.1, 3.2.3.1, 3.2.5.1



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

c- Assessment schedule:

Assessment 1	Periodical (Mid-term/ Course work)	7-9 th week
Assessment 2	Practical exam (OSPE)	14 th week
Assessment 3	Written exam	Start from 15 th week

d- Weighing of assessment:

1	Periodical (Mid-term/ Course work)	15%
2	Practical exam	25%
3	Written exam	60%
Total		100%

6. Facilities required for teaching and learning

Classroom	Data show- Computers, sound system-Internet, Platform
Laboratory facilities	Data show- Computers, Internet, Platform
Library	Books



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

7. List of References

No	Reference	Type
1.	Lecture notes prepared by teaching staff	Course notes
2.	Remington Education: Drug Information and Literature Evaluation Abate, Marie A.; Blommel, Matthew L. Jan 2013	Essential Book
3.	AHFS - Drug Information Published by the American Society of Health-System Pharmacists 2022.	Essential Book
4.	Lexicomp, Dynamed Plus , Pubmed and BMJ best practice http://www.pubmed.com , www.ekb.eg http://www.sciencedirect.com / http://www.google scholar.com	Websites
5.	https://0810fmzcm-1104-y-https-www-clinicalkey-com.mplbci.ekb.eg/#!/browse/guidelines	Link to self-learning



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

8-Matrix:

Matrix 1. Course contents and course key elements

A) Theoretical part

Week No.	Course contents	Course Key elements							
		Domain: 1		Domain: 2		Domain: 3		Domain: 4	
		1.1.5. 1	1.1.6. 1	2.4.2. 1	2.4.5. 1	3.2.3. 1	3.2.5. 1	4.2.1. 1	4.3.2. 1
1	Introduction to drug information concept	✓	✓	✓	✓	✓	✓		
2	Drug Information Centre [DIC].	✓	✓	✓	✓	✓	✓		
3	Drug Information Resources	✓	✓	✓	✓	✓	✓		
4	Drug Information Resources	✓	✓	✓	✓	✓	✓		
5	Study design & clinical trial	✓	✓	✓	✓	✓	✓	✓	✓
6	Data presentation	✓	✓	✓	✓	✓		✓	✓
7	Basic concepts in statistical concepts	✓	✓	✓	✓	✓		✓	✓
8	Basic concepts in statistical concepts	✓	✓	✓	✓	✓		✓	✓
9	Pharmacovigilance	✓	✓	✓	✓	✓	✓	✓	✓
10	Pharmacovigilance	✓	✓	✓	✓	✓	✓	✓	✓
11	Pharmacoeconomic	✓	✓	✓	✓	✓	✓	✓	✓
12	Pharmacoeconomic	✓	✓	✓	✓	✓	✓	✓	✓
13	Evidence based medicine self learning								✓



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

Practical part

Week No.	Course contents	Course Key elements							
		Domain: 1		Domain: 2		Domain: 3		Domain: 4	
		1.1.5.1	1.1.6.1	2.4.2.1	2.4.5.1	3.2.3.1	3.2.5.1	4.2.1.1	4.3.2.1
1	Use of Mobile Applications/ Website in Clinical Settings: Medical Calculators.	✓	✓	✓	✓	✓	✓		
2	Use of Mobile Applications/ Website in Clinical Settings: Drug Interaction Checkers.	✓	✓	✓	✓	✓	✓		
3	Basics for scientific writing	✓	✓	✓	✓	✓	✓		
4	Basics for scientific writing	✓	✓	✓	✓	✓	✓	✓	✓
5	Journal club & application on The classification of study design and clinical trials	✓	✓	✓	✓	✓	✓	✓	✓
6	Journal club & application on The classification of study design and clinical trials	✓	✓	✓	✓	✓	✓	✓	✓
7	Pubmed in evidence based practice	✓	✓	✓	✓	✓	✓	✓	✓
8	Pubmed in evidence based practice	✓	✓	✓	✓	✓	✓	✓	✓
9	Basic statistical concepts (application using prism)	✓	✓	✓	✓	✓	✓	✓	✓
10	Basic statistical concepts (application using prism)	✓	✓	✓	✓	✓	✓	✓	✓
11	Basic statistical concepts (application using prism)	✓	✓	✓	✓	✓	✓	✓	✓



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

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

A)Theoretical part

Week No.	Course Contents	Teaching and Learning methods						Assessment methods		
		Advanced Lecture	Hybrid learning	Conventional	Self-learning	Case study	Computer aided	Corse Work	Practical/Tutorial	Written
1	Introduction to drug information concept	✓						✓		✓
2	Drug Information Centre [DIC].	✓						✓		✓
3	Drug Information Resources	✓						✓		✓
4	Drug Information Resources	✓						✓		✓
5	Study design & clinical trial	✓	✓							✓
6	Data presentation	✓	✓							✓
7	Basic concepts in statistical concepts	✓								✓
8	Basic concepts in statistical concepts	✓	✓							✓
9	Pharmacovigilance	✓		✓						✓
10	Pharmacovigilance	✓		✓						✓
11	Pharmacoeconomic			✓						✓
12	Pharmacoeconomic	✓								✓
13	Evidence based medicine self learning	✓			✓					✓





**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

B) Practical part

We ek No.	Course Contents	Teaching and Learning methods						Assessment methods		
		Practical work/ tutorial	Hybrid learning	Conver ative learning	Self- learning	Computer aided learning	Corse Work	Practical/ Tutorial	Written	
1	Use of Mobile Applications/ Website in Clinical Settings: Medical Calculators.	✓	✓					✓		
2	Use of Mobile Applications/ Website in Clinical Settings: Drug Interaction Checkers.	✓	✓				✓	✓		
3	Basics for scientific writing	✓	✓				✓	✓		
4	Basics for scientific writing	✓	✓				✓	✓		
5	Journal club & application on The classification of study design and clinical trials	✓	✓				✓	✓		
6	Journal club & application on The classification of study design and clinical trials	✓	✓				✓	✓		
7	Pubmed in evidence based practice	✓	✓			✓	✓	✓		
8	Pubmed in evidence based practice	✓	✓			✓	✓	✓		
9	Basic statistical concepts (application using prism)	✓	✓	✓		✓	✓	✓		
10	Basic statistical concepts (application using prism)	✓	✓	✓		✓	✓	✓		
11	Basic statistical concepts (application using prism)		✓	✓		✓	✓	✓		

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

Date: 18 /9 / 2023



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program



Course specification
2023- 2024

بكالوريوس الصيدلة (فارم د – Pharm D)
Course Specification
Academic year: 2024-2023

Course name: Drug marketing & Pharmacoeconomics	اسم المقرر: التسويق الدوائي واقتصاديات الدواء
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Under Supervision of Clinical Pharmacy & Pharmacy Practice Department	القسم العلمي: تحت إشراف قسم الصيدلة الإكلينيكية والممارسة الصيدلانية
Head of Department: Assoc. Prof. Dr. Mohamed Elhusseiny	رئيس القسم: أ.م.د/ محمد الحسيني شمس
Course Coordinator:	منسق المقرر:



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmaceutics
Department supervising the course	Clinical Pharmacy and Pharmacy Practice Department
Program on which the course is given	B. Pharm. (PharmD)
Academic Level	Fifth level, first semester, 2023-2024
Date of course specification approval	8 th September, 2023

5- Basic Information: Course data:

Course Title	Drug marketing & Pharmacoeconomics
Course Code	NP 901
Prerequisite	Registration
Teaching Hours: Lecture	2
Practical	0
Total Credit Hours	2 (Credit H)

6- Course Aims:

- 2.1. Introduce the major concepts in management and marketing in the different fields of pharmacy practice.
- 2.2. Understand the different application involved in different management system.
- 2.3. Organizing the different properties, applications of health economics and health technology assessment.
- 2.4. Overview on different types of economic evaluation and budget impact analysis.



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

3- Course Learning Outcomes

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

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	Define the different basic knowledge of pharmaceutical marketing management.
1.1.6	1.1.6.1	Classify different methods of analysis and apply relevant scientific resources to make evidence-based cost-effective health care decisions.
1.1.7	1.1.7.1	Analyze evolving evidence, that may be applicable to solve pharmaceutical marketing problems.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.1.1	2.1.1.1	Organize and apply legal professional requirements to healthcare team in competitive analysis and sale force management.
2.4.3	2.4.3.1	Formulate pharmaceutical care plans for for several disorders and drug related problems with reference to their particulate health problems and special considerations problems for values-based pricing.
2.6.1	2.6.1.1	Interpret the basic principles involved in managing financial, and customer behavior and marketing research.
2.6.2	2.6.2.1	Conduct guidelines of drug promotion, market segmentation, accounting and budget impact analysis.

DOMAIN 4: PERSONAL PRACTICE

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



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

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

4- Course Contents

Week No.	Topics	Lecture Hours
1	Presentation Skills guide	2
2	Structuring the presentation organizing and gathering presentation materials	2
3	Structuring the presentation	2
4	Pharmacists' effective communication with patients	2
5	Pharmacists' effective communication with healthcare team members	2
6	Oral presentation: tips for conducting oral presentations (dealing with speech anxiety)	2
7	Oral presentation: tips for conducting oral presentations (developing a personal style of presentation).	2
8	Effective presentations design and delivery: visual aids and supporting materials, use PowerPoint ® effectively	2
9	Confident and Effective Delivery of a Presentation: Common mistakes	2
10	Non-Verbal Communication: Why non-verbal communications are unique	2
11	Non-Verbal Communication: Elements of non-verbal communication	2
12	Communication: Interpersonal Communication.	2
13	Communication: One-way Communication (Self-learning)	2
14	Revision and quiz	2
15	Written exam and Oral exam	-



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

5- Teaching and Learning Methods:

	Teaching and Learning Methods:	Weeks No.	Key elements to be addressed
5.1	Hybrid learning: a. Online learning through Mymans "Mansoura university "as recorded – video lectures b. Inter active discussion through My Mans c. Power point (PPT) presentations	Week 1-14	1.1.1.1, 1.1.6.1, 1.1.7.1, 2.1.1.1, 2.4.3.1, 2.6.1.1, 2.6.2.1.
5.2	Self-learning	Week 13	4.1.1.1, 4.1.2.1, 4.3.2.1.
5.3	Formative assignments	Week 1-13	4.1.1.1, 4.1.2.1,
5.4	Class activity discussion / Brainstorming / problem solving	Week 1-13	4.3.2.1.

6- Student Assessment:

Assessment Methods:

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

Assessment schedule

Assessment 1	Mid-term	7-9 th week
Assessment 2	Written	Start from 15 th week
Other assessment		

Weighing of assessments

1	Mid-term examination	25%
3	Final-term examination	75%
5	Other types of assessment	
Total		100%



Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program

Course specification
2023- 2024

7- Facilities required for teaching and learning

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

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.	"Pharmacoeconomics: From theory to practice", (2 nd edition) Renee J.G. Arnold, CRC Press, New York , (August 2020).	Book
4.	Pharmacy Administration (3rd edition), Beijing, China Shimin Yang, Medical Technique Press, (2019).	Book
5.	https://www.researchgate.net/publication/325023106 http://www.sciencedirect.com/ http://www.scholar.google.com/ http://www.pubmed.com https://www.ekb.eg/web/guest/home	Websites



**Mansoura University
Faculty of Pharmacy
Pharm D-Clinical Pharmacy Program**

**Course specification
2023- 2024**

9.1 Matrix of knowledge and skills of the course

Course contents	Outcomes Domains / Key elements									
	Domain 1			Domain 2				Domain 4		
	1.1.1.1	1.1.6.1	1.1.7.1	2.1.1.1	2.4.3.1	2.6.1.1	2.6.2.1	4.1.1.1	4.1.2.1	4.3.2.1
Presentation Skills guide	√	√		√	√			√	√	
Structuring the presentation organizing and gathering presentation materials	√	√		√	√	√	√	√	√	
Structuring the presentation	√	√	√	√	√			√	√	√
Pharmacists' effective communication with patients	√	√	√	√	√			√	√	
Pharmacists' effective communication with healthcare team members	√	√	√	√	√	√	√	√	√	
Oral presentation: tips for conducting oral presentations (dealing with speech anxiety)	√	√		√	√			√	√	√
Oral presentation: tips for conducting oral presentations (developing a personal style of presentation).	√	√		√	√			√	√	
Effective presentations design and delivery: visual aids and supporting materials, use PowerPoint ® effectively	√	√		√	√			√	√	
Confident and Effective Delivery of a Presentation: Common mistakes	√	√	√			√	√		√	√
Non-Verbal Communication : Why non-verbal communications are unique	√	√	√			√	√		√	√
Non-Verbal Communication : Elements of non-verbal communication	√	√	√			√	√		√	√
Communication: Interpersonal Communication.	√	√	√			√	√		√	√
Communication: One-way Communication	√	√	√			√	√		√	√



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

9.2. Matrix 2 between course contents, methods of learning and assessment

Course Contents	Teaching and Learning Methods					Assessment methods	
	Lecture	Hybrid learning	Computer aided learning	Problem solving,	Self-learning	coursework	Written
Presentation Skills guide	√	√	√			√	√
Structuring the presentation organizing and gathering presentation materials	√	√	√			√	√
Structuring the presentation	√	√	√			√	√
Pharmacists' effective communication with patients	√	√	√			√	√
Pharmacists' effective communication with healthcare team members	√	√	√			√	√
Oral presentation: tips for conducting oral presentations (dealing with speech anxiety)	√	√	√			√	√
Oral presentation: tips for conducting oral presentations (developing a personal style of presentation).	√	√	√				√
Effective presentations design and delivery: visual aids and supporting materials, use PowerPoint ® effectively	√	√	√				√
Confident and Effective Delivery of a Presentation: Common mistakes	√	√	√				√



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

Non-Verbal Communication: Why non-verbal communications are unique	√	√	√				√
Non-Verbal Communication: Elements of non-verbal communication	√	√	√				√
Communication: Interpersonal Communication.	√	√	√				√
Communication: One-way Communication (Self-learning)	√	√	√		√		√

Course Coordinator	
Head of Department	Prof. Dr. Mohamed Elhusseiny <i>Mohamed Elhusseiny</i>

Date: 8 / 9/ 2023



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program



بكالوريوس الصيدلة (فارم دي – Pharm D)

Course Specification

Academic year: 2023/2024

Course Name: Entrepreneurship	اسم المقرر : ريادة الأعمال
Academic Level: level 5	المستوى الأكاديمي : الخامس
Scientific Department: Pharmaceutical Analytical Chemistry	القسم العلمي : الكيمياء التحليلية الصيدلانية
Head of Department: Prof. Dr. Jenny Jehan Nasr	رئيس القسم : أ.د/ جيني جيهان نصر
Course Coordinator: Dr. Heba Samir Elama	منسق المقرر: د. هبة سمير الأعمى

University	Mansoura
Faculty	Pharmacy



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

Department offering the course	Pharmaceutical Analytical Chemistry
Department supervising the course	Pharmaceutical Analytical Chemistry
Program on which the course is given	Bachelor in clinical Pharmacy-Pharm D
Academic Level	Level 5, First Semester, 2023/2024
Date of course specification approval	10/9/2023

A. Basic Information: Course data:

Course Title	Entrepreneurship
Course Code	UR 5
Prerequisite	Registration
Teaching Credit Hours: Lecture	1
: Practical	0
Total Credit Hours	1

B. Professional Information:

1- Course Aims:

This course enables the students to:

- Enhance student's knowledge in leadership, business, and financial skills in pharmacy practice while learning the traits of an entrepreneur, current topics in entrepreneurship with a specific focus on pharmacy practice and patient care programs.
- Understand a comprehensive set of critical skills needed to develop a profitable business project.
- Identify and explain the personal and business tools including risk-taking, strategic planning, marketing, competitiveness, and social responsibility to make the transition from the academic environment to the daily practice of pharmacy now and in the future, with an emphasis on entrepreneurship.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

2- Course key Elements:

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

Domain 1- Fundamental Knowledge

Program Key Element No.	Course Key Element No.	Course Key Element
1.1.1	1.1.1.1	Recognize in depth and breadth knowledge of social, behavioral, and administrative entrepreneur sciences.

Domain 2: Professional and Ethical Practice

Program Key Element No.	Course Key Element No.	Course Key Element
2.6.1	2.6.1.1	Utilize and apply the principles of business administration and management to ensure rational use of financial and human resources.
2.6.2	2.6.2.1	Apply the principles of sales, marketing, and entrepreneurship.

Domain 4: Personal Practice:

Program Key Element No.	Course Key Element No.	Course Key Element
4.1.2	4.1.2.1	Participate collaboratively and independently in a team.
4.1.3	4.1.3.1	Demonstrate innovation and apply entrepreneurial skills within a simulated entrepreneurial activity.
4.2.1	4.2.1.1	Communicate effectively in a proper professional language by verbal and non-verbal means.
4.3.2	4.3.2.1	Practice self-learning to enhance continuous personal development and life-long learning.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Innovation and technology	1
2	Diffusion of Innovation	1
3	Important definition: Entrepreneur and minimum viable product (MVP)	1
4	Types of Entrepreneurs Self study (How to design a strategic plan)	1
5	Market research Self study (Business canvas)	1
6	Business Model Canvas	1
7	Presentation	1
8	Pitching	1
9	The different sources of funding for startups	1
10	The SCAMPER technique for ideation	1
11	Design Thinking	1
12	Entrepreneurship	1
13	Entrepreneur characteristics	1
14	Revision and quiz	1
15	Final theoretical exam	--



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

4-Teaching and learning Methods:

No.	Teaching and learning Methods	Week No.	Key element to be addressed
4.1	Computer aided learning: a. Lectures using Data Show, Power Point Presentations b. Distance learning <ul style="list-style-type: none"> Online learning through My Mans "Mansoura university "as recorded – video lectures. Interactive discussion through My Mans (Microsoft teams) 	1-14	1.1.1.1, 2.6.1.1, 2.6.2.1, 4.1.2.1, 4.1.3.1, 4.2.1.1 4.3.2.1
4.2	Self-learning	4 & 5	1.1.1.1, 2.6.1.1, 2.6.2.1, 4.1.2.1, 4.1.3.1, 4.2.1.1 4.3.2.1
4.3	Class Activity: Group discussion offline and online	2-12	1.1.1.1, 2.6.1.1, 2.6.2.1, 4.1.2.1, 4.1.3.1, 4.2.1.1 4.3.2.1
4.4	Problem – based learning and brainstorming	1-13	1.1.1.1, 2.6.1.1, 2.6.2.1, 4.1.3.1, 4.2.1.1
4.5	Research assignments	7 & 8	1.1.1.1, 2.6.1.1, 2.6.2.1, 4.1.2.1, 4.1.3.1, 4.2.1.1 4.3.2.1

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	Key elements to be assessed
1-Written exam	1.1.1.1, 2.6.1.1, 2.6.2.1.
2- Periodical exam / Course work	1.1.1.1, 2.6.1.1, 2.6.2.1, 4.1.2.1, 4.1.3.1, 4.2.1.1, 4.3.2.1

b. Assessment schedule

Assessment 1	Periodical exam / Course work	7 th -9 th week
Assessment 2	Written theoretical exam	Start from 15 th week



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

c. Weighing of assessments

1	Periodical exam / Course work	25 %
2	Final theoretical written examination	75 %
Total		100 %

6- Facilities required for teaching and learning

- Class room	Data show- Computers, Internet. (Available)
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7- 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.	Lambing PA, Kuehl CR. Entrepreneurship. Upper Saddle River, NJ: Prentice Hall; 2003.	Book
4.	Mattingly TJ, Mullins CD, Melendez DR, Boyden K, Eddington ND. Entrepreneurship in pharmacy practice and education: a systematic review. Am J Pharm Educ. 2019;83(3):7233.	Book
5.	Drobyazko S, Hryhoruk I, Pavlova H, Volchanska L, Sergiychuk S. Entrepreneurship innovation model for telecommunications enterprises. Journal of Entrepreneurship Education. 2019 Jul 1;22(2):1-6.	Book
6.	Chisholm-Burns MA, Vaillancourt AM, Shepherd M. Pharmacy Management, Leadership, Marketing, and Finance (Book Only). Jones & Bartlett Publishers; 2012 Oct 4.	Book



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

7.	https://www.ekb.eg https://www.wix.com/blog/2021/07/types-of-entrepreneurship/ https://www.investopedia.com/terms/e/entrepreneur.asp https://byjus.com/commerce/what-is-entrepreneurship/ https://entrepreneurhandbook.co.uk/entrepreneurship/	websites
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Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

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

Course contents / Key elements	Domain 1	Domain 2		Domain 4			
	1.1.1.1	2.6.1.1	2.6.2.1	4.1.2.1	4.1.3.1	4.2.1.1	4.3.2.1
Innovation and technology	✓	✓	✓				
Diffusion of Innovation	✓	✓	✓	✓			
Important definition: Entrepreneur and minimum viable product (MVP)	✓	✓	✓	✓	✓	✓	
Types of Entrepreneurs Self study (How to design a strategic plan)	✓	✓	✓	✓	✓	✓	✓
Market research Self study (Business canvas)	✓	✓	✓	✓	✓		✓
Business Model Canvas	✓	✓	✓	✓	✓		
Presentation	✓	✓	✓	✓	✓	✓	
Pitching	✓	✓	✓	✓	✓	✓	



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Clinical Pharm D
Program

The different sources of funding for startups	✓		✓	✓					
The SCAMPER technique for ideation	✓		✓	✓					
Design Thinking	✓		✓	✓					
Entrepreneurship	✓		✓	✓					
Entrepreneur characteristics	✓		✓	✓					



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

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

A) Theoretical Part:									
Course Contents	Teaching and Learning Methods						Assessment Methods		
	Lecture	Online interactive discussion	Record video	Group discussion	Problem solving	Self-learning	Written	Periodical Midterm	Course work
Innovation and technology	√		√	√			√	√	√
Diffusion of Innovation	√		√	√			√	√	
Important definition: Entrepreneur and minimum viable product (MVP)	√		√	√	√		√	√	√
Types of Entrepreneurs Self study (How to design a strategic plan)	√	√	√	√	√	√	√	√	
Market research Self study (Business canvas)	√		√	√	√	√	√		√
Business Model Canvas	√	√	√	√	√		√		
Presentation	√	√	√	√			√		
Pitching	√		√	√			√		√
The different sources of funding for startups	√		√	√	√		√		
The SCAMPER technique for ideation	√		√	√			√		
Design Thinking	√		√	√			√		√
Entrepreneurship	√		√	√			√		

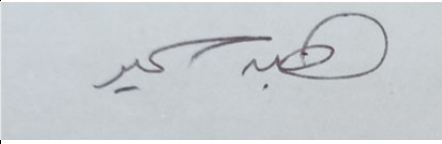



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

Entrepreneur characteristics	√		√	√	√	√		√		
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Course Coordinator	Dr. Heba Samir Elama
	
Head of Department	Prof. Dr. Jenny Jeehan Mohamed Ahmed Nasr 

Date: 10/ 9 / 2023



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program



بكالوريوس الصيدلة الإكلينيكية (فارم دي – Pharm D)
Course Specification
Academic year: 2023/2024

Course name: Clinical Toxicology (PO 006)	اسم المقرر : السموم الاكلينيكي
Academic Level: Level 5	المستوى الأكاديمي : الخامس
Scientific department: Pharmacology & Toxicology	القسم العلمي : الادويه والسموم
Head of Department: Prof. Dr. Manar Ahmed Nader	رئيس القسم : ا.د/ منار أحمد نادر
Course Coordinator:	منسق المقرر :



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmacology & Toxicology
Department supervising the course	Pharmacology & Toxicology
Program on which the course is given	B. Pharm. (Clinical Pharmacy) (Pharm-D)
Academic Level	Level 5, Second semester , 2023-2024
Date of course specification approval	18 th September 2023

A. Basic Information: Course data:

Course Title	Clinical Toxicology
Course Code	PO 006
Prerequisite	Pharmacology II1
Teaching credit Hours: Lecture	2
: Practical	1
Total Credit Hours	3

B. Professional Information:

1.Course Aims:

This course enables the students:

- To understand the basic principles of toxicology and the different disciplines of toxicology.
- To gain knowledge regarding the supportive measures, therapeutic interventions, specific antidotes as general guidelines of treatment modalities.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

- To learn the basics of clinical toxicology that will enable the student to diagnose and manage intoxicated patients.
- To understand the serious consequences of exposure to therapeutic drugs, environmental and occupational chemicals

2- Course k. elements:

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

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.8	1.1.8.1	Define health informatics to develop the quality of care, manage resources and enhance patient safety.

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
3.2.4	3.2.4.1	Provide suitable information about toxicity of medicinal agents and other xenobiotics including possible sources, signs, symptoms and treatment options.
3.2.5	3.2.5.1	Provide education and counselling to patients and health care professionals about effective and safe medications



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

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	Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)	2
3	Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)	2
4	Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)	2
5	Target organ toxicity (kidney)	2
6	Target organ toxicity (liver)	2
7	Target organ toxicity (lung)	2
8	Target organ toxicity (heart & blood)	2
9	Target organ toxicity (brain & skin)	2
10	Heavy metal toxicity (lead, copper & mercury)	2
11	Heavy metal toxicity (iron & cobalt)	2
12	Drug induced toxicity (Digoxin)	2



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

13	Drug induced toxicity (Methotroxate)	2
14	Drug induced toxicity (Cyclophosphamide)	2
15	Drug abuse (self-learning)	2
16	Compensatory and alternative lecture	2
17	Final written 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
	Mid-term exam	-
8	Aspirin toxicity	1
9	case study on Cyanide toxicity	1
10	case study on Cardiac glycosides toxicity	1
11	case study on CNS stimulant toxicity	1
12	case study on Insecticide toxicity	1
13	case study on Nicotine toxicity	1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

14	case study on Acetaminophen toxicity	1
15	Revision and activity	1
16	Sheet / and Practical exam by applying (OSPE)	1

4- Teaching and Learning Methods:

Teaching and Learning Method		Week number	K. elements to be addressed
4.1	Advanced lectures: <ul style="list-style-type: none"> Lectures using Data show, power Point presentations Brain storming Group discussion 	1-16	1.1.8.1, 2.4.4.1, 3.2.4.1, 3.2.5.1, 4.2.2.1, 4.3.1.1
4.2	Hybrid learning <ul style="list-style-type: none"> Online learning through my Mans "Mansoura university " Interactive discussion through My Mans 	1-12	1.1.8.1, 2.4.4.1, 3.2.4.1, 3.2.5.1, 4.2.2.1, 4.3.1.1
4.3	Self-learning	14	4.2.2.1, 4.3.1.1
4.4	Practical classes provided with experimental animals for handling and demonstration of toxicities with data shows and white boards for data presentation	1-16	2.4.4.1, 3.2.4.1, 3.2.5.1
4.5	Case study- problem solving	9-11	1.1.8.1, 2.4.4.1, 3.2.4.1, 3.2.5.1, 4.2.1.1,
4.6	Collaborative learning: research project	9-11	1.1.8.1, 2.4.4.1, 3.2.4.1, 3.2.5.1, 4.2.2.1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

5- Student Assessment:

b- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.8.1, 2.4.4.1, 3.2.4.1, 3.2.5 .1
2-Practical exam	1.1.8.1, 2.4.4.1, 3.2.4.1, 3.2.5.1, 4.2.2.1, 4.3.1.1
3-Oral	1.1.8.1, 2.4.4.1, 3.2.4.1, 3.2.5.1, 4.2.2.1, 4.3.1.1
4- Periodical (Mid-term exam) / Course work	1.1.8.1, 2.4.4.1, 3.2.4.1, 3.2.9.1

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam)	7 th - 9 th week
Assessment 2	Practical	16 th week
Assessment 3	Final Written exam	Start from 17 th week
Assessment 3	Oral	Start from 17 th week

c. Weighing of assessments

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



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Data show- Computers - white board , Media- Sterile tools- chemical reagent experimental animals

7- 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



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

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

Course contents	Outcomes Domains / Key elements						
	Domain 1		Domain 2	Domain 3		Domain 4	
	1.1.8.1		2.4.4.1	3.2.4.1	3.2.5.1	4.2.2.1	4.3.1.1
A) Theoretical part							
Principles and introduction of toxicology	✓						
Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)	✓			✓			
Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)			✓		✓		
Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)			✓		✓		
Target organ toxicity (kidney)			✓		✓	✓	✓
Target organ toxicity (liver)	✓		✓	✓	✓	✓	✓
Target organ toxicity (lung)				✓		✓	✓
Target organ toxicity (heart & blood)				✓		✓	✓
Target organ toxicity (brain & skin)	✓		✓		✓	✓	✓
Heavy metal toxicity (lead, copper & mercey)	✓		✓		✓	✓	✓
Heavy metal toxicity (iron & cobalt)	✓		✓	✓	✓	✓	✓



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

Drug induced toxicity (Digoxin)	✓	✓	✓	✓	✓	✓	✓
Drug induced toxicity (Methotroxate)		✓	✓	✓	✓	✓	✓
Drug induced toxicity (Cyclophosphamide)	✓	✓	✓	✓	✓	✓	✓
Drug abuse (self-learning)	✓	✓	✓	✓	✓	✓	✓
Compensatory and alternative lecture	✓	✓	✓	✓	✓	✓	✓

Course contents	Outcomes Domains / Key elements						
	Domain 1	Domain 2	Domain 3		Domain 4		
	1.1.8.1	2.4.4.1	3.2.4.1	3.2.5.1	4.2.2.1	4.3.1.1	
B) Practical part							
Acute toxicity determination	✓						
Cyanide toxicity	✓		✓				
Cardiac glycosides toxicity		✓		✓			
CNS stimulant toxicity		✓		✓			
Insecticide toxicity		✓		✓		✓	
Nicotine toxicity	✓	✓		✓			
Acetaminophen toxicity	✓	✓	✓	✓	✓	✓	
Aspirin toxicity	✓	✓		✓	✓	✓	



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

case study on Cyanide toxicity	✓		✓		✓		✓	✓	
case study on Cardiac glycosides toxicity	✓		✓		✓		✓	✓	
case study on CNS stimulant toxicity	✓		✓		✓		✓	✓	
case study on Insecticide toxicity	✓		✓		✓		✓	✓	
case study on Nicotine toxicity	✓		✓		✓		✓	✓	
Revision and activity	✓		✓		✓		✓	✓	



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

9-Matrix between course content, method of learning and assessment:

Course contents	Teaching and learning methods						Assessment methods			
	Advanced Lectures	Hybrid learning	Lab sessions	Self-learning	Case study	Collaborative learning	Course work	Practical/tutorial	Written	Oral
Principles and introduction of toxicology	✓						✓		✓	✓
Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)	✓						✓		✓	✓
Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)	✓						✓		✓	✓
Clinical toxicology (Clinical strategy for treatment of the poisoned patient.)	✓						✓		✓	✓
Target organ toxicity (kidney)	✓	✓							✓	✓
Target organ toxicity (liver)	✓								✓	✓
Target organ toxicity (lung)	✓								✓	✓



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

Target organ toxicity (heart & blood)	✓								✓	✓
Target organ toxicity (brain & skin)	✓	✓							✓	✓
Heavy metal toxicity (lead, copper & mercury)	✓					✓			✓	✓
Heavy metal toxicity (iron & cobalt)	✓					✓			✓	✓
Drug induced toxicity (Digoxin)	✓	✓				✓			✓	✓
Drug induced toxicity (Methotrexate)	✓								✓	✓
Drug induced toxicity (Cyclophosphamide)	✓								✓	✓
Drug abuse (self-learning)	✓			✓					✓	✓



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

Course contents	Teaching and learning methods						Assessment methods			
	Advanced lectures	Hybrid learning	Lab sessions	Self-learning	Case study	Collaborative learning	Course work	Practical/tutorial	Written	Oral
Acute toxicity determination		✓	✓					✓		
Cyanide toxicity		✓	✓				✓	✓		
Cardiac glycosides toxicity		✓	✓				✓	✓		
CNS stimulant toxicity		✓	✓				✓	✓		
Insecticide toxicity		✓	✓				✓	✓		
Nicotine toxicity		✓	✓				✓	✓		
Acetaminophen toxicity		✓	✓				✓	✓		
Aspirin toxicity		✓	✓				✓	✓		
case study on Cyanide toxicity		✓	✓		✓	✓	✓	✓		
case study on Cardiac glycosides toxicity		✓	✓		✓	✓	✓	✓		
case study on CNS stimulant toxicity		✓	✓		✓	✓	✓	✓		
case study on Insecticide toxicity		✓	✓				✓	✓		
case study on Nicotine toxicity		✓	✓				✓	✓		
Revision and activity		✓	✓				✓	✓		



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

Course Coordinator	
Head of Department	Prof Dr Manar A Nader

Date: 18/9 / 2023



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program



بكالوريوس الصيدلة الإكلينيكية

(فارم د-Pharm D)

Course Specification Academic year: 2023/2024

Course name: Pharmacotherapy of Dermatological, Reproductive, and Musculoskeletal Diseases	اسم المقرر: العلاج الدوائي لأمراض الجلدية والتناسلية وأمراض العظم والعضلات
Academic Level: Fifth Level	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy & Pharmacy Practice Department	القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلانية
Head of Department: Prof. Dr. Mohammed E. Shams	رئيس القسم: أ.د/ محمد الحسيني شمس
Course Coordinator: Dr. to be nominated	منسق المقرر : سيتم ترشيحه



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

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

1- Basic Information: Course data:

Course Title	Pharmacotherapy of Dermatological, Reproductive, and Musculoskeletal Diseases
Course Code	PP 009
Prerequisite	Pharmacology II
Credit Hours: Lecture	1
Practical sessions using tutorial	1
Total Credit Hours	2 (Credit H)



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

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, osteomyelitis, 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 in dermatological, sexually transmitted, and musculoskeletal diseases.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Formulate pharmaceutical care plans for management of dermatological, reproductive, and musculoskeletal disorders and drug-related problems with reference to their particulate health problems and special considerations.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

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	Provide proper disease and drug counseling for patients with skin conditions, osteoarthritis, gout, and hyperuricemia

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.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

4- Course Contents

<i>Week No.</i>	<i>Lecture Topics</i>	<i>Lecture Credit Hours</i>
1	Acne vulgaris Etiology and pathophysiology Clinical presentation Treatment.	1
2	Psoriasis Etiology and pathophysiology Clinical presentation Treatment.	1
3	Atopic dermatitis Etiology and pathophysiology Clinical presentation Treatment.	1
4	Dermatologic drug reactions and common skin conditions Structure and function of the skin. Patient assessment. Drug induced cutaneous reactions.	1
5	Skin and soft tissue infection Etiology and pathophysiology. Folliculitis, furuncles, and carbuncles Treatment.	1
6	Superficial fungal infection	1
7	Oropharyngeal and esophageal candidiasis	1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2023- 2024Pharm D
Program

8	Sexually transmitted disease	1
9	Gonorrhea Syphilis	1
10	Osteoarthritis and osteomalacia Etiology and pathophysiology Clinical presentation	1
11	Osteoarthritis and osteomalacia Non-pharmacological management. Pharmacological management.	1
12	Gout and hyperuricemia Etiology and pathophysiology (Self learning)	1
13	Gout and hyperuricemia Clinical presentation	1
14	Gout and hyperuricemia Non-pharmacological management Pharmacological management	1
15	Compensatory and alternative lecture	1
16	Revision and quiz	1
17	Start of Final theoretical exam	-



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2023- 2024 Pharm D
Program

<i>Week No.</i>	<i>Practical topics</i>	<i>Credit hours</i>
1	Acne vulgaris	1
2	Psoriasis	1
3	Atopic dermatitis	1
4	Dermatologic drug reactions	1
5	common skin conditions	1
6	Skin infection	1
7	soft tissue infection	1
8	Midterm exam	-
9	Superficial fungal infection	1
10	Sexually transmitted disease	1
11	Osteoarthritis	1
12	osteomalacia	1
13	Gout	1
	hyperuricemia	1
15	Revision and activity	1
16	Practical exam applying OSCE	1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

5-Teaching and Learning Methods:

	<i>Teaching and Learning Methods:</i>	<i>Weeks No.</i>	<i>Key elements to be addressed</i>
5.1	Hybrid learning: Lectures using Data show, power Point presentations Distance learning Online learning through mymans "Mansoura university "as recorded – video lectures. Inter active discussion through My Mans	Week 1-16	1.1.1.1, 1.1.4.1, 1.1.7.1, 3.2.1.1, 3.2.5.1.
5.2	Self-learning	Week 13	4.1.1.1, 4.3.2.1
5.3	Practical session using tutorials	Week 1-16	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 1-14	4.1.1.1, 4.3.2.1
5.5	Problem – based learning and brainstorming	Week 1-14	4.1.1.1, 4.3.2.1
5.6	Research assignments	Week 1-14	4.1.1.1, 4.3.2.1
5.7	Role play	Week 14	4.1.1.1, 4.3.2.1

Student Assessment:

Assessment Methods:

Assessment Methods	Key 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	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



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	7-9th week
Assessment 2	Practical examination and tutorial	16th week
Assessment 3	Written exam	Start in 17th week
Assessment 4	Oral exam	Start in 17th week

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%

7- Facilities required for

teaching and learning:

Classroom	Data show- Computers, Internet, Platform
Library	Reference books



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

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.	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 / http://www.scholar.google.com / http://www.pubmed.com	Websites



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

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
Acne vulgaris	√	√	√	√	√	√	√		
Psoriasis	√	√	√	√	√		√		
Atopic dermatitis	√	√	√	√	√	√	√		
Dermatologic drug reactions and common skin conditions	√	√	√	√	√	√	√		
Skin and soft tissue infection	√	√	√	√	√	√	√	√	√
Superficial fungal infection	√	√	√	√	√	√	√	√	√
Oropharyngeal and esophageal candidiasis	√	√	√	√	√	√	√	√	√
Sexually transmitted disease	√	√	√	√	√		√	√	√



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

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
Gonorrhea	√	√	√				√		
Syphilis				√	√			√	√
Osteoarthritis and osteomalacia	√	√	√	√	√	√	√	√	√
Osteoarthritis and osteomalacia									
Non-pharmacological management.	√	√	√	√	√	√	√	√	√
Pharmacological management.									
Gout and hyperuricemia									
Etiology and pathophysiology (Self learning)	√	√	√	√	√	√	√	√	√
Gout and hyperuricemia	√	√	√	√	√	√	√	√	√



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

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	
Clinical presentation										
Gout and hyperuricemia										
Non-pharmacological management	√	√	√	√	√	√	√	√	√	√
Pharmacological management										



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

Practical 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	
Acne vulgaris	√	√	√	√	√	√	√			
Psoriasis	√	√	√	√	√		√			
Atopic dermatitis	√	√	√	√	√	√	√			
Dermatologic drug reactions	√	√	√	√	√	√	√			
common skin conditions	√	√	√	√	√	√	√			
Skin infection	√	√	√	√	√	√	√	√	√	
soft tissue infection	√	√	√	√	√	√	√	√	√	
Superficial fungal infection	√	√	√	√	√	√	√	√	√	
Sexually transmitted disease	√	√	√	√	√		√	√	√	
Osteoarthritis	√	√	√	√	√	√	√	√	√	
osteomalacia	√	√	√	√	√	√	√	√	√	
Gout	√	√	√	√	√	√	√	√	√	
hyperuricemia	√	√	√	√	√	√	√	√	√	



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

Course Contents	Teaching and Learning Methods						Assessment methods			
	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/Tutorial	Written	Oral
Acne vulgaris	√	√					√		√	√
Psoriasis	√	√					√		√	√
Atopic dermatitis	√	√					√		√	√
Dermatologic drug reactions and common skin conditions	√	√					√		√	√
Skin and soft tissue infection	√	√					√		√	√
Superficial fungal infection	√	√					√		√	√
Oropharyngeal and esophageal candidiasis	√	√					√		√	√
Sexually transmitted disease	√	√					√		√	√
Gonorrhoea	√	√					√		√	√
Syphilis	√	√					√		√	√
Osteoarthritis and osteomalacia	√	√					√		√	√
Osteoarthritis and osteomalacia Non-pharmacological management. Pharmacological management	√	√					√		√	√
Gout and hyperuricemia Etiology and pathophysiology (Self learning)	√	√				√	√		√	√
Gout and hyperuricemia Clinical presentation	√	√				√	√		√	√
Gout and hyperuricemia Non-pharmacological management Pharmacological management	√	√				√	√		√	√



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program

Course Contents	Teaching and Learning Methods						Assessment methods			
	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/ tutorial	Written	Oral
Acne vulgaris			√		√			√		
Psoriasis			√		√			√		
Atopic dermatitis			√		√			√		
Dermatologic drug reactions			√		√			√		
common skin conditions			√		√			√		
Skin infection			√		√			√		
soft tissue infection			√		√			√		
Superficial fungal infection			√		√			√		
Sexually transmitted disease			√		√			√		
Osteoarthritis			√	√	√			√		
osteomalacia			√	√	√			√		
Gout			√	√	√			√		
hyperuricemia			√	√	√			√		

Course Coordinator	To be nominated
Head of Department	prof. Dr/ Mohamed Elhusseiny <i>Mohamed Elhusseiny</i> Date: 7/9 /2023



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2023- 2024
Pharm D Program



بكالوريوس الصيدلة الإكلينيكية (فارم د – Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Pharmacotherapy of pediatric Diseases	اسم المقرر: العلاج الدوائي لأمراض الأطفال
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلانية
Head of Department: Prof. Dr. Mohamed Elhosseiny Shams	رئيس القسم: أ.د/ محمد الحسيني شمس
Course Coordinator: Dr. Hadeel Mohamed Abou-El-Enein	منسق المقرر: د/ هديل محمد أبو العينين



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D
Program

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. (PharmD) (Clinical Pharmacy)
Academic Level	Fifth level, second semester, 2023-2024
Date of course specification approval	7 th , September,2023

1-Basic Information: Course data:

Course Title	Pharmacotherapy of pediatric Diseases
Course Code	PP 010
Prerequisite	Pharmacology III
Credit Hours: Lecture	2
Practical sessions using 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



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

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.
1.1.6	1.1.6.1	Recognize updated scientific resources to make evidence-based clinical decisions.
1.1.10	1.1.10.1	Identify the different pharmacological and nonpharmacological options in management of various pediatric diseases.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Formulate pharmaceutical care plans for management of several pediatric disorders and drug-related problems with reference to their particulate health problems and special considerations.

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 education and counseling to patients, healthcare professionals and communities to achieve safe and cost-effective use of medicines.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

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

Week No.	Lecture Topics	Lecture Credit Hours
1	Sepsis: Signs and symptoms, Early versus late onset neonatal sepsis, Cerebrospinal fluid finding, Potential Empiric Antibiotic Regimens for Sepsis and Meningitis, Sequelae of Meningitis, Chemoprophylaxis of Bacterial Meningitis	2
2	meningitis: Signs and symptoms, Early versus late onset neonatal sepsis, Cerebrospinal fluid finding, Potential Empiric Antibiotic Regimens for Sepsis and Meningitis, Sequelae of Meningitis, Chemoprophylaxis of Bacterial Meningitis	2
3	Respiratory syncytial virus infection: Clinical Presentation, Risk Factors for Severe Disease, Prophylaxis, Treatment	2
4	Otitis media: Clinical Presentation, Risk factors, Common Pathogens, Signs & Symptoms, Treatment, Complications, Prevention Strategies	2
5	Immunization 1: Recommended Schedule, Combination vaccines, Interchangeability of products, Barriers to Routine Immunization	2
6	Immunization 2: Considerations in Special Populations	2
7	Pediatric seizure disorders: Incidence of Pediatric Seizures, Febrile Seizures, Treatment Options Based on Seizure Type,	2
8	Pediatric seizure disorders 2: Comparison of Available Antiseizure Drugs	2
9	Attention-deficit/hyperactivity disorder: Clinical Presentation, Classification, Treatment Options	2
10	Toxicology: Poison Control Center Overview; Pediatric Poisonings	2
11	Toxicology: Management of Select Agents; Select Antidotes	2



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

12	Pharmacokinetics: Changes in different pharmacokinetics processes	2
13	Changes in pharmacodynamics of drugs in pediatrics (self learning)	2
14	Drug dosing inn pediatrics	2
15	Compensatory and alternative lecture	2
16	Revision and quiz	2
17	Starting the final theoretical and oral exam	-



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

Week No.	Practical topics	Credit hours
1	Sepsis	1
2	meningitis	1
3	Respiratory syncytial virus infection	1
4	Otitis media	1
5	Immunization 1	1
6	Immunization 2	1
7	Pediatric seizure disorders	1
8	Midterm exam	-
9	Pediatric seizure disorders 2	1
10	Attention-deficit	1
11	hyperactivity disorder	1
12	Toxicology	1
13	Pharmacokinetics	1
14	Pharmacodynamics changes in pediatrics	1
15	Revision and activity	1
16	Practical exam applying OSCE	1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

5- Teaching and Learning Methods:

	Teaching and Learning Methods	Weeks No.	Key elements to be addressed
5.1	Computer aided and hybrid learning: a. Lectures using Data show, power Point presentations b. Distance learning <ul style="list-style-type: none"> Online learning through mymans "Mansoura university "as recorded – video lectures Inter active discussion through My Mans 	Week 1-16	1.1.1.1, 1.1.6.1, 1.1.10.1 2.2.5.1, 3.1.1.1, 3.2.4.1, 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 1-16	4.1.1.1, 4.3.2.1
5.4	Class Activity: Group discussion offline and online.	Week 1-14	4.1.1.1, 4.3.2.1
5.5	Problem – based learning and brainstorming	Week 1-14	4.1.1.1, 4.3.2.1
5.7	Role play	Week 14	4.1.1.1, 4.3.2.1

6- Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.1.1, 1.1.6.1, 1.1.10.1, 4.3.2.1
2-Practical exam applying OSCE	1.1.6.1, 2.2.5.1, 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, 1.1.6.1, 1.1.10.1, 4.3.2.1
4-Periodical (Mid-term exam/ Course work)	1.1.1.1, 1.1.6.1, 1.1.10.1

Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	7-9 th week
Assessment 2	Practical examination applying OSCE	16 th week
Assessment 3	Written exam	Starting from 17 th week
Assessment 4	Oral exam	Starting from 17 th week



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy
Program



Course specification
2022- 2023
Pharm D Program

a- 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%

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 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	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.pubmed.com https://www.ekb.eg	websites

9.1- Matrix of knowledge and skills of the course

Course contents				Outcomes Domains / Key elements										
				Domain 1			Domain 2		Domain 3				Domain 4	
1.1.1.1	1.1.6.1	1.1.10.1		2.2.5.1		3.1.1.1	3.2.4.1	3.2.5.1	3.2.5.1		4.1.1.1	4.3.2.1		
Sepsis				√		√	√		√		√	√	√	√
meningitis				√		√	√		√		√	√	√	√
Respiratory syncytial virus infection				√		√	√		√		√	√	√	√
Otitis media				√		√	√		√		√	√	√	√
Immunization 1				√		√	√		√		√	√	√	√
Immunization 2				√		√	√		√		√	√	√	√
Pediatric seizure disorders				√		√	√		√		√	√	√	√
Pediatric seizure disorders 2				√		√	√		√		√	√	√	√
Attention-deficit/hyperactivity disorder				√		√	√		√		√	√	√	√
Toxicology: Poison Control Center Overview; Pediatric Poisonings				√		√	√		√		√	√	√	√
Toxicology: Management of Select Agents; Select Antidotes				√		√	√		√		√	√	√	√
Pharmacokinetics				√		√	√		√		√	√	√	√
Pharmacodynamics changes in pediatrics				√		√	√		√		√	√	√	√
Drug dosing in pediatrics				√		√	√		√		√	√	√	√



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



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

Practical topics												Outcomes Domains / Key elements											
												Domain 1				Domain 2		Domain 3				Domain 4	
1.1.1.1	1.1.6.1	1.1.10.1		2.2.5.1		3.1.1.1	3.2.4.1	3.2.5.1		3.2.5.1		4.1.1.1	4.3.2.1										
Sepsis				√	√	√		√		√	√	√	√										
meningitis				√	√	√		√		√	√	√	√										
Respiratory syncytial virus infection				√	√	√		√		√	√	√	√										
Otitis media				√	√	√		√		√	√	√	√										
Immunization 1				√	√	√		√		√	√	√	√										
Immunization 2				√	√	√		√		√	√	√	√		√	√							
Pediatric seizure disorders				√	√	√		√		√	√	√	√		√	√							
Pediatric seizure disorders 2				√	√	√		√		√	√	√	√		√	√							
Attention-deficit hyperactivity disorder				√	√	√		√		√	√	√	√		√	√							



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

10	Toxicology	√	√	√	√	√	√	√	√	√	√
11	Pharmacokinetics	√	√	√	√	√	√	√	√	√	√
12	Pharmacodynamics changes in pediatrics	√	√	√	√	√	√	√	√	√	√



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

<p>9.2- Matrix 2. between course contents, methods of learning and assessment</p>	
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A) Theoretical Part:	Teaching and Learning Methods							Assessment methods			
	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Hybrid learning	Corse Work	Practical/Tutorial	Written	Oral
Sepsis	√	√					√			√	√
meningitis	√	√					√			√	√
Respiratory syncytial virus infection	√	√					√			√	√



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

Otitis media	√	√					√			√	√
Immunization 1	√	√					√			√	√
Immunization 2	√	√					√	√		√	√
Pediatric seizure disorders	√	√					√	√		√	√
Pediatric seizure disorders 2	√	√					√	√		√	√
Attention-deficit/hyperactivity disorder	√	√					√	√		√	√
Toxicology: Poison Control Center Overview; Pediatric Poisonings	√	√					√	√		√	√
Toxicology: Management of Select Agents; Select Antidotes	√	√					√	√		√	√
Pharmacokinetics	√	√					√	√		√	√
Pharmacodynamics changes in pediatrics	√	√		√	√	√	√	√	√	√	√
Drug dosing in pediatrics	√	√		√	√		√	√	√	√	√



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

B) Practical Part:											
Course Contents	Teaching and Learning Methods							Assessment methods			
	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Hybrid learning	Corse Work	Practical/Tutorial	Written	Oral
Sepsis			√	√	√		√		√		
meningitis			√	√	√		√		√		
Respiratory syncytial virus infection			√	√	√		√		√		
Otitis media			√	√	√		√		√		
Immunization 1			√	√	√		√		√		
Immunization 2			√	√	√		√	√	√		
Pediatric seizure disorders			√	√	√		√	√	√		
Pediatric seizure disorders 2			√	√	√		√	√	√		
Attention-deficit hyperactivity disorder			√	√	√		√	√	√		
Toxicology			√	√	√		√		√		
Pharmacokinetics			√	√	√		√		√		
Pharmacodynamics changes in pediatrics			√	√	√		√		√		
Course Coordinator	Dr. Hadeel Mohamed Abou-El-Eein										
Head of Department	Prof. Dr. Mohamed Elhosseiny Shams <i>Mohamed Elhusseiny</i> Date: 7/9 /2023										



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

الصيدلة الإكلينيكية (فارم دي-pharm D)

Course Specification

Academic year: 2023/2024

Course name: Pharmacotherapy of oncological diseases and Radiopharmacy	اسم المقرر: العلاج الدوائي لأمراض الأورام والصيدلة الإشعاعية
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلانية
Head of Department: Prof. Dr. Mohamed El-Husseiny Shams	رئيس القسم: أد/ محمد الحسيني السبيعي شمس
Course Coordinator:	منسق المقرر:



**Mansoura University Faculty of
Pharmacy Clinical Pharmacy
Program**



**Course specification
2023- 2024
Pharm D Program**

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. (PharmD) (Clinical Pharmacy)
Academic Level	Fifth level, second semester, 2023/2024
Date of course specification approval	2023-09-07

1- Basic Information: Course data:

Course Title	Pharmacotherapy of oncological diseases and Radiopharmacy
Course Code	PP 011
Prerequisite	Pharmacology III
Credit Hours: Lecture	2
Tutorial	1
Total Credit Hours	3 (Credit H)

2- Course Aims:

- Introduction to the different types of tumors (solid and hematological malignancies) and their staging
- Each type of malignancy will be addressed with respect to diagnosis and prognosis, treatment options and expected outcomes
- For chemotherapy, students will learn the toxic effects of chemotherapy and how to modify the chemotherapeutic regimens as clinical pharmacists to minimize adverse effects as much as possible.
- Regarding radiotherapy, students will be introduced to the various types of isotopes, their application in different malignancies and how to handle these isotopes safely in the work environment.



Mansoura University Faculty of
Pharmacy Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

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 oncological diseases.
1.1.6	1.1.6.1	Recognize different scientific resources to make evidence-based clinical decisions.
1.1.10	1.1.10.1	Identify the effect of different pharmacological and nonpharmacological options in management of various oncological 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	Formulate pharmaceutical care plans for management of oncological diseases and drug related problems with reference to their particulate health problems and special considerations



Mansoura University Faculty of
Pharmacy Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

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 oncological diseases.

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 chemotherapy and radiotherapy
4.3.2	4.3.2.1	Practice self-learning to improve professional skills



Mansoura University Faculty of
Pharmacy Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

4- Course Contents

A. Theoretical part:

Week No.	Lecture Topics	Lecture Credit Hours
1	Introduction: cell cycle, cell biology, basics of oncology, pathophysiology, staging	2
2	Cancer pathophysiology and staging	2
3	Acute leukemias: Definition, Types, Diagnosis and Assessment, Treatment	2
4	Chronic leukemias: Definition, Types, Diagnosis and Assessment, Treatment	2
5	Breast cancer: Definition, Types	2
6	Breast cancer: Diagnosis and Assessment, Treatment	2
7	Gynecologic Malignancies: Definition, Types	2
8	Gynecologic Malignancies: Diagnosis and Assessment, Treatment	2
9	Bone Marrow Transplantation: Introduction, Definition, Indications, Complications	2
10	Bone Marrow Transplantation: Indications, Complications	2
11	Lung cancer: Definition, Types, Diagnosis and Assessment, Treatment (self-learning)	2
12	Supportive care in oncology: Antiemetics	2
13	Supportive care in oncology: Pain Management (self learning)	2
14	Prevention of chemotherapy toxicities	2
15	Compensatory and alternative lecture	2



Mansoura University Faculty of
Pharmacy Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

16	Revision and quiz	2
17	Starting the Final Theoretical Exam	-

B. Tutorial part:

Week No.	Practical topics	Credit hours
1	Introduction	1
2	Cancer pathophysiology and staging	1
3	Acute leukemias	1
4	Chronic leukemias	1
5	Breast cancer: Part 1	1
6	Breast cancer: Part 2	1
7	Gynecologic Malignancies part 1	1
8	Mid-term exam	-
9	Gynecologic Malignancies part 2	1
10	Bone Marrow Transplantation: Part 1	1
11	Bone Marrow Transplantation: Part 2	1
12	Group project: Lung cancer	1
13	Supportive care in oncology part 1	1
14	Supportive care in oncology part2	1
15	Revision and activity	1
16	Tutorial exam applying OSCE	1



Mansoura University Faculty of
Pharmacy Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

5- Teaching and Learning Methods:

Teaching and learning method		Week no.	K. elements to be addressed
5.1	Hybrid learning: a. Lectures using Data show, power Point presentations b. Distance learning <ul style="list-style-type: none">● Online learning through my mans "Mansoura university "as recorded – video lectures● Inter active discussion through My Mans	Week 1-16	1.1.1.1, 1.1.6.1, 1.1.10.1
5.2	Self-learning	Week 11 & week 14	4.3.2.1
5.3	Practical session using tutorials	Week 1-16	2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1
5.4	Class Activity: Group discussion offline and online.	Week 5-14	4.1.1.1
5.5	Problem – based learning and brainstorming	Week 5-14	4.1.1.1, 4.3.2.1
5.7	Role play	Week 10	4.1.1.1, 4.3.2.1



Mansoura University Faculty of
Pharmacy Clinical Pharmacy
Program



Course specification
2023- 2024
Pharm D Program

6- Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.1.1, 1.1.6.1, 1.1.10.1
2-Tutorial exam	2.4.3.1, 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, 1.1.6.1, 1.1.10.1, 4.3.2.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.6.1, 1.1.10.1

b- Assessment schedule

Assessment 1	Periodical (Mid-term exam)	Week 7-9
Assessment 2	Tutorial examination	16 th week
Assessment 3	Written exam	Starting in Week 17
Assessment 4	Oral exam	Starting in Week 17

c- Weighing of assessments

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



**Mansoura University Faculty of
Pharmacy Clinical Pharmacy
Program**



**Course specification
2023- 2024
Pharm D Program**

7- Facilities required for teaching and learning

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

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	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.nccn.org/guidelines/category_1 http://www.sciencedirect.com/ http://www.google scholar.com/ http://www.pubmed.com https://www.ekb.eg	websites

9.1 Matrix 1. Course contents and course key elements

Course contents	Outcomes Domains / Key elements									
	Domain 1			Domain 2	Domain 3			Domain 4		
	1.1.1.1	1.1.6.1	1.1.10.1	2.4.3.1	3.1.1.1	3.2.4.1	3.2.5.1	4.1.1.1	4.3.2.1	
Introduction: cell cycle, cell biology, basics of oncology, pathophysiology, staging	√									
Cancer pathophysiology and staging	√									
Acute leukemias: Definition, Types, Diagnosis and Assessment, Treatment	√	√	√							
Chronic leukemias: Definition, Types, Diagnosis and Assessment, Treatment	√	√	√							

Breast cancer: Definition, Types	√	√	√								
Breast cancer: Diagnosis and Assessment, Treatment	√	√	√								
Gynecologic Malignancies: Definition, Types	√	√	√								
Gynecologic Malignancies: Diagnosis and Assessment, Treatment	√	√	√								
Bone Marrow Transplantation: Introduction, Definition, Indications, Complications	√	√	√								
Bone Marrow Transplantation: Indications, Complications	√	√	√								
Lung cancer: Definition, Types, Diagnosis and Assessment, Treatment (self- learning)	√	√	√								√
Supportive care in oncology: Antiemetics	√	√	√								
Supportive care in	√	√	√								

oncology: Pain Management											
Prevention of chemotherapy toxicities	√	√	√								√
B. Tutorial part:											
Tutorial topics:											
Introduction				√	√	√	√				
Cancer pathophysiology and staging				√	√	√	√				
Acute leukemias				√	√	√	√				
Chronic leukemias				√	√	√	√				
Breast cancer: Part 1				√	√	√	√		√	√	
Breast cancer: Part 2				√	√	√	√		√	√	
Gynecologic Malignancies part 1				√	√	√	√		√	√	
Gynecologic Malignancies				√	√	√	√		√	√	

part2											
Bone Marrow Transplantation: Part 1				√	√	√	√	√	√	√	√
Bone Marrow Transplantation: Part 2				√	√	√	√	√	√	√	√
Group project: Lung cancer				√	√	√	√	√	√	√	√
Supportive care in oncology part 1				√	√	√	√	√	√	√	√
Supportive care in oncology part2				√	√	√	√	√	√	√	√

9.2: Matrix 2. between course contents, methods of learning and assessment

A) Theoretical Part:												
Week No.	Course Contents	Teaching and Learning Methods							Assessment methods			
		Lecture	Hybrid learning	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Corse Work	Practical/Tutorial	Written	Oral
1	Introduction	√	√	√								√
2	Cancer pathophy siology and staging	√	√	√								√
3	Acute leukemias	√	√	√							√	√
4	Chronic leukemias	√	√	√							√	√
5	Breast cancer: Definition, Types	√	√	√		√					√	√
6	Breast cancer: Diagnosis and Assessment, Treatment	√	√	√		√			√		√	√



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

7	Gynecologic Malignancies: Definition, Types	√	√	√		√			√		√	√
8	Gynecologic Malignancies: Diagnosis and Assessment, Treatment	√	√			√			√		√	√
9	Bone Marrow Transplantation: Introduction, Definition	√	√			√			√		√	√
10	Bone Marrow Transplantation: Indications, Complications	√	√			√					√	√
11	Lung cancer: Definition, Types, Diagnosis and Assessment, Treatment (self-learning)	√	√	√		√		√			√	√



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

	Supportive care in oncology: Antiemetics	√	√	√								√	√
	Supportive care in oncology: Pain Management	√	√	√								√	√
	Prevention of chemotherapy toxicities	√	√	√								√	√



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

Introduction				√		√			√		
Cancer pathophysiology and staging				√		√			√		
Acute leukemias				√		√			√		
Chronic leukemias				√		√			√		
Breast cancer: Part 1				√		√			√		
Breast cancer: Part 2				√		√			√		
Gynecologic Malignancies part 1				√		√			√		
Gynecologic Malignancies part2				√		√			√		
Bone Marrow Transplantation: Part 1				√		√			√		



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

Group project: Lung cancer				√		√	√		√		
Supportive care in oncology part 1				√		√			√		
Supportive care in oncology part2				√		√			√		

Date: 07/ 09/ 2023

Course Coordinator	
Head of Department	Dr. Mohamed Shams <i>Mohamed Elhousseiny</i>



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



بكالوريوس الصيدلة الإكلينيكية فارم دي (PharmD)

Course Specification Academic year: 2023/2024

Course name: Pharmacotherapy of Gastrointestinal Diseases	اسم المقرر: العلاج الدوائي لأمراض الجهاز الهضمي
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلانية
Head of Department: Prof. Dr. Mohamed Elhusseiny Shams	رئيس القسم: أ.د/ محمد الحسيني شمس
Course Coordinator: Prof. Dr. Hassan el Askalany	منسق المقرر: أ.د/ حسن العسقلاني



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2022- 2023
Pharm D Program

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. (PharmD) (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	Pharmacotherapy of Gastrointestinal Diseases
Course Code	PP 012
Prerequisite	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.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2022- 2023
Pharm D Program

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.
1.1.6	1.1.6.1	Recognize different scientific resources to make evidence-based informed professional decisions.
1.1.10	1.1.10.1	Identify different pharmacological and nonpharmacological options in management of various disorder affecting gastro-intestinal system.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Formulate pharmaceutical care plans for acute and chronic diseases affecting gastro-intestinal system and drug related problems with reference to their particulate health problems and special considerations

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.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2022- 2023
Pharm D Program

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.

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	Gastroesophageal Reflux Disease (GERD) <i>Symptoms, Diagnosis, Treatment Strategies for GERD (Pharmacological and non-pharmacological), American College of Gastroenterology (ACG) Treatment Guideline Recommendation, Summary of Major Adverse Effects of PPIs and Prevention and Management Strategies, Role of clinical pharmacist in patient counselling regarding disease and drug therapies.</i>	2
2	Peptic Ulcer Disease (PUD) <i>Classification of (PUD), Complications of PUD, Patients at risk of NSAID-induced GI toxicity, Diagnosis.</i>	2
3	Peptic Ulcer Disease (PUD) - 2 <i>Treatment of H. pylori– associated ulcers, Primary prevention of NSAID-induced ulcers, D. Treatment and secondary prevention of NSAID-induced ulcers.</i>	2



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2022- 2023
Pharm D Program

4	Peptic Ulcer Disease (PUD)- 3 <i>Role of clinical pharmacist in patient counselling regarding peptic ulcer and drug therapies</i>	2
5	Upper GI Bleeding <i>Causes, Clinical Symptoms and Presentation, Management of ulcer-related GI bleeding, Prophylaxis of Stress-related injury in critically ill patients, Role of clinical pharmacist in patient counselling regarding disease and drug therapies</i>	2
6	Irritable Bowel Syndrome (self-learning) <i>Definition and pathophysiology, Diagnosis and Treatment strategies, Role of clinical pharmacist in patient counselling regarding disease and drug Therapies</i>	2
7	Complications of Liver Disease <i>Child-Turcotte-Pugh Classification of the Severity of Cirrhosis, Ascites, Hepaticencephalopathy,</i>	2
8	Complications of Liver Disease <i>Gastroesophageal varices, E. Spontaneous bacterial peritonitis (SBP), Hepatorenal syndrome, Alcoholic liver disease.</i>	2
9	Nausea and Vomiting <i>Pancreatitis: Classification and pathophysiology, Diagnosis and Treatment strategies Diarrhea-Constipation: Classification and pathophysiology, Diagnosis and Treatment strategies</i>	2
10	Viral hepatitis HAV and HBV <i>Diagnosis, Clinical Presentation, Treatment and prevention strategies, Role of clinical pharmacist in patient counselling regarding disease and drug therapies</i>	2



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2022- 2023
Pharm D Program

11	HCV <i>Diagnosis, Clinical Presentation, Treatment and prevention strategies, Role of clinical pharmacist in patient counselling regarding disease and drug therapies</i>	2
12	Inflammatory Bowel Disease (IBD) <i>Clinical Features of Inflammatory Bowel Disease, C. Medical management of IBD: adjunctive therapies, Medications used to treat IBD.</i>	2
13	Inflammatory Bowel Disease (IBD)-2 <i>Guideline definitions of UC distribution, medical management of Crohn's disease, Role of clinical pharmacist in patient counselling regarding disease and drug therapies (Self learning)</i>	2
14	Complications of inflammatory diseases	2
15	Compensatory and alternative lecture	2
16	Revision and quiz	2
17	Starting the Final written and oral exam



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2022- 2023
Pharm D Program

Week No .	Practical 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	Case presentation: Complications of Liver Disease part1	1
6	Case presentation: Complications of Liver Disease part2	1
7	Case presentation Nausea and Vomiting	1
8	Mid-term exam	-
9	Case presentation Pancreatitis	1
10	Case presentation Diarrhea-Constipation	1
11	Case presentation: Viral hepatitis part1	1
12	Case presentation: Viral hepatitis part2	1
13	Case presentation: Inflammatory Bowel Disease (IBD)	1
14	Case presentations :Complications of IBD	1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy Program



Course specification
2022- 2023
Pharm D Program

15	Revision and activity	1
16	Sheet / and tutorial exam applying OSCE	1

5- Teaching and Learning Methods:

	Teaching and learning method	Week no.	Key element to be addresses
5.1	Hybrid learning and Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning <ul style="list-style-type: none"> Online learning through My Mans "Mansoura university "as recorded – video lectures Inter active discussion through My Mans 	Week 1-16	1.1.1.1, 1.1.6.1, 1.1.10.1, 2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1
5.2	Self-learning	Week 6 & week 14	4.3.2.1
5.3	Practical sessions using tutorials	Week 1-16	2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
5.4	Class Activity: Group discussion offline and online	Week 1-14	4.1.1.1, 4.3.2.1

5- Student Assessment:

a- Assessment Methods:

1-Written exam	1.1.1.1, 1.1.6.1, 1.1.10.1, 2.4.3.1, 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, 1.1.6.1, 1.1.10.1, 2.4.3.1, 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, 1.1.6.1, 1.1.10.1, 2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.6.1, 1.1.10.1, 2.4.3.1, 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) / Course Work	Week 7-9
Assessment 2	Tutorial examination	16th week
Assessment 3	Written exam	Start from Week 17
Assessment 4	Oral exam	Start from Week 17

c- Weighing of assessments

1	Periodical (Mid-term exam) / Course work	15%
2	Tutorial examination	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
Library	Books and mobile applications
Hospital	Gastroenterology rounds

8- Matrix of knowledge and skills of the course

Course contents	Outcomes Domains / Key elements								
	Domain 1			Domain 2	Domain 3			Domain 4	
	1.1.1.1	1.1.6.1	1.1.10.1	2.4.3.1	3.1.1.1	3.2.4.1	3.2.5.1	4.1.1.1	4.3.2.1
Gastroesophageal Reflux Disease (GERD)	√	√	√	√	√	√	√	√	
Peptic Ulcer Disease (PUD)	√	√	√	√	√	√	√	√	
Peptic Ulcer Disease (PUD) - 2	√	√	√	√	√	√	√	√	
Peptic Ulcer Disease (PUD)- 3	√	√	√	√	√	√	√	√	
Upper GI Bleeding	√	√	√	√	√	√	√	√	
Irritable Bowel Syndrome (self-learning)	√	√	√	√	√	√	√	√	√
Complications of Liver Disease <i>Child-Turcotte-Pugh Classification of the Severity of Cirrhosis, Ascites, Hepatic encephalopathy</i>	√	√	√	√	√	√	√	√	
Complications of Liver Disease <i>Gastroesophageal varices, E. Spontaneous bacterial peritonitis (SBP), Hepatorenal syndrome, Alcoholic liver disease.</i>	√	√	√	√	√	√	√	√	

Course contents	Outcomes Domains / Key elements									
	Domain 1			Domain 2	Domain 3			Domain 4		
	1.1.1.1	1.1.6.1	1.1.10.1	2.4.3.1	3.1.1.1	3.2.4.1	3.2.5.1	4.1.1.1	4.3.2.1	
Nausea and Vomiting	√	√	√	√	√	√	√	√		
Viral hepatitis HAV, HBV	√	√	√	√	√	√	√	√		
Viral hepatitis HCV	√	√	√	√	√	√	√	√		
Inflammatory Bowel Disease (IBD)	√	√	√	√	√	√	√			
Inflammatory Bowel Disease (IBD)-2 (Self learning)	√	√	√	√	√	√	√		√	
Complications of inflammatory diseases	√	√	√	√	√	√	√		√	

B) Tutorial part:

Course contents	Outcomes Domains / Key elements									
	Domain 1			Domain 2	Domain 3			Domain 4		
	1.1.1.1	1.1.6.1	1.1.10.1	2.4.3.1	3.1.1.1	3.2.4.1	3.2.5.1	4.1.1.1	4.3.2.1	
Case presentation: Gastroesophageal Reflux Disease (GERD)	√	√	√	√	√	√	√	√	√	√
Case presentation: Peptic Ulcer Disease	√	√	√	√	√	√	√	√	√	√
Case presentation: Upper GI Bleeding	√	√	√	√	√	√	√	√	√	√
Group project: irritable bowel syndrome	√	√	√	√	√	√	√	√	√	√
Case presentation: Complications of Liver Disease part1	√	√	√	√	√	√	√	√	√	√
Case presentation: Complications of Liver Disease part2	√	√	√	√	√	√	√	√	√	√
Case presentation Nausea and Vomiting	√	√	√	√	√	√	√	√	√	√
Case presentation Pancreatitis	√	√	√	√	√	√	√	√	√	√

Case presentation Diarrhea- Constipation	√	√	√		√		√	√	√		√	√
Case presentation: Viral hepatitis part1	√	√	√		√		√	√	√		√	√
Case presentation: Viral hepatitis part2	√	√	√		√		√	√	√		√	√
Case presentation: Inflammatory Bowel Disease (IBD)	√	√	√		√		√	√	√		√	√
Case presentations :Complications of IBD	√	√	√		√		√	√	√		√	√

Matrix 2. between course contents, methods of learning and assessment										
A) Theoretical Part:										
Course Contents	Teaching and Learning Methods						Assessment methods			
	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/Tutorial	Written	Oral
Gastroesophageal Reflux Disease (GERD)	√		√						√	√
Peptic Ulcer Disease (PUD)	√		√						√	√
Peptic Ulcer Disease (PUD) - 2	√		√	√					√	√
Peptic Ulcer Disease (PUD)- 3	√		√	√					√	√
Upper GI Bleeding	√		√	√					√	√
Irritable Bowel Syndrome (self-learning)	√		√	√		√	√		√	√
Complications of Liver Disease										
<i>Child-Turcotte-Pugh Classification of the Severity of Cirrhosis, Ascites, Hepatic encephalopathy,</i>	√		√	√			√		√	√
Complications of Liver Disease <i>Gastroesophageal varices, E. Spontaneous bacterial peritonitis (SBP), Hepatorenal syndrome, Alcoholic liver disease.</i>	√		√	√			√		√	√
Nausea and Vomiting	√		√	√			√		√	√
Viral hepatitis A- HAV, HBV	√		√	√					√	√
Viral hepatitis HCV	√		√	√					√	√
Inflammatory Bowel Disease (IBD)	√		√	√					√	√
Inflammatory Bowel Disease (IBD)-2 (Self learning)	√		√	√		√			√	√
Complications of ibd	√		√	√		√			√	√



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

B) Practical Part:											
Course Contents	Teaching and Learning Methods						Assessment methods				
	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/Tutorial	Written	Oral	
• Case presentation: Gastroesophageal Reflux Disease (GERD)			√	√	√			√			
• Case presentation: Peptic Ulcer Disease			√	√	√			√			
Case presentation: Upper GI Bleeding			√	√	√			√			
Group project: irritable bowel syndrome			√	√	√			√			
• Case presentation: Complications of Liver Disease part1			√	√	√		√	√			
• Case presentation: Complications of Liver Disease part2			√	√	√		√	√			
Case presentation • Nausea and Vomiting			√	√	√		√	√			
Case presentation • Pancreatitis			√	√	√		√	√			
Case presentation Diarrhea-Constipation			√	√	√		√	√			
Case presentation: Viral hepatitis part1			√	√	√		√	√			
Case presentation: Viral hepatitis part2			√	√	√		√	√			
Case presentation: Inflammatory Bowel Disease (IBD)			√	√	√			√			
Case presentations :Complications of IBD			√	√	√			√			



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

9-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.	<ul style="list-style-type: none">• https://www.ekb.eg/.• https://go.wolterskluwer.com/lexicomp-drug-references-int-b.html?utm_source=google&utm_medium=cpc&utm_campaign=n=ALL_Lexicomp_INT_Brand&utm_content=001-ETA-Brand_Exact&utm_term=lexicomp&gclid=CjwKCAjwhuCKBhAD EiwA1HegOa3V40mlNyAwkxXqqD-MhuJqRWNSUDOi7AIREiUFqTghXadDjRSaGBoC2GcQAvD_BwE• https://accesspharmacy.mhmedical.com/• http://www.sciencedirect.com• https://scholar.google.com/• http://www.pubmed.com	Website

Course Coordinator	Prof. Dr. Hassan El Askalany
Head of Department	Dr. Mohamed Elhusseiny Shams
	<i>Mohamed Elhusseiny</i> 7/9/2023



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



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



بكالوريوس الصيدلة الإكلينيكية (فارم د – Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Pharmacotherapy of Respiratory Diseases	اسم المقرر: العلاج الدوائي لأمراض الجهاز التنفسي
Academic Level: Level 5	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلانية
Head of Department: Prof. Dr. Mohamed Elhousseiny Shams	رئيس القسم: أ.د/ محمد الحسيني السبيعي شمس
Course Coordinator:	منسق المقرر:



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

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. (PharmD) (Clinical Pharmacy)
Academic Level	Fifth level, 2 nd semester, 2023/2024
Date of course specification approval	7/9/2023

Basic Information: Course data:

Course Title	Pharmacotherapy of Respiratory Diseases
Course Code	PP 013
Prerequisite	Pharmacology II
Credit Hours: Lecture	2
Tutorial	1
Total Credit Hours	3 (Credit H)



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

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.

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.
1.1.6	1.1.6.1	Recognize different scientific resources to make evidence-based informed professional decisions.
1.1.10	1.1.10.1	Identify the different pharmacological and nonpharmacological options in management of various disorder affecting respiratory system.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.4.3	2.4.3.1	Formulate pharmaceutical care plans for acute and chronic diseases affecting respiratory system and drug related problems with reference to their particulate health problems and special considerations



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

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 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



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

4- Course Contents

A. Theoretical part:

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



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

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	Compensatory and alternative lecture	2
16	Revision and quiz	2
17	Final theoretical exam	-



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

B. Tutorial part:

Week No.	Practical 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	Group project: lower respiratory tract infections	1
13	Drug-induced pulmonary problems, Part 1	1
14	Drug-induced pulmonary problems, Part 2	1
15	Revision and activity	1
16	Tutorial exam applying OSCE	1



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

5- Teaching and Learning Methods:

Teaching and learning methods		Week no.	K. element to be addressed
5.1	Hybrid learning: Lectures using Data show, power Point presentations Distance learning Online learning through my mans "Mansoura university "as recorded – video lectures Inter active discussion through My Mans	Week 1-16	1.1.1.1, 1.1.6.1, 1.1.10.1
5.2	Self-learning	Week 10 & week 13	4.3.2.1
5.3	Practical session using tutorials	Week 1-16	2.4.3.1, 3.1.1.1, 3.2.4.1, 3.2.5.1, 4.1.1.1, 4.3.2.1
5.4	Class Activity: Group discussion offline and online.	Week 5-13	4.1.1.1
5.5	Problem – based learning and brainstorming	Week 5-13	4.1.1.1, 4.3.2.1
5.7	Role play	Week 9	4.1.1.1, 4.3.2.1



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

6- Student Assessment:

Assessment Methods:

1-Written exam	1.1.1.1, 1.1.6.1, 1.1.10.1
2-Tutorial exam	2.4.3.1, 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, 1.1.6.1, 1.1.10.1, 4.3.2.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.6.1, 1.1.10.1

Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	Week 7-9
Assessment 2	Tutorial examination	16th week
Assessment 3	Written exam	Start from Week 17
Assessment 4	Oral exam	Start from Week 17

Weighing of assessments

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



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

7- Facilities required for teaching and learning

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

List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course
2.	Recorded videos prepared by staff members	Videos on platform
3.	DiPiro's Pharmacotherapy: A Pathophysiologic Approach, Twelfth Edition, Joseph T. DiPiro, Gary C. Yee, L. Michael Posey, Stuart T. Haines, Thomas D. Nolin Published: April 2023 ISBN: 978-1-264-26454-4	Essential Book
4.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	websites



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

Course contents	Outcomes Domains / Key elements									
	Domain 1			Domain 2	Domain 3			Domain 4		
	1.1.1.1	1.1.6.1	1.1.10.1	2.4.3.1	3.1.1.1	3.2.4.1	3.2.5.1	4.1.1.1	4.3.2.1	
A. Theoretical part:										
Bronchial Asthma 1	√									
Bronchial Asthma 2		√	√							
Bronchial Asthma 3		√	√							
Chronic obstructive pulmonary disease 1: Definition and Diagnosis	√	√	√							
Chronic obstructive pulmonary disease 2: Assessment, Factors Determining Severity of COPD	√	√	√							
Chronic obstructive pulmonary disease 3: Therapy Goals, Management	√	√	√							



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

Chronic obstructive pulmonary disease 4:	√	√	√							
Management of Acute Exacerbations of Chronic COPD										
Pulmonary hypertension	√	√	√							
Cystic fibrosis, Part 1	√	√	√							
Cystic fibrosis, Part 2	√	√	√							
Upper and lower respiratory tract infections: Definition, Types (self-learning)	√	√	√							√
Upper and lower respiratory tract infections: Diagnosis and Assessment, Treatment	√	√	√							√
Drug-induced pulmonary problems: Definition, Diagnosis	√	√	√							



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

Drug-induced pulmonary problems: Assessment, Treatment	√	√	√								
Compensatory and alternative lecture	√	√	√								
B. Tutorial part:											
Bronchial Asthma: diagnosis, classification of severity and control				√		√	√	√		√	√
Bronchial Asthma: pharmacologic treatment				√		√	√	√		√	√
Bronchial Asthma: Guidelines, action plan and exacerbation				√		√	√	√		√	√
Chronic obstructive pulmonary disease 1				√		√	√	√		√	√
Chronic obstructive pulmonary disease 2				√		√	√	√		√	√



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

Chronic obstructive pulmonary disease 3					√		√	√	√		√	√
Pulmonary hypertension					√		√	√	√		√	√
Cystic fibrosis part 1					√		√	√	√		√	√
Cystic fibrosis part 2					√		√	√	√		√	√
Group project: Upper respiratory tract infections					√		√	√	√		√	√
Group project: lower respiratory tract infections					√		√	√	√		√	√
Drug-induced pulmonary problems, Part 1					√		√	√	√		√	√
Drug-induced pulmonary problems, Part 2					√		√	√	√		√	√



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

9.2- Matrix 2. between course contents, methods of learning and assessment

A) Theoretical Part:

Course Contents	Teaching and Learning Methods							Assessment methods			
	Lecture	Hybrid learning	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/Tutorial	Written	Oral
Bronchial Asthma 1	√	√						√		√	√
Bronchial Asthma 2	√	√						√		√	√
Bronchial Asthma 3	√	√						√		√	√
Chronic obstructive pulmonary disease 1: Definition and Diagnosis	√	√						√		√	√
Chronic obstructive pulmonary disease 2: Assessment, Factors Determining Severity of COPD	√	√						√		√	



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

Chronic obstructive pulmonary disease 3: Therapy Goals, Management of Stable COPD	√	√						√		√	
Chronic obstructive pulmonary disease 4: Management of Acute Exacerbations of Chronic COPD	√	√						√		√	
Pulmonary hypertension	√	√								√	√
Cystic fibrosis, Part 1	√	√								√	√
Cystic fibrosis, Part 2	√	√								√	√
Upper and lower respiratory tract infections: Definition, Types (self-learning)	√	√								√	√



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

Upper and lower respiratory tract infections: Diagnosis and Assessment, Treatment	√	√								√	√
Drug-induced pulmonary problems: Definition, Diagnosis	√	√								√	√
Drug-induced pulmonary problems: Assessment, Treatment	√	√								√	√
Compensatory and alternative lecture	√	√								√	√



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

B) Tutorial Part:

Course Contents	Teaching and Learning Methods							Assessment methods			
	Lecture	Hybrid learning	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical/Tutorial	Written	Oral
Bronchial Asthma: diagnosis, classification of severity and control				√		√			√		
Bronchial Asthma: pharmacologic treatment				√		√			√		
Bronchial Asthma: Guidelines, action plan and exacerbation				√		√			√		
Chronic obstructive pulmonary disease 1				√		√			√		



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

Chronic obstructive pulmonary disease 2				√		√			√		
Chronic obstructive pulmonary disease 3				√		√			√		
Pulmonary hypertension				√		√			√		
Mid-term											
Cystic fibrosis part1				√		√			√		
Cystic fibrosis part 2											
Group project: lower respiratory tract infections				√	√	√	√		√		



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

Drug-induced pulmonary problems, Part 1				√		√			√		
Drug-induced pulmonary problems, Part 2				√		√			√		

Course Coordinator	
Head of Department	Prof. Dr. Mohamed Shams
	<i>Mohamed Elhusseiny</i> Date: 07/ 09/ 2023



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

بكالوريوس الصيدلة الإكلينيكية (فارم د-Pharm D)

Course Specification Academic year: 2023/2024

Course name: Clinical Research and Pharmacovigilance	اسم المقرر: البحث الإكلينيكي واليقظة الدوائية
Academic Level: Fifth Level	المستوى الأكاديمي: الخامس
Scientific department: Clinical Pharmacy and Pharmacy Practice	القسم العلمي: الصيدلة الإكلينيكية والممارسة الصيدلانية
Head of Department: Prof. Dr. Mohamed Elhosseiny Shams	رئيس القسم: أ.د/ محمد الحسيني شمس
Course Coordinator:	منسق المقرر:



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

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

Basic Information: Course data:

Course Title	Clinical Research and Pharmacovigilance
Course Code	PP 014
Prerequisite	Drug Information
Credit Hours: Lecture	1
Tutorial	1
Total Credit Hours	2 (Credit H)

Professional Information:

1- Course Aims:

This course presents the basic fundamentals of clinical research, types of research studies, statistical analysis. In addition, it presents concept of pharmacovigilance, and adverse drug reporting systems.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

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	Describe the different types of research study, statistical analysis used in clinical trials, and awareness of pharmacovigilance.
1.1.6	1.1.6.1	Evaluate most updated medical information to help healthcare professional in their decisions.
1.1.7	1.1.7.1	Locate most recent trusted resources to gather patient specific information.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.5.2	2.5.2.1	Integrate recent clinical guidelines to patient case scenario.
2.5.4	2.5.4.1	Interpret various types of clinical studies and discriminate the advantages and disadvantages of each type.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

DOMAIN 3: PHARMACEUTICAL CARE

Program K. element no.	Course K. element no.	Course K. element
3.2.3	3.2.3.1	Use case reports and case series to figure out rare adverse events.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.1.1	4.1.1.1	Participate in journal club activity to improve presentation and communication skills.
4.2.1	4.2.1.1	Apply scientific writing skills and communication skills with patients, other health team and communities.
4.3.1	4.3.1.1	Adopt effective strategies to for continuous education.
4.3.2	4.3.2.1	Improve self-learning techniques as part of continuous education.



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

4- Course Contents

A. Theoretical part:

Week No.	Lecture Topics	Lecture Credit Hours
1.	Research types and design Randomized controlled trials	1
2.	Research types and design: Cohort study	1
3.	Research types and design Case control study Cross sectional study. Case report and case series.	1
4.	Different types of bias. Definition Examples of different types	1
5.	Different types of bias. Controlling bias	1
6.	Confounders in clinical trials, Part 1 Definition Examples	1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

7.	Confounders in clinical trials, Part 2 How to control confounders.	1
8.	Statistical analysis in different types of clinical trials, Part 1 Mean, median, confidence interval.	1
9.	Statistical analysis in different types of clinical trials, Part 2 Incidence, prevalence, relative risk/risk ratios, and odds ratios.	1
10.	Critical appraisal of controlled randomized trial, Part 1 CASP check list	1
11.	Critical appraisal of controlled randomized trial, Part 2 CASP check list	1
12.	Role of clinical pharmacist in Pharmacovigilance Definition	1
13.	Role of clinical pharmacist in Pharmacovigilance Spontaneous adverse drug reporting system	1
14.	Role of clinical pharmacist in Pharmacovigilance Yellow card component Self-learning, discussion, and revision	1
15.	Compensatory and alternative lecture	1
16.	Revision and quiz	1
17.	Final theoretical and oral exam	-



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

B. Tutorial part:

Week No.	Practical topics	Credit hours
1	Research types and design, Part 1	1
2	Research types and design, Part 2	1
3	Different types of bias, Part 1	1
4	Different types of bias, Part 2	1
5	Confounders in clinical trials part 1	1
6	Confounders in clinical trials part 2	
7	Statistical analysis in different types of clinical trials, Part 1	1
8	Mid-term exam	-
9	Statistical analysis in different types of clinical trials, Part 2	1
10	Critical appraisal of controlled randomized trial, Part 1	1
11	Critical appraisal of controlled randomized trial, Part 2	1
12	Role of clinical pharmacist in Pharmacovigilance, Part 1	1
13	Role of clinical pharmacist in Pharmacovigilance, Part 2	1
14	Role of clinical pharmacist in Pharmacovigilance, Part 3	1
15	Revision and activity	1
16	Tutorial exam applying OSCE	1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

Teaching and Learning Methods:

Teaching and learning methods		Week no.	K. element to be addressed
5.1	Computer aided and hybrid learning: Lectures using Data show, power point presentations. Distance learning Online learning through mymans "Mansoura University "as recorded – video lectures Interactive discussion through My Mans	Week 1-16	1.1.1.1, 1.1.6.1, 1.1.7.1
5.2	Self-learning	Week 13	4.3.2.1
5.3	Practical session using tutorials	Week 1-4	2.5.2.1, 2.5.4.1, 3.2.3.1
		Week 5-16	2.5.2.1, 2.5.4.1, 3.2.3.1, 4.1.1.1, 4.2.1.1, 4.3.1.1, 4.3.2.1
5.4	Class Activity: Group discussion offline and online.	Week 5-13	4.1.1.1
5.6	Research assignments	Week 5-13	4.1.1.1, 4.2.1.1, 4.3.1.1, 4.3.2.1



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

Student Assessment:

Assessment Methods:

1-Written exam	1.1.1.1/ 1.1.6.1/1.1.7.1/3.2.3.1
2-Tutorial exam	2.5.2.1/2.5.4.1/3.2.3.1/ /4.1.1.1/4.2.1.1/4.3.1.1/ 4.3.2.1
3-Oral	1.1.1.1/1.1.6.1/1.1.7.1/2.5.2.1/2.5.4.1/3.2.3.1/4.2.1.1/4.3.1.1/ 4.3.2.1
4-Periodical (Mid-term exam) / Course work	1.1.1.1/ 1.1.6.1/3.2.3.1

Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	Week 7-9
Assessment 2	Practical examination and tutorial	Week 16
Assessment 3	Written exam	Start from Week 17
Assessment 4	Oral exam	Start from Week 17

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%



Mansoura University
Faculty of Pharmacy
Clinical Pharmacy



Course
specification
2023- 2024

7- Facilities required for teaching and learning

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

8-List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos by staff member	Videos on platform
3.	Kevin M. Sowinski, Study Designs: Fundamentals, Interpretation, and Research Topics, ACCP Updates in Therapeutics ® 2018 Pharmacotherapy	Essential Book
4.	Tom Brody, Clinical Trials, second edition 2016	Essential Book
5.	Stephen B. Hulley, Steven R. Cummings, Warren S. Browner, et al. Designing Clinical Research, fourth edition 2013	Essential Book
6.	https://www.ekb.eg/ http://www.sciencedirect.com/ http://www.scholar.google.com/ http://www.pubmed.com/	Websites

9.1 - Matrix of knowledge and skills of the course

A. Theoretical part:

Course contents	Outcomes Domains / Key elements									
	Domain 1			Domain 2		Domain 3	Domain 4			
	1.1.1.1	1.1.6.1	1.1.7.1	2.5.2.1	2.5.4.1	3.2.3.1	4.1.1.1	4.2.1.1	4.3.1.1	4.3.2.1
Research types and design Randomized controlled trials	√					√				
Research types and design Cohort study	√					√				
Research types and design Case control study Cross sectional study. Case report and case	√									

series.												
Different types of bias. Definition												
Examples of different types	√	√										
Different types of bias. Controlling bias	√	√										
Confounders in clinical trials, Part 1 Definition	√	√										
Examples												
Confounders in clinical trials, Part 2 How to control Confounders.	√	√										
Statistical analysis in	√											

different types of clinical trials, Part 1 Mean, median, confidence interval.													
Periodical/Mid-term exam													
Statistical analysis in different types of clinical trials, Part 2 Incidence, prevalence, relative risk/risk ratios, and odds ratios.	√												
Critical appraisal of controlled randomized trial, Part 1 CASP check list	√	√											
Critical appraisal of controlled randomized trial, Part 2	√	√											

CASP check list													
Role of clinical pharmacist in Pharmacovigilance Definition	√		√										
Role of clinical pharmacist in Pharmacovigilance Spontaneous adverse drug reporting system	√		√										
Role of clinical pharmacist in Pharmacovigilance Yellow card component	√		√										

B. Tutorial part:

Course contents	Outcomes Domains / Key elements									
	Domain 1			Domain 2		Domain 3	Domain 4			
	1.1.1.1	1.1.6.1	1.1.7.1	2.5.2.1	2.5.4.1	3.2.3.1	4.1.1.1	4.2.1.1	4.3.1.1	4.3.2.1
Research types and design, Part 1				√	√	√				
Research types and design, Part 2				√	√	√				
Different types of bias, Part 1				√	√	√				
Different types of bias, Part 2				√	√	√				
Confounders in clinical trials				√	√	√	√		√	√
Confounders in clinical trials				√	√	√	√		√	√
Statistical analysis in different types of clinical trials, Part 1				√	√	√	√		√	√
Statistical analysis in different types of clinical trials, Part 2				√	√	√	√		√	√
Critical appraisal of controlled randomized trial, Part 1				√	√	√	√		√	√
Critical appraisal of controlled randomized trial, Part 2				√	√	√	√		√	√

Role of clinical pharmacist in Pharmacovigilance, Part 1					√	√		√		√		√	√
Role of clinical pharmacist in Pharmacovigilance, Part 2					√	√		√		√		√	√
Role of clinical pharmacist in Pharmacovigilance, Part 3					√	√		√		√		√	√

A) Theoretical Part:

Week No.	Course Contents	Teaching and Learning Methods						Assessment methods				
		Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Hybrid learning	Course Work	Practical/Tutorial	Written	Oral
1.	Research types and design Randomized controlled trials	√						√			√	√
2.	Research types and design Cohort study	√						√			√	√
3.	Research types and design Case control study Cross sectional study. Case report and case series.	√						√			√	√
4.	Different types of bias. Definition Examples of different types	√						√			√	√

5.	Different types of bias. Controlling bias	√						√			√	√
6.	Confounders in clinical trials, Part 1 Definition Examples	√			√			√			√	√
7.	Confounders in clinical trials, Part 2 How to control confounders.	√			√			√	√		√	√
8.	Statistical analysis in different types of clinical trials, Part 1 Mean, median, confidence interval.	√			√			√	√		√	√
9.	Statistical analysis in different types of clinical trials, Part 2 Incidence, prevalence, relative risk/risk ratios, and odds ratios.	√			√			√			√	√

Course Contents		Teaching and Learning Methods						Assessment methods				
10.	Critical appraisal of controlled randomized trial, Part 1 CASP check list	√			√			√	√		√	√
11.	Critical appraisal of controlled randomized trial, Part 2 CASP check list	√			√			√			√	√
12.	Role of clinical pharmacist in Pharmacovigilance Definition	√			√			√			√	√
13.	Role of clinical pharmacist in Pharmacovigilance Spontaneous adverse drug reporting system	√			√			√			√	√
14.	Role of clinical pharmacist in Pharmacovigilance Yellow card component	√			√			√			√	√
15.	Compensatory and alternative lecture	√	√		√		√	√			√	√

	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Corse Work	Practical /Tutorial	Written	Oral
Research types and design, Part 1			√		√			√		
Research types and design, Part 2			√		√			√		
Different types of bias, Part 1			√		√			√		
Different types of bias, Part 2			√		√			√		
Confounders in clinical trials			√		√			√		
Confounders in clinical trials			√		√			√		
Statistical analysis in different types of clinical trials, Part 1			√		√			√		
Statistical analysis in different types of clinical trials, Part 2			√		√			√		
Critical appraisal of controlled randomized trial, Part 1			√		√			√		
Critical appraisal of controlled randomized trial, Part 2			√		√			√		

Role of clinical pharmacist in Pharmacovigilance, Part 1			√		√			√		
Role of clinical pharmacist in Pharmacovigilance, Part 2			√		√			√		
Role of clinical pharmacist in Pharmacovigilance, Part 3			√		√			√		

Course Coordinator	
Head of Department	Prof. Dr. Mohamed Elhusseiny
	<i>Mohamed Elhusseiny</i> Date: 7/9/2023



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