توصيف مقررات

برنامج الصيدلة الاكلينيكية لائحة فارم دى

للعام الجامعى 2024/2023

المستوى الأول

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بكالوريوس الصيدلة الإكلينيكية - فارم دى
Pharm D-Clinical Pharmacy
Course Specification
Academic year: 2023/2024

Course name: Pharmaceutical Analytical Chemistry I	اسم المقرر: كيمياء تحليلية صيدلية 1
Academic Level: level one	المستوى الأكاديمي : الأول
Scientific department: Pharmaceutical analytical chemistry	القسم العلمي : الكيمياء التحليلية الصيدلية
Head of Department: Prof. Dr. Jenny Jeehan Mohamed Ahmed Nasr	رئيس القسم : أ.د/ جيني جيهان محمد أحمد نصر
Course Coordinator: Prof. Dr. Manal Eid	منسق المقرر : ا.د/ منال عيد

University	**Mansoura University**
Faculty	**Faculty of Pharmacy**
Department offering the course	**Pharmaceutical analytical chemistry**
Department supervising the course	**Pharmaceutical analytical chemistry**
Program on which the course is given	**Pharm D-Clinical Pharmacy Program**
Academic Level	**First level, First semester, 2023-2024**
Date of course specification approval	**10th September, 2023**

A. Basic Information: Course data:

Course Title	Pharmaceutical Analytical Chemistry I
Course Code	PC 101
Prerequisite	Registration
Teaching credit Hours: Lecture	2
: Practical	1
Total Credit Hours	3

B. Professional Information:

1. Course Aims:

Demonstrate the basic concepts of physical chemistry regarding some topics such as the rate of reaction, kinetics of chemical reactions.

Recognize the basic principle of inorganic chemistry including chemical equilibrium, types of reactions, solubility product constant, conversion factor, electrolytes, acid-base reactions, and metathesis reactions.

The course provides the basic concepts of quantitative chemical methods of analysis, including acid-base titration, non-aqueous titration, precipitation titration.

The course also covers the application of these methods to pharmaceutical compounds.

2- Course k. elements:

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

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
(1.1.1)	(1.1.1.1)	Recognize in-depth and breadth the principles of basic and pharmaceutical sciences and clarify the theory and principles of acid-base, non-aqueous and precipitation methods of analysis.
(1.1.3)	(1.1.3.1)	Analyze and assure quality of pharmaceutical raw materials and finished products

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
(2.2.1)	(2.2.1.1)	Select and apply different analytical methods to analyze pharmaceutical materials and identify impurities if present.
(2.2.3)	(2.2.3.1)	Demonstrate the principles of various analytical methods and apply proper one to assess raw materials and pharmaceutical products.
(2.2.4)	(2.2.4.1)	Implement calculations to assess the chemical kinetics of pharmaceutical compounds and calculate the expiry date of such compounds for assessing their stability. Explain the principles of pharmaceutical calculations and their applications to pharmaceutical analysis
(2.3.1)	(2.3.1.1)	Select and apply proper handling and disposal of chemical compounds and materials used in pharmaceutical analysis.
(2.3.2)	(2.3.2.1)	Choose best practices and adhere to high ethical and safety standards for management of chemical compounds and pharmaceutical materials

Domain 4

Program K. element no.	Course K. element no.	Course K. element
(4.1.2)	(4.1.2.1)	Retrieve and analyze information to solve problems and work individually or effectively in a team.
(4.2.2)	(4.2.2.1)	Apply artificial technology whenever possible to present relevant information.
(4.3.1)	(4.3.1.1)	Use effective strategies to manage and improve self-practice of pharmacy.
(4.3.2)	(4.3.2.1)	Practice self-learning needed to improve professional skills

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	- Basic Principles of Inorganic Chemistry. - The Mole Concept (Stoichiometry & Conversion factors & Problems on mole concept). - Solution terminology, Solubility rules, and Concentration units	2
2	- General Concepts of Chemical Equilibrium (Law of mass action and Le Chatelier Principle). - Equilibrium constants (Ka, Kw, Kf and Ksp) and problems on Ksp and pH calculations.).	2
3	- Reactions between Ions (Neutralization, Precipitation, Complexation and Redox Reactions.	2
4	Acid- Base titrations; introduction, theory of acids and bases.	
5	pH value and its significance, pH of different solutions, buffers.	2
6	- Acid-base indicators, problems, types of acid-base titrations - Acid-base titration curves	2
7	- Applications of acid- base titration. - Pharmaceutical applications of acid-base titration	2
8	- Non-aqueous titrations	2
9	Precipitation titration; introduction, solubility product constant (Ksp),	2
10	Factors affecting solubility of precipitate, and precipitation titration curve	2
11	Methods of precipitation titration: Volhard method, Mohr's method, and Fajan's method	2
12	Introduction of Chemical Kinetics, first order	2
13	- Chemical Kinetics, Second, third order reaction - Self-learning "buffers and acid-base indicators" discussion and revision	2
14	Revision and quiz	2
15	Final Written and Oral Exam	--
Week No.	Practical topics	Practical credit hours

1.	-Glassware & Handling rules.	1
2.	-Determination of HCl.	1
3.	-Volumetric analysis calculations.	1
4.	-Determination of NH4Cl (Back titration).	1
5.	-Determination of NH4Cl/ HCl mixture.	1
6.	-Determination of Na2CO3/NaOH mixture.	1
7.	-Determination of HCl/CH3COOH mixture.	1
8.	Midterm exam	-
9.	-Determination of HCl/butyric acid mixture.	1
10.	-Determination of NaCl by Mohr's method.	1
11.	-Determination of NaBr by Mohr's method.	1
12.	-Determination of NaCl by Volhard's method.	1
13.	-Determination of NaBr by Volhard's method.	1
14	Practical Exam	

4- Teaching and Learning Methods:

Teaching and learning Methods		Weeks No.	K. elements to be addressed
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning Online learning through my mans "Mansoura university" as recorded video lectures Interactive discussion through My Mans.	1-14	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.4.1, 2.3.1.1 2.3.2.1
4.2	Practical session using chemicals and laboratory equipment	1-14	2.2.1.1, 2.2.3.1, 2.2.4.1, 2.3.1.1, 2.3.2.2, 4.1.2.1, 4.2.2.1
4.3	Self-learning	13	4.2.2.1,4.3.1.1, 4.3.2.1
4.4	Class Activity Discussion/ Brainstorming / Problem Solving	1-13	4.1.2.1, 4.2.2.1, 4.3.1.1, 4.3.2.1

5- Student Assessment:

Assessment Methods:

Assessment Methods	K. elements to be assessed
1- Periodical (Mid-term exam / Course work)	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.4.1, 4.1.2.1, 4.3.2.1
2- Practical exam using OSPE	2.2.1.1, 2.2.3.1, 2.2.4.1, 2.3.1.1, 2.3.2.2, 4.1.2.1, 4.2.2.1, 4.3.1.1, 4.3.2.1.
3- Written exam	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.2.4.1
4- Oral exam	1.1.1.1, 4.1.2.1

b. Assessment schedule

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

c. Weighing of assessments

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

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Equipment and glassware.
- Library	Books

8- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Recorded videos prepared by stuff members	Videos on platform
3.	Raymond Chang, Editor, "Physical Chemistry for the Biosciences" Sausalito, California (2020).	Book
4.	Essentials of Physical Chemistry, Arun Bahl,B.S. Bahl,G.D. Tuli, New Delhi 110055, India (2022)	Book
5.	Fundamentals of Analytical Chemistry , Douglas A.; Skoog; Donald M.; West, F.James Holler; Stanely, R.Crouch, Belmont, CA, USA 9th ed. (2014).	Book
6.	Pharmaceutical Analytical Chemistry, Quantitative Analysis, Amer, M.M. Faculty of Pharmacy, Cairo University.	Book
7.	Analytical Chemistry, Gary D. Christian, 7th ed. John Wiely and Sons, New York (2013)	Essential Book
8.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	websites

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

Course contents / K. elements	Domain 1		Domain 2					Domain 4			
	1.1.1.1	1.1.3.1	2.2.1.1	2.2.3.1	2.2.4.1	2.3.1.1	2.3.2.1	4.1.2.1	4.2.2.1	4.3.1.1	4.3.2.1
- Basic Principles of Inorganic Chemistry. - The Mole Concept (Stoichiometry & Conversion factors & Problems on mole concept). - Solution terminology, Solubility rules, and Concentration units	✓	✓						✓			
- General Concepts of Chemical Equilibrium (Law of mass action and Le Chatelier Principle). - Equilibrium constants (Ka, Kw, Kf and Ksp) and problems on Ksp and pH calculations.).	✓	✓			✓						
- Reactions between Ions (Neutralization, Precipitation, Complexation and Redox Reactions.	✓				✓						
Acid- Base titrations; introduction, theory of acids and bases.	✓			✓							

pH value and its significance, pH of different solutions, buffers.	✓			✓								
- Acid-base indicators, problems, types of acid-base titrations - Acid-base titration curves	✓	✓			✓				✓			
- Applications of acid- base titration. - Pharmaceutical applications of acid-base titration	✓		✓	✓								
- Non-aqueous titrations	✓		✓	✓								
Precipitation titration; introduction, solubility product constant (Ksp),	✓				✓				✓			
Factors affecting solubility of precipitate, and precipitation titration curve	✓			✓								
Methods of precipitation titration: Volhard method, Mohr's method, and Fajan's method	✓	✓	✓	✓								
Introduction of Chemical Kinetics, first order	✓	✓			✓							
- Chemical Kinetics, Second, third order reaction - Self-learning "buffers and acid-base indicators" discussion and	✓	✓			✓				✓	✓	✓	✓

revision													
Practical topics													
-Glassware & Handling rules.						✓	✓	✓					✓
-Determination of HCl.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Volumetric analysis calculations.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of NH4Cl (Back titration).			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of NH4Cl/ HCl mixture.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of Na2CO3/NaOH mixture.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of HCl/CH3COOH mixture.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of HCl/butyric acid mixture.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of NaCl by Mohr's method.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of NaBr by Mohr's method.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of NaCl by Volhard's method.			✓	✓	✓	✓	✓		✓	✓	✓	✓	
-Determination of NaBr by Volhard's method.			✓	✓	✓	✓	✓		✓	✓	✓	✓	

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

Theoretical part:

Course Contents	Teaching and Learning methods					Assessment methods			
	Lecture	Hybrid leaning	Class Activity Discussion	Lab sessions	Self-learning	Periodical exam	Practical/ Tutorial	Written	Oral
- Basic Principles of Inorganic Chemistry. - The Mole Concept (Stoichiometry & Conversion factors & Problems on mole concept). - Solution terminology, Solubility rules, and Concentration units	✓	✓	✓			✓		✓	✓
- General Concepts of Chemical Equilibrium (Law of mass action and Le Chatelier Principle). - Equilibrium constants (Ka, Kw, Kf and Ksp) and problems on Ksp and pH calculations.).	✓	✓	✓			✓		✓	✓
- Reactions between Ions (Neutralization, Precipitation, Complexation and Redox Reactions.	✓	✓	✓			✓		✓	✓
Acid- Base titrations; introduction, theory of acids and bases.	✓	✓	✓			✓		✓	✓
pH value and its significance, pH of different solutions, buffers.	✓	✓	✓					✓	✓

- Acid-base indicators, problems, types of acid-base titrations - Acid-base titration curves	✓	✓	✓					✓	✓
- Applications of acid- base titration. - Pharmaceutical applications of acid-base titration	✓	✓	✓					✓	✓
- Non-aqueous titrations	✓	✓	✓					✓	✓
Precipitation titration; introduction, solubility product constant (Ksp),	✓	✓	✓					✓	✓
Factors affecting solubility of precipitate, and precipitation titration curve	✓	✓	✓					✓	✓
Methods of precipitation titration: Volhard method, Mohr's method, and Fajan's method	✓	✓	✓					✓	✓
Introduction of Chemical Kinetics, first order	✓	✓	✓					✓	✓
- Chemical Kinetics, Second, third order reaction - Self-learning "buffers and acid-base indicators" discussion and revision	✓	✓	✓		✓			✓	✓

B) Practical part:

Course Contents	Teaching and Learning methods					Assessment methods			
	Lecture	Hybrid learning	Class Activity Discussion	Lab sessions	Self-learning	Periodical exam	Practical/Tutorial	Written	Oral
-Glassware & Handling rules.		✓		✓			✓		
-Determination of HCl.		✓		✓			✓		
-Volumetric analysis calculations.		✓		✓			✓		
-Determination of NH4Cl (Back titration).		✓		✓			✓		
-Determination of NH4Cl/ HCl mixture.		✓		✓			✓		
-Determination of Na2CO3/NaOH mixture.		✓		✓			✓		
-Determination of HCl/CH3COOH mixture.		✓		✓			✓		
-Determination of HCl/butyric acid mixture.		✓		✓			✓		
-Determination of NaCl by Mohr's method.		✓		✓			✓		

-Determination of NaBr by Mohr's method.		✓		✓			✓		
-Determination of NaCl by Volhard's method.		✓		✓			✓		
-Determination of NaBr by Volhard's method.		✓		✓			✓		

Course Coordinator	Prof. Dr. Manal Mohamed Eid
	M. Eid
Head of Department	Prof. Dr. Jenny Jeehan Mohamed Ahmed Nasr

Date: 10 / 9 / 2023

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

بكالوريوس الصيدلة الإكلينيكية (فارم دى)
Pharm D-Clinical Pharmacy
Course Specification
Academic year: 2023/2024

Course name: Pharmaceutical Organic Chemistry 1	**اسم المقرر** : كيمياء عضوية صيدلية 1
Academic Level: level 1	**المستوى الأكاديمي** : الأول
Scientific department: Pharmaceutical Organic Chemistry	**القسم العلمي** : الكيمياء العضوية الصيدلية
Head of Department: Prof. Dr. Shahenda Metwally Elmessery	**رئيس القسم :** أ.د/ شاهندة متولى المسيرى
Course Coordinator: Prof. Dr. Shahenda Metwally Elmessery	**منسق المقرر :** أ.د/ شاهندة متولى المسيرى

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	Pharmaceutical Organic Chemistry
Department supervising the course	Pharmaceutical Organic Chemistry
Program on which the course is given	Pharm D-Clinical Pharmacy Program
Academic Level	First Level , First semester, 2023-2024
Date of course specification approval	10th September, 2023

A. Basic Information: Course data:

Course Title	Pharmaceutical Organic Chemistry-1
Course Code	PC 102
Prerequisite	-
Teaching credit Hours: Lecture	2
: Practical	1
Total Credit Hours	3

B. Professional Information:

1. Course Aims:

This course enables the students to:

- Gain and understand of the basic principles of atoms regarding atomic structures, electronegativity, hybridization, chemical bonding, intermolecular forces and electronic displacements factors.
- Identify the basics of the organic compounds and their chemical reactions.
- Understand the principals of aromaticity.
- Recognize the importance of stereochemistry and their different pharmaceutical 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	Represent and list various structural formulas of different organic compounds and Know the effect of the intermolecular forces in the physical and chemical properties of the organic compounds.
1.1.3	1.1.3.1	Understand and identify some of the chemical reaction mechanism.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Design and identify various methods of preparation of some organic molecules belonging to different organic classes.
2.2.3	2.2.3.1	Perform chemical reactions to recognize the presence of some functional groups in the organic compounds.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Retrieve and evaluate information, solve problems, and work effectively in a team.
4.3.2	4.3.2.1	Practice independent learning to promote and improve continuous professional skills.

3- Course Contents:

A) Theoretical part

Week No.	Topics	Hours
1	Atomic Structure - Theories of covalent bonding - Orbital Hybridization – Electronegativity	2
2	Electron displacement factors & Intermolecular Forces - Concepts of Acidity and Basicity	2
3	Alkanes and Cycloalkanes	2
4	Alkenes (Self-learning)	2
5	Alkynes	2
6	Alkyl Halides (Synthesis and reactions)	2
7	Concepts of Aromaticity & Nomenclature	2
8	Aromaticity (Electrophilic aromatic substitution)	2
9	Polynuclear Hydrocarbons (Self-learning)	2
10	Stereochemistry (Introduction to stereochemistry)	2
11	Stereochemistry (Types of Isomers)	2
12	Stereochemistry (Applications)	2
13	Polynuclear Hydrocarbons Reactions (Self-learning)	2
14	Revision and quiz	2
15	**Final Written and Oral Exam**	-

B) Practical part

Week No.	Topics	Hours
1	Safety measures and Physical Characters	1
2	Physical Characters and solubility	1
3	Action of sodalime (Ammonium salts and carbohydrates)	1
4	Action of sodalime (Aniline salts)	1
5	Action of sodalime (Amide)	1
6	Action of sodalime (Acids)	1
7	Action of Na2CO3	1

8	Midterm exam	-
9	Action of Na2CO3 and FeCl3	1
10	Action of FeCl3 (Salt formation)	1
11	Action of $FeCl_3$ (Oxidation complex)	1
12	Action of $FeCl_3$ and Element test Stereochemistry (Tutorial)	1
13	Element test, general scheme revision Stereochemistry (Tutorial)	1
14	**Sheet and Practical exam applying OSPE**	1

4- Teaching and Learning Methods:

	Teaching and Learning Methods	Week No.	K. elements to be addressed
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • On line learning through My mans "Mansoura university "as recorded – video lectures • Interactive discussion through My Mans	1-14	1.1.1.1 1.1.3.1 2.2.1.1 2.2.3.1
4.2	Self-learning	4, 10	4.1.2.1 4.3.2.1
4.3	Practical session using chemicals and laboratory equipment and/ or tutorials	1-14	1.1.3.1 2.2.3.1 4.1.2.1
4.4	Class Activity: Group discussion and problem solving	4,10,13	4.1.2.1 4.3.2.1

5- Student Assessment:

a- Assessment Methods:

Assessment Methods	K. elements to be assessed
1- Periodical (Mid-term exam / Course work)	1.1.1.1, 1.1.3.1, 2.2.1.1, 4.1.2.1, 4.3.2.1
2- Practical exam using OSPE	2.2.1.1, 2.2.3.1, 4.1.2.1, 4.3.2.1
3- Written exam	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1
4- Oral exam	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 4.1.2.1

b. Assessment schedule

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

c. Weighing of assessments

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

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Water baths, flames, glassware, morters, chemical reagents, white Boards
- Library	Books and references

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
2.	Recorded videos prepared by stuff members	**Videos on platform**
3.	a) Vogel's Textbook of Practical Organic Chemistry (5th Edition), A.I. Vogel, A.R. Tatchell, B.S. Furnis, A.J. Hannaford, P.W.G. Smith b) Engel, R.G., Pavia, D.L., Lampman, G. M., Kriz, G.S.. A microscale approach to organic laboratory techniques. Ed. 6th, Boston, MA: Cengage Learning, 2018.	**Essential Book**
4.	a) Mc Murry, J. in organic chemistry, 8th ed. (2011), Brooks/Cole, London b) Carey, F.A., Giuliano, R.M., Allison, N., Bane, S.. *Organic Chemistry*. Ed. 11th, New York, NY: McGraw-Hill, 2020. c) I. L. Finar Organic Chemistry Volume 1: The Fundamental Principles 5th edition,1998, Longman Publishing Group. d) Solomons, G.T., Fryhle, C.B., Snyder, S.A.. *Organic Chemistry*. Ed. 12th, John Wiley & Sons, Global edition, 2017. e) I. L. Finar Organic Chemistry Volume 2: Stereochemistry and the chemistry of natural products 5th edition, 1998, Longman Publishing Group.	**Recommended Book**
5.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg http://www.chemsink.com/reactions/ http://www.chem.qmul.ac.uk/iupac/	**websites**

8-Matrix:

Matrix 1. Course contents and course key elements

A) Theoretical part:

Course contents	Course Key elements					
	Domain: 1		Domain: 2		Domain: 4	
	1.1.1.1	1.1.3.1	2.2.1.1	2.2.3.1	4.1.2.1	4.3.2.1
Atomic Structure - Theories of covalent bonding - Orbital Hybridization - Electronegativity	√	√				
Electron displacement factors & Intermolecular Forces - Concepts of Acidity and Basicity		√	√			
Alkanes and Cycloalkanes	√	√		√		
Alkenes (Self-learning)		√	√	√	√	√
Alkynes	√	√	√			√
Alkyl Halides (Synthesis and reactions)	√	√	√	√	√	
Concepts of Aromaticity & Nomenclature	√	√	√	√		
Aromaticity (Electrophilic aromatic substitution)	√				√	
Polynuclear Hydrocarbons (Self-learning)	√	√		√		
Stereochemistry (Introduction to stereochemistry)	√	√	√	√	√	√
Stereochemistry (Types of Isomers)	√	√	√			
Stereochemistry (Applications)	√		√		√	
Polynuclear Hydrocarbons Reactions (Self-learning)	√			√	√	√

B) Practical part:

Course contents	Course Key elements					
	Domain: 1		Domain: 2		Domain: 4	
	1.1.1.1	1.1.3.1	2.2.1.1	2.2.3.1	4.1.2.1	4.3.2.1
Safety measures and Physical Characters	√		√	√		
Physical Characters and solubility		√	√	√		
Action of sodalime (Ammonium salts and carbohydrates)	√	√	√	√		
Action of sodalime (Aniline salts)	√	√	√	√	√	√
Action of sodalime (Amide)	√	√	√	√	√	√
Action of sodalime (Acids)	√	√	√	√		√
Action of Na2CO3	√	√	√	√	√	
Action of Na2CO3 and FeCl3	√		√	√		√
Action of FeCl3 (Salt formation)		√	√	√		
Action of $FeCl_3$ (Oxidation complex)	√	√	√	√		√
Action of $FeCl_3$ and Element test Stereochemistry (Tutorial)	√		√	√	√	
Element test, general scheme revision Stereochemistry (Tutorial)	√	√	√	√	√	√

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	Self-learning	Corse Work	Practical/ Tutorial	Written	Oral
Atomic Structure - Theories of covalent bonding - Orbital Hybridization - Electronegativity	√		√			√		√	√
Electron displacement factors & Intermolecular Forces - Concepts of Acidity and Basicity	√		√			√		√	√
Alkanes and Cycloalkanes	√		√			√		√	√
Alkenes (Self-learning)	√	√	√		√	√		√	√
Alkynes			√					√	√
Alkyl Halides (Synthesis and reactions)		√	√					√	√

Concepts of Aromaticity & Nomenclature			√					√	√
Aromaticity (Electrophilic aromatic substitution)			√					√	√
Polynuclear Hydrocarbons (Self-learning)			√					√	√
Stereochemistry (Introduction to stereochemistry)		√	√					√	√
Stereochemistry (Types of Isomers)			√					√	√
Stereochemistry (Applications)			√					√	√
Polynuclear Hydrocarbons Reactions (Self-learning)		√	√		√			√	√

B) Practical part:

Course Contents	Teaching and Learning methods					Assessment methods			
	Lecture	Hybrid learning	Comp. aided learning	Lab sessions	Self-learning	Corse Work	Practical/Tutorial	Written	Oral
Safety measures and Physical Characters				√			√		
Physical Characters and solubility		√		√			√		
Action of sodalime (Ammonium salts and carbohydrates)		√		√			√		
Action of sodalime (Aniline salts)				√			√		
Action of sodalime (Amide)				√			√		
Action of sodalime (Acids)				√			√		
Action of Na2CO3		√		√			√		

Action of Na2CO3 and FeCl3		√		√			√		
Action of FeCl3 (Salt formation)		√		√			√		
Action of $FeCl_3$ (Oxidation complex)		√		√			√		
Action of $FeCl_3$ and Element test Stereochemistry (Tutorial)		√		√			√		
Element test, general scheme revision Stereochemistry (Tutorial)		√		√	√		√		

Course Coordinator	**Prof. Dr. Shahenda Metwally Elmessery**
Head of Department	**Prof. Dr. Shahenda Metwally Elmessery**

Date: 10/09/2023

الإكلينيكية (فارم دى) بكالوريوس الصيدلة
Course Specification

Academic year: 2023/2024

Course name: Pharmacy Orientation	**اسم المقرر: توجيه صيدلي**
Academic Level: Level 1	**المستوى الأكاديمي: الأول**
Scientific department: Pharmaceutics	**القسم العلمي: الصيدلانيات**
Head of Department: **Prof. Dr. Irhan Ibrahim Abu Hashim**	**رئيس القسم:** **أ.د/ ارهان ابراهيم أبوهاشم**
Course Coordinator: **Prof. Dr. Marwa Salah El-Din El-Dahhan**	**منسق المقرر:** **أ.د/ مروه صلاح الدين منصور الدهان**

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

A- Basic Information: Course data:

Course Title	**Pharmacy Orientation**
Course Code	**PT 101**
Prerequisite	**-----**
Teaching Hours: Lecture	**1**
Practical	**0**
Total Credit Hours	**1 (Credit H)**

B- Professional Information:

1- Course Aims:

1. Orienting the students to the different aspects of pharmacy profession , including the mission of pharmacy, role of pharmacist in society and pharmacy careers, classification of medications.
2. Recognize different sources of drugs, pharmaceutical dosage forms and routes of drug administration.
3. Understand different prescriptions and medication orders, general dispensing procedure and factors affecting drug dosage.
4. Knowing the history of pharmacy practice in various civilizations.

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**	Recollect the different knowledge about the pharmaceutical sciences.
1.1.2	**1.1.2.1**	Know the different types of medical prescriptions.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
2.1.1	**2.1.1.1**	Assess the legal professional requirements to practice for individuals and healthcare team
	2.1.1.2	Demonstrate the principles of ethics and protect the privacy of the patient.

DOMAIN 3: PHARMACEUTICAL CARE

Program K. element no.	Course K. element no.	Course K. element
3.2.1	**3.2.1.1**	Interpret the principles of proper dosage forms and different routes of administration.
3.2.5	**3.2.5.1**	Summarize education to help the patients to use OTC preparations.

DOMAIN 4: PERSONAL PRACTICE

Program K. element no.	Course K. element no.	Course K. element
4.2.1	**4.2.1.1**	Share decision-making activities with other team members.
4.3.2	**4.3.2.1**	Practice self-learning to improve professional skills

3- Course Contents

Week No.	Topics	Credit Hours
1	**Mission of Pharmacy**	1
2	**The Pharmacy Career**	1
3	**The Prescription**	1
4	**Medication errors**	1
5	**General Dispensing Procedures**	1
6	**Pharmaceutical Solid Dosage Forms**	1
7	**Pharmaceutical liquid Dosage Forms**	1
8	**Routes of drug administration (Oral, Parenteral)**	1
9	**Routes of drug administration (Rectal, Ocular, Otic)**	1
10	**Factors Affecting Drug Dosage and Source of Drugs**	1
11	تاريخ الصيدلة (الصيدلة عند قدماء المصريين)	1
12	تاريخ الصيدلة (الصيدلة فى الأقطار الشرقية)	1
13	**Classification of Medications (Prescription drugs and Dietary supplements: self-learning)**	1
14	**Revision and quiz**	1
15	**Final written and oral exam**	-

4- Teaching and Learning Methods:

Teaching and learning Methods		Weeks No.	K. elements to be addressed
4.1	Advanced lecture	1-14	1.1.1.1, 1.1.2.1, 2.1.1.1, 2.1.1.2, 3.2.1.1, 3.2.5.1, 4.2.1.1
4.2	Hybrid Learning: • Online learning through my Mans platform "Mansoura university" • Recorded video lectures	1-14	1.1.1.1, 1.1.2.1, 2.1.1.1, 2.1.1.2, 3.2.1.1, 3.2.5.1, 4.2.1.1
4.3	Self-learning	13	4.2.1.1, 4.3.2.1
4.4	Problem Solving	4-5	1.1.2.1

5- Student Assessment:

b- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1, 1.1.2.1, 2.1.1.1, 2.1.1.2, 3.2.1.1, 3.2.5.1
2-Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.2.1, 2.1.1.1, 2.1.1.2, 3.2.1.1, 3.2.5.1, 4.2.1.1, 4.3.2.1

c- Assessment schedule

Assessment 1	Mid-term	7- 9th week
Assessment 2	Written	Start at 15th week

d- Weighing of assessments

1	Course Work and mid-term Exam	25%
2	Written Exam	75%
3	Other types of assessment	0 %
Total		100%

6- Facilities required for teaching and learning

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

7- List of References

No	Reference	Type
1.	Electronic theoretical notes prepared by teaching staff members.	Course notes
2.	"Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems" 11th Ed., Wolters Kluwer, Lippincott Williams and Wilkins, Philadelphia, (2020).	Essential Book
3.	"Remington's: The science and practice of pharmacy" 23rd Ed., Pharmaceutical Press, Lippincott Williams and Wilkins, Philadelphia, (2020).	Essential Book
4.	https://www.pharmaguideline.com/2014/07/different-types-of-dosage-forms-in-pharmaceuticals.html https://www.ekb.eg	Websites

8- Matrix :

Matrix 1. Course content and course key element

Course contents	Outcomes Domains / Key elements									
	Domain 1			Domain 2			Domain 3			Domain 4
	1.1.1.1	1.1.2.1		2.1.1.1	2.1.1.2		3.2.1.1	3.2.5.1		4.2.1.1	4.3.2.1
Mission of Pharmacy	√			√						√	√
The Pharmacy Career	√			√	√					√	√
The Prescription		√						√		√	√
Medication errors		√						√		√	√
General Dispensing Procedures	√			√						√	√
Pharmaceutical Solid Dosage Forms		√					√			√	√
Pharmaceutical liquid Dosage Forms		√					√			√	√

Routes of drug administration (Oral, Parenteral)		√					√		√	√
Routes of drug administration (Rectal, Ocular, Otic)		√					√		√	√
Factors Affecting Drug Dosage and Source of Drugs		√					√	√	√	√
تاريخ الصيدلة (الصيدلة عند قدماء المصريين)	√				√				√	√
تاريخ الصيدلة (الصيدلة فى الأقطار الشرقية)	√				√				√	√
Classification of Medications (Prescription drugs and Dietary supplements: self-learning)	√						√		√	√

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

Course contents	Teaching and Learning Methods				Assessment methods	
	Advanced lecture	Hybrid learning	Self-learning	Problem Solving	Corse Work and mid-term Exam	Written Exam
Mission of Pharmacy	✓				✓	✓
The Pharmacy Career	✓				✓	✓
The Prescription	✓			✓	✓	✓
Medication errors	✓					✓
General Dispensing Procedures	✓					✓

Pharmaceutical Solid Dosage Forms	✓					✓
Pharmaceutical Liquid Dosage Forms	✓	✓				✓
Routes of drug administration (Oral, Parenteral)	✓					✓
Routes of drug administration (Rectal, Ocular, Otic)	✓					✓
Factors Affecting Drug Dosage and Source of Drugs	✓					✓
تاريخ الصيدلة (الصيدلة عند قدماء المصريين)	✓					✓
تاريخ الصيدلة (الصيدلة فى الأقطار الشرقية)	✓					✓

Course Coordinator	**Prof. Dr. Marwa Salah El-Din El-Dahhan**
	Marwa Salah
Head of Department	**Prof. Dr. Irhan Ibrahim Abu Hashim**
	Irhan Abuhashim

Approval Date: 20 September 2023

بكالوريوس الصيدلة الإكلينيكية (فارم دى)

Pharm D-Clinical Pharmacy

Course Specification

Academic year: 2023/2024

Course name: (Medicinal plants) PG 101	**اسم المقرر : النباتات الطبية**
Academic Level: level 1	**المستوى الأكاديمي : الاول**
Scientific department: Pharmacognosy	**القسم العلمي : العقاقير**
Head of Department: **Prof.Mahmoud Fahmi Elsebai**	**رئيس القسم:** **أ.د./ محمود فهمي السباعي**
Course Coordinator: **Prof. Weaam Nabil Ebrahim**	**منسق المقرر :** **أ. د./ وئام نبيل ابراهيم**

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmacognosy
Department supervising the course	Pharmacognosy
Program on which the course is given	**B. Pharm. (PharmD) (Clinical Pharmacy)**
Academic Level	level 1, first semester, 2023/2024
Date of course specification approval	06/09/ 2023

A. Basic Information: Course data:

Course Title	**Medicinal plants**
Course Code	**PG 101**
Prerequisite	**…**
Teaching credit Hours: Lecture	**2**
Practical	**1**
Total Credit Hours	**3**

B. Professional Information:

1. Course Aims:

1- The course affords students the principles to understand the classifications and identification of different plants on the cellular, tissues and entire levels.

2- The course provides students with the basic knowledge of plant minerals, enzymes, photosynthesis, respiration and protein synthesis that help him to understand plant secondary metabolism in addition to the basic concept of pharmacognosy.

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	Clarify the principles of plant anatomy, plant primary metabolites, plant secondary metabolites, plant physiology and taxonomy
1.1.3	1.1.3.1	Outline the principles of fundamental plant botany, and the concepts of pharmacognosy to handle and identify natural drugs in pharmaceuticals.
	1.1.3.2	Combine the principles of fundamental sciences to handle, identify, extract, design, prepare, analyze, and assure quality of synthetic/natural pharmaceutical raw materials.
1.1.5	1.1.5.1	Articulate knowledge about adulteration of different medicinal leaves

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Utilize the appropriate microscopic and taxonomical features to identify and standardize natural drugs
2.2.2	2.2.2.1	Employ basic requirements for quality management in developing, manufacturing, and storing natural pharmaceuticals.
2.3.1	2.3.1.1	Apply appropriate methods and procedures for handling natural drugs

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 team members and apply effective time management skills.
4.2.1	4.2.1.1	Communicate effectively in a scientific language by verbal and written means.
4.3.2	4.3.2.1	Practice self-learning to improve professional skills.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	**Plant cell structure and function**	2
2	**Plant tissues** (Meristematic, dermal, ground)	2
3	**Dusting powders** (Keiselguhr, talc, chalk, kaolin, precipitated sulfur, lycopodium spores, kamala)	2
4	**Introduction to Pharmacognosy** - Definitions (Crude drug, pharmacopeia, …. etc.), History of Pharmacognosy and Production of crude drugs	2
5	**Taxonomy: Introduction** Basis of classification of plant kingdom.	2
6	**Kingdom Plantae** Some important plant families (from medicinal point of view).	2
7	**Plant physiology** (Minerals and Enzymes)	2
8	**Plant physiology** ○ **Photosynthesis** Light-dependent reactions, Light-independent reactions	2
9	**Plant tissues:** **Supporting, vascular and secretory tissues.**	2
10	**Anatomical features of some plant organs:** (leaf, stem and root)	2

11	**Introduction to Pharmacognosy (continued)** - Storage of drugs (deterioration, factors, …. etc.) - Adulteration (types, ….) - Evaluation of crude drugs (organoleptic, microscopic, biological, …. etc.)	**2**
12	**Introduction to Pharmacognosy (continued)** Chemistry of crude drugs (Gums/mucilage, Resins, Tannins, Volatile oils, Alkaloids, Glycosides, … etc.)	**2**
13	**Plant physiology** **Respiration** Glycolysis, Formation of Acetyl Coenzyme A, Krebs Cycle, Oxidative phosphorylation: electron transport and chemiosmosis)	**2**
14	**Revision and quiz**	**2**
15	**Final written and oral exam**	**-**
Week No.	**Practical topics**	**Practical credit hours**
1.	**Microscopy and plant cells** (Onion cell).	1
2.	**Ergastic cell substances (**Carbohydrates, proteins, fat, calcium carbonate and calcium oxalate).	1
3.	**Examination of Dusting Powders** (Keiselguhr, talc, chalk, kaolin, precipitated sulfur, lycopodium spores, kamala)	1
4.	**Dermal tissue (stomata)**	1
5.	**Dermal tissue (trichome)**	1
6.	**Ground tissue (pw. Cinnamon)**	1
7.	**Vascular tissue (T.S in pith)**	1
8.	**Midterm exam**	-
9.	**Leaf anatomy (T.S in Eucalyptus)**	1
10.	**Stem anatomy (T.S in basil stem)**	1

11.	**Root anatomy (T.S in radish root)**	1
12.	**Taxonomy of medicinally important monocot Plant Families.** Graminae, Liliaceae and Zingiberaceae,	1
13	**Taxonomy of medicinally important dicot Plant Families.** Solanaceae, Compositae, Cruciferae, Leguminosae and Labiatae	1
14	**Sheet / and Practical exam**	**1**

4- Teaching and Learning Methods:

Teaching and learning Methods		**Weeks No.**	**K. elements to be addressed**
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • Online learning through my mans "Mansoura university" as recorded video lectures • Interactive discussion through My Mans.	1-14	1.1.1.1, 1.1.3.1, 2.2.2.1, 4.1.1.1, 4.2.2.1
4.2	Practical session using chemicals and laboratory equipment and/or tutorials	1-14	2.2.1.1, 2.2.2.1, 2.3.1.1, 4.1.1.1, 4.2.2.1
4.3	Class Activity: Group discussion offline and online.	2-8	1.1.1.1, 1.1.3.1, 4.1.1.1, 4.2.2.1
4.4	Problem solving – based learning and brainstorming	1-11	1.1.1.1, 1.1.3.1,4.1.1.1
4.5	Self-learning	13	4.3.2.1
4.6	العروض التوضيحية Demos	1-11	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.3.1.1, 4.2.1.1, 4.3.2.1

5- Student Assessment:

e- Assessment Methods:

Assessment Methods	**K elements to be assessed**
1-Written exam	1.1.1.1, 1.1.3.1, 1.1.5.1
2-Practical exam applying OSPE/OSCE	2.2.1.1, 2.2.2.1, 2.3.1.1
3-Oral exam	1.1.1.1, 1.1.3.1, 2.2.2.1, 4.1.1.1, 4.2.2.1, 4.3.2.1

4- Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.3.1, 2.2.2.1, 4.1.1.1, 4.2.2.1

b. Assessment schedule

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

c. Weighing of assessments

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

6- Facilities required for teaching and learning

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

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
2.	Recorded videos prepared by stuff members	Videos on platform
3.	Charles, B.B., An introduction to the plant structure and development, Cambridge University Press, 2005	**Essential Book**
4.	WHO Monographs on Medicinal Plants Commonly Used in the Newly Independent States (NIS), (2010).	

5.	Goodwin, T.W., Introduction to Plant Biochemistry, 2nd edition, Cbs, 2003.	**Supplementary Textbooks**
6.	http://www.sciencedirect.com/ http://www.google scholar.com/ http://www.pubmed.com https://www.ekb.eg https://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/plant-anatomy. November, 2020	**websites**

8- Matrix 1. between course content and key element

A) Theoretical part

Course contents	Course Key elements									
	Domain: 1				Domain: 2			Domain: 4		
	1.1.1.1	1.1.3.1	1.1.3.2	1.1.5.1	2.2.1.1	2.2.2.1	2.3.1.1	4.1.1.1	4.2.1.1	4.3.2.1
Plant cell structure and function	✓		✓	✓						
Plant tissues (Meristematic, dermal, ground)	✓	✓	✓							
Dusting powders (Keiselguhr, talc, chalk, kaolin, precipitated sulfur, lycopodium spores, kamala)	✓	✓	✓	✓						
Introduction to Pharmacognosy - Definitions (Crude drug, pharmacopeia, …. etc.), History of Pharmacognosy and Production of crude drugs	✓	✓	✓	✓						
Plant taxonomy	✓									
Plant physiology (Minerals, enzymes and photosynthesis)	✓									
Leaf, root and stem anatomy	✓									
Introduction to Pharmacognosy (continued)	✓	✓	✓	✓						
Plant physiology **Respiration** Glycolysis, Formation of Acetyl Coenzyme A, Krebs Cycle, Oxidative phosphorylation: electron transport and chemiosmosis)	✓									

B) Practical part

Course contents	Course Key elements									
	Domain: 1				Domain: 2			Domain: 4		
	1.1.1.1	1.1.3.1	1.1.3.2	1.1.5.1	2.2.1.1	2.2.2.1	2.3.1.1	4.1.1.1	4.2.1.1	4.3.2.1
Microscopy and plant cells (Onion cell).	✓	✓	✓		✓		✓			
Ergastic cell substances (Carbohydrates, proteins, fat, calcium carbonate and calcium oxalate).	✓	✓	✓		✓		✓	✓		
Examination of Dusting Powders (Keiselguhr, talc, chalk, kaolin, precipitated sulfur, lycopodium spores, kamala)	✓	✓	✓		✓		✓	✓		
Dermal tissue (stomata)	✓	✓	✓		✓		✓	✓	✓	
Dermal tissue (trichome)	✓	✓	✓		✓		✓	✓	✓	
Ground tissue (pw. Cinnamon)	✓	✓	✓		✓		✓	✓	✓	
Vascular tissue (T.S in pith)	✓	✓	✓		✓		✓	✓	✓	
Leaf anatomy (T.S in Eucalyptus)	✓	✓	✓		✓		✓	✓		
Stem anatomy (T.S in basil stem)	✓	✓	✓		✓		✓	✓		
Root anatomy (T.S in radish root)	✓	✓	✓		✓		✓	✓		
Taxonomy of medicinally important monocot Plant Families. Graminae, Liliaceae and Zingiberaceae,	✓	✓	✓		✓		✓			✓
Taxonomy of medicinally important dicot Plant Families. Solanaceae, Compositae, Cruciferae, Leguminosae and Labiatae	✓	✓	✓		✓		✓			✓

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

Course Contents	Assessment methods				Assessment methods				
	Lecture	Online lecture	Class activity	Self-learning	Course Work	**Course Work (mid-term Exam)**	Practical	Written	Oral
Plant cell structure and function	√				√	√		√	√
Plant tissues	√		√		√	√		√	√
Dusting powders	√		√		√	√		√	√
Introduction to Pharmacognosy	√		√		√	√		√	√
Plant taxonomy	√		√		√			√	√
Plant physiology	√	√	√		√			√	√
Leaf, root and stem anatomy	√							√	√
Introduction to Pharmacognosy (continued)	√							√	√
Physiology of Plant cell (Respiration)	√			√				√	√

Course Contents	Teaching and Learning Methods						Assessment methods			
	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Course Work	Practical exam	written	Oral
Microscopy and plant cells (Onion cell).			√	√	√			√		
Ergastic cell substances (Carbohydrates, proteins, fat, calcium carbonate and calcium oxalate).			√	√	√			√		
Examination of Dusting Powders (Keiselguhr, talc, chalk, kaolin, precipitated sulfur, lycopodium spores, kamala)			√	√	√			√		
Dermal tissue (stomata)			√	√	√			√		
Dermal tissue (trichome)			√	√	√			√		
Ground tissue (pw. Cinnamon)			√	√	√			√		
Vascular tissue (T.S in pith)			√	√	√			√		
Leaf anatomy (T.S in Eucalyptus)			√	√	√			√		
Stem anatomy (T.S in basil stem)			√	√	√			√		
Root anatomy (T.S in radish root)			√	√	√			√		
Taxonomy of medicinally important monocot Plant Families. Graminae, Liliaceae and Zingiberaceae,			√	√	√			√		
Taxonomy of medicinally important dicot Plant Families. Solanaceae, Compositae, Cruciferae, Leguminosae and Labiatae			√	√	√			√		

Course Coordinator	**Prof. Weaam Nabil Ebrahim**
Head of Department	**Prof. Mahmoud Fahmi Elsebai**

Date: 06/ 09 / 2023

بكالوريوس الصيدلةالإكلينيكية (فارم د – Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Medical Terminology	**اسم المقرر : مصطلحات طبيه**
Academic Level: level one	**المستوى الاكاديمي : الاول**
Scientific department: Pharmacology & Toxicology	**القسم العلمي : الادوية والسموم**
Head of Department: Prof Dr. Manar A. Nader	**رئيس القسم : أ.د/ منار أحمد نادر**
Course Coordinator: Dr. Hoda Ezzat M. Kafl	**منسق المقرر:.د/ هدي عزت محمد كفل**

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmacology and Toxicology
Department supervising the course	Pharmacology and Toxicology
Program on which the course is given	Bachelor of Pharmacy (Clinical Pharmacy-Pharm-D)
Academic Level	First level, First Semester, 2023/2024
Date of course specification approval	18th September 2023

9- Basic Information: Course data:

Course Title	**Medical Terminology**
Course Code	**MD-101**
Prerequisite	**Registration**
Teaching Hours: Lecture	**1**
Practical:	**-**
Total Credit Hours	**1**

B. Professional Information:

1. Course Aims:

This course enables students to

- Gain the necessary competency enabling them to recognize, analyze, synthesize, and apply medical terms as well as universally approved abbreviations related to the health profession, medical and paramedical.
- Recognize basic components of medical terms (roots, prefixes, suffixes, and linking or combining vowels.
- Know the commonly used prefixes, and roots of body system.
- Be aware of the commonly used medical abbreviations.

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
1.1.2	1.1.2.1	Define the proper pharmaceutical and medical terminology, abbreviations and symbols in health reports and pharmacy practice.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.5.2	2.1.5.1	Evaluate evidence-based information needed in pharmacy practice decisions.

Domain 4: Personal Practice

Program K. element no.	Course K. element no.	Course K. element
4.2.1	4.1.2.1	Use clear language, pace, tone and non-verbal communication and writing skills when dealing with patients, other health team and communities.
4.3.2	4.3.2.1	Practice self-learning to improve professional skills

3. Course Contents

Week No.	Topics	Lecture credit Hours
1	**Introduction:** Word roots, combining forms, suffixes and prefixes and basic guidelines in defining medical words	1
2	**Nervous system and behavioral disorders:** Anatomy and physiology of nervous system, cranial nerves, roots for brain and spinal cord, roots and suffixes for nervous system	1
3	**Nervous system and behavioral disorders:** clinical aspects of nervous system	1
4	**Blood and immunity:** Basic blood components, cells of the immune system, roots for blood and immunity, suffixes for the blood, clinical aspects of blood and immunity	1
5	**Endocrine system:** Endocrine glands and secreted hormones, roots pertaining to endocrine system, clinical aspects of endocrine system	1
6	**Digestive system:** Anatomy and physiology of digestive system, the commonly used prefixes, suffixes, and roots of digestive system, the commonly used medical abbreviations in digestive system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	1
7	**Digestive system:** Anatomy and physiology of digestive system, the commonly used prefixes, suffixes, and roots of digestive system, the commonly used medical abbreviations in digestive system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	1
8	**Respiratory system:** Anatomy and physiology of Respiratory system, the commonly used prefixes, suffixes, and roots of Respiratory system, the commonly used medical abbreviations in Respiratory system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	1
9	**Cardiovascular system:** Anatomy and physiology of cardiovascular system, the commonly used prefixes, suffixes, and roots of cardiovascular system, the commonly used medical abbreviations in cardiovascular system as well as the commonly used medical terms related to structure and function of cardiovascular system	1
10	**Cardiovascular system:** Commonly used medical terms related to blood flow, conduction system, diseases, diagnostic and therapeutic procedures.	1
11	**Urinary system:** the commonly used medical abbreviations in urinary system	1
12	**Urinary system**: commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	1
13	**Immune system self learning**	1
14	**Revision and quiz**	1
15	**Final written exam**	-

1. Teaching and Learning Methods:

Teaching and learning Methods		Weeks No.	Key elements to be addressed
	Teaching and learning Methods:		
4.1	Advanced lectures: • Lectures using Data show, power Point presentations • Brain storming • Group discussion	1-14	1.1.2.1, 2.5.2.1, 4.2.1.1, 4.3.2.1
4.2	Hybrid learning: • On line learning through My mans "Mansoura university "	6, 14	1.1.2.1, 2.5.2.1, 4.2.1.1, 4.3.2.1
4.3	Self-learning	13	4.2.1.1, 4.3.2.1
4.4	Collaborative learning: research project	4-8	1.1.2.1, 2.5.2.1, 4.2.1.1, 4.3.2.1

5. Student Assessment:

f- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.2.1, 2.5.2.1, 4.2.1.1, 4.3.2.1
2- Periodical (Mid-term exam) / Course work	1.1.2.1, 2.5.2.1

g- Assessment schedule

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

h-Weighing of assessments

1	Periodical (Mid-term) exam / Course work	25%
2	Final-term examination	75%
Total		100%

2. Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.

7. List of References

No	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
3.	Barbara A Gylys, Mary Ellen Wedding. Medical Terminology Systems: A Body Systems Approach 6th Edition (April 26, 2017), F A Davis, 744 pages	**Book**
4.	Barbara J Cohen; Shirley A Jones. Medical Terminology: An illustrated Guide 9th edition 9th edition (February 18, 2020), Burlington, MA : Jones & Bartlett Learning	**Book**
5.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg https://www.epainassist.com/brain/astrocytoma https://www.britannica.com/science/blood-biochemistry https://www.hhmi.org/biointeractive/cells-immune-system http://leukemia-research.org/leukemia-what-we-know-so-far/ http://www.newhealthadvisor.com/Pollen-Allergy-Medicine.html	**websites**

8-Matrix:

Matrix 1. Course contents and course key elements

Course contents / K. elements	Domain 1		Domain 2	Domain 4	
	1.1.2.1		2.1.5.1	4.1.2.1	4.3.2.1
Introduction: Word roots, combining forms, suffixes and prefixes and basic guidelines in defining medical words	✓		✓		
Nervous system and behavioral disorders: Anatomy and physiology of nervous system, cranial nerves, roots for brain and spinal cord, roots and suffixes for nervous system	✓		✓		
Nervous system and behavioral disorders: clinical aspects of nervous system	✓		✓		
Blood and immunity: Basic blood components, cells of the immune system, roots for blood and immunity, suffixes for the blood, clinical aspects of blood and immunity	✓		✓	✓	✓
Endocrine system: Endocrine glands and secreted hormones, roots pertaining to endocrine system, clinical aspects of endocrine system	✓		✓	✓	✓
Digestive system: Anatomy and physiology of digestive system, the commonly used prefixes, suffixes, and roots of digestive system, the commonly used medical abbreviations in digestive system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	✓		✓	✓	✓
Digestive system: Anatomy and physiology of digestive system, the commonly used prefixes, suffixes, and roots of digestive system, the commonly used medical abbreviations in digestive system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	✓		✓	✓	✓
Respiratory system: Anatomy and physiology of Respiratory system, the commonly used prefixes, suffixes, and roots of Respiratory system, the commonly used medical abbreviations in Respiratory system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	✓		✓	✓	✓
Cardiovascular system: Anatomy and physiology of cardiovascular system, the commonly used prefixes, suffixes, and roots of cardiovascular system, the	✓		✓	✓	✓

commonly used medical abbreviations in cardiovascular system as well as the commonly used medical terms related to structure and function of cardiovascular system					
Cardiovascular system: Commonly used medical terms related to blood flow, conduction system, diseases, diagnostic and therapeutic procedures.	✓		✓	✓	✓
Urinary system: the commonly used medical abbreviations in urinary system	✓		✓	✓	✓
Urinary system: commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	✓		✓	✓	✓
Immune system self learning	✓		✓	✓	✓

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

Course Contents	Teaching and Learning Methods					Assessment methods		
	Advanced lectures:	Hybrid learning	Self learning	learning: Research Project	Collaborative learning	Corse Work mid-term Exam)	Written	
Introduction: Word roots, combining forms, suffixes and prefixes and basic guidelines in defining medical words	✓					✓	✓	

Nervous system and behavioral disorders: Anatomy and physiology of nervous system, cranial nerves, roots for brain and spinal cord, roots and suffixes for nervous system	✓					✓	✓	
Nervous system and behavioral disorders: clinical aspects of nervous system	✓					✓	✓	
Blood and immunity: Basic blood components, cells of the immune system, roots for blood and immunity, suffixes for the blood, clinical aspects of blood and immunity	✓			✓		✓	✓	

Endocrine system: Endocrine glands and secreted hormones, roots pertaining to endocrine system, clinical aspects of endocrine system	✓			✓			✓	
Digestive system: Anatomy and physiology of digestive system, the commonly used prefixes, suffixes, and roots of digestive system, the commonly used medical abbreviations in digestive system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	✓	✓		✓			✓	

Digestive system: Anatomy and physiology of digestive system, the commonly used prefixes, suffixes, and roots of digestive system, the commonly used medical abbreviations in digestive system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	✓			✓			✓	

Respiratory system: Anatomy and physiology of Respiratory system, the commonly used prefixes, suffixes, and roots of Respiratory system, the commonly used medical abbreviations in Respiratory system as well as the commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	✓			✓			✓	

Cardiovascular system: Anatomy and physiology of cardiovascular system, the commonly used prefixes, suffixes, and roots of cardiovascular system, the commonly used medical abbreviations in cardiovascular system as well as the commonly used medical terms related to structure and function of cardiovascular system	✓						✓	
Cardiovascular system: Commonly used medical terms related to blood flow, conduction system, diseases, diagnostic and therapeutic procedures.	✓						✓	
Urinary system: the commonly used medical abbreviations in urinary system	✓						✓	

Urinary system: commonly used medical terms related to diseases, diagnostic Aids, therapeutic procedures	✓						✓	
Immune system self learning	✓	✓	✓				✓	

Course Coordinator	**Dr. Hoda Ezzat Kafl**
Head of Department	**Prof. Dr. Manar A Nader**

Date: 18 /9 / 2023

بكالوريوس الصيدلةالإكلينيكية (فارم د – Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Mathematics and Biostatistics	**اسم المقرر:رياضيات واحصاء**
Academic Level: Level 1	**المستوى الأكاديمي: الاول**
Scientific department: Pharmacology and Toxicology	**القسم العلمي:الادوية والسموم**
Head of Department: **Prof. Dr. Manar Ahmed Nader**	**رئيس القسم:** **أ.د. منار احمد نادر**
Course Coordinator: **Dr. Marwa Elsayed Abdelmageed**	**منسق المقرر:** **د/ مروه السيد عبدالمجيد**

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmacology and Toxicology
Department supervising the course	Pharmacology and Toxicology
Program on which the course is given	Bachelor of Pharmacy (Clinical Pharmacy-Pharm-D)
Academic Level	First level, First Semester, 2023/2024
Date of course specification approval	18th September 2023

10- Basic Information: Course data:

Course Title	**Mathematics and Biostatistics**
Course Code	**MS 101**
Prerequisite	**Registration**
Teaching Hours: Lecture	**1**
Practical	**0**
Total Credit Hours	**(1 Credit Hour)**

B. Professional Information:

1. Course Aims:

This course enables students to

- Make interpretation of any data using statistical analysis.
- Determine different methods of sampling and mathematical calculations.
- Handle the results of different experimental and research studies using suitable statistical techniques.

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
1-1-3	1-1-3-1	Combine the principles of Mathematical sciences to identify and analyze synthetic/natural pharmaceutical raw materials and finished products.
1-1-5	1-1-5-1	Collect and apply the principles and practice of mathematical sciences to solve problems related to health systems
1-1-6	1-1-6-1	Access, retrieve, statistically analyze, and apply relevant scientific literature and other scientific resources to make professional final decisions
1-1-7	1-1-7-1	Gather and statistically analyze new information that may be applicable to pharmaceutical industry and patient care.
1-1-9	1-1-9-1	Perform patient-specific calculations, including mathematical and therapeutic calculations.

Domain 2: professional and ethical practice

Program K. element no.	Course K. element no.	Course K. element
2-2-4	2-2-4-1	Enroll quality control and quality assurance principles including mathematical calculations, biostatical analysis, and assessment procedures of all the processes of pharmaceutical formulations.
2-6-1	2-6-1-1	Enroll the basic principles involved in managing financial, human resources and business administration in the pharmacy.
2-6-2	2-6-2-1	Practice guidelines of sales, marketing, accounting, and outcomes of pharmacoeconomic analysis.

Domain 4: personal practice

Program K. element no.	Course K. element no.	Course K. element
4-1-2	4-1-2-1	Collect information and analyze data as well as identify problems and present solutions and participate with other team members in the healthcare system.

3. Course Contents

Week No.	Topics	Credit Hours
1	Functions and Graphs	1
2	Limits	1
3	Continuity	1
4	Differentiation	1
5	Logarithmic functions	1
6	Biostatistics introduction – types of variables	1
7	Descriptive statistics (tubular)	1
8	Descriptive statistics (diagrams)	1
9	Numerical description of data (mean, median, mode)	1
10	Measures of dispersion, Tests of significance	1
11	Confidence limits, Normal deviate test	1
12	Unpaired t test- Paired t test	1
13	One Way ANOVA	1
14	Revision and quiz	1
15	**Final Written Exam**	--

4. Teaching and Learning Methods:

		Weeks	K elements to be addressed
5.1	**Advanced Lectures:** **A. Lectures using data show, Power point (PPT) presentations.**	**1-14**	1-1-3, 1-1-5, 1-1-6, 1-1-7, 1-1-9, 2-2-4, 2-6-1, 2-6-2, 4-1-2
5.2	**Hybrid learning:** • **Online learning through my mans "Mansoura university"** • **Inter active session discussion through my mans**	**6,14**	1-1-3, 1-1-5, 1-1-6, 1-1-7, 1-1-9, 2-2-4, 2-6-1, 2-6-2, 4-1-2
5.3	**Self-learning**	**13**	1-1-3, 1-1-5, 1-1-6, 1-1-7, 1-1-9, 2-2-4, 2-6-1, 2-6-2, 4-1-2
5.4	**Collaborative learning**	**8-12**	1-1-3, 1-1-5, 1-1-6, 1-1-7, 1-1-9, 2-2-4, 2-6-1, 2-6-2, 4-1-2

5. Student Assessment:

h- Assessment Methods:

Written exam	1-1-3, 1-1-5, 1-1-6, 1-1-7, 1-1-9, 2-2-4, 2-6-1, 2-6-2
Periodical (Mid-term exam)/Course work	1-1-3, 1-1-5, 1-1-9, 2-2-4, 2-6-1, 2-6-2, 4-1-2

i- Assessment schedule

Assessment 1	**Periodical (Mid-term exam)/Course work**	7th - 9th week
Assessment 2	**Final written exam**	Start from 15th week

j- Weighing of assessments

1	**Mid-term examination**	25%
2	**Final-term examination**	75%
Total		100%

6. Facilities required for teaching and learning

Classroom	Data show- Computers, Internet, platform.
Library	Books and Pharmacopoeia

7. List of References

No	Reference	Type
1.	Essential Statistics for the Pharmaceutical Sciences, 2nd Edition, Philip Rowe, ISBN: 978-1-118-91338-3 September 2015 Medical Statistics at a Glance, 4th Edition, Aviva Petrie, Caroline Sabin, 2019 Wiley-Blackwell G. Thomas, R. Finney and M.Weir, Calculus, Addison-Wesley Publishing Company, Inc. 2012.	Essential textbooks
2.	Electronic book prepared by staff members	Course notes
3.	https://WWW.ekb.eg/ https://WWW.google scholer.com/ https://WWW.pubmed.com/ https://WWW.sciencedirect.com/	Official Websites

8-Matrix:

Matrix 1. Course contents and course key elements

Course contents	Course Key elements										
	Domain 1						Domain 2				Domain 4
	1.1.3.1	1.1.5.1	1.1.6.1	1.1.7.1	1.1.9.1		2.2.4.1	2.6.1.1	2.6.2.1		4.1.2.1
Functions and Graphs	√	√			√		√	√	√		
Limits	√	√			√		√	√	√		
Continuity	√	√			√		√	√	√		
Differentiation	√	√			√		√	√	√		√
Logarithmic functions			√	√			√				√
Biostatistics introduction – types of variables			√	√			√				√
Descriptive statistics (tubular)			√	√			√				√
Descriptive statistics (diagrams)			√	√			√				√
Numerical description of data (mean, median, mode)			√	√			√				√
Measures of dispersion, Tests of significance			√	√			√				√
Confidence limits, Normal deviate test			√	√			√				√
Unpaired t test- Paired t test			√	√			√				√
One Way ANOVA			√	√			√				√

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

Course Contents	Teaching and Learning methods					Assessment methods	
	Lecture Advanced	Hybrid leaning	Collaborative learning	Self-learning		Corse Work (mid-term Exam)	Written
Functions and Graphs	✓					✓	✓
Limits	✓					✓	✓
Continuity	✓					✓	✓
Differentiation	✓					✓	✓
Logarithmic functions	✓						✓
Biostatistics introduction – types of variables	✓	✓					✓
Descriptive statistics (tubular)	✓						✓
Descriptive statistics (diagrams)	✓		✓				✓
Numerical description of data (mean, median, mode)	✓		✓				✓
Measures of dispersion, Tests of significance	✓		✓				✓
Confidence limits, Normal deviate test	✓		✓				✓
Unpaired t test- Paired t test	✓		✓				✓
One Way ANOVA	✓	✓		✓			✓

Course Coordinator	**Dr. Marwa Elsayed Abdelmageed**
	Marwa Elsayed
Head of Department	**Prof. Dr. Manar A. Nader** Manar **Date: 18 /9 / 2023**

بكالوريوس الصيدلة الإكلينيكية (فارم دى – Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Information Technology	**اسم المقرر** : تكنولوجيا المعلومات
Academic Level: level 1	**المستوى الأكاديمي** : الاول
Scientific department: Pharmaceutical analytical chemistry	**القسم العلمي**: الكيمياء التحليلية الصيدلية
Head of Department: Prof. Dr. jenny Jeehan Mohamed Ahmed Nasr	**رئيس القسم :** ا.د/جيني جيهان محمد أحمد نصر
Course Coordinator: Ass. Prof. Dr. Mahmoud Mohamed Saafan	**منسق المقرر :** ا.م.د/ محمود محمد سعفان السيد

University	**Mansoura**
Faculty	**Pharmacy**
Department offering the course	**Pharmaceutical analytical chemistry**
Department supervising the course	**Pharmaceutical analytical chemistry**
Program on which the course is given	**Pharm D-Clinical Pharmacy Program**
Academic Level	**First level, first semester, 2023-2024**
Date of course specification approval	**10/9/2023**

A. Basic Information: Course data:

Course Title	Information Technology
Course Code	URI
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- **Basic concepts of computer and information technology, Introduction to computer programming.**
2- **Computer networks and essential IOT.**

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**	Learn more about information technology and how it can be applied in administrative aspects in pharmacy.
1.1.6	**1.1.6.1**	Search for scientific literature on the internet to reach evidence based approach.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.3	**2.2.3.1**	Use different software with in-depth knowledge.
2.5.3	**2.5.3.1**	Learn how to search scholarly investigations and use systematic ways in the search for best available evidence.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	**4.1.2.1**	Collect information and analyze data, identify problems and present solutions with other team members in the health care system.
4.2.2	**4.2.2.1**	Apply advanced technologies and channels whenever possible to present relevant information
4.3.2	**4.3.2.1**	Encourage practicing self and independent learning.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Basic concepts of computer and information technology	1
2	Algorisms and flowcharting fundamentals	1
3	Introduction to computer programming	1
4	Selection statements in computer	1
5	For statement in computer	1
6	While statements in computer	1
7	Do-While statement in computer	1
8	Computer networks introduction	1
9	Applications of Computer networks	1
10	Inherent IoT	1
11	Applications of IoT in Pharmaceutical Manufacturing	1
12	Some computer applications (self-learning)	1
13	Application of Blockchain towards Pharmaceutical Industry	1
14	Revision and quiz	1
15	Final written and oral exam	----
Week No.	**Practical topics**	**Practical credit hours**
1.	Basic concepts of computer and information technology	1
2.	Algorisms fundamentals	1
3.	flowcharting fundamentals	1
4.	Introduction to computer programming	1
5.	Selection statements in computer	1

6.	**For statement in computer**	1
7	**While statements in computer**	1
8	**Midterm exam**	-
9	**Do-While statement in computer**	1
10	**Computer networks introduction**	1
11	**Applications of Computer networks**	1
12	**Inherent IoT**	1
13	**Applications of IoT in Pharmaceutical Manufacturing**	1
14	**Sheet / and Practical exam**	1

4- Teaching and Learning Methods:

Teaching and learning Methods		**Weeks No.**	**K. elements to be addressed**
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • Online learning through my mans "Mansoura university" as recorded video lectures • Interactive discussion through My Mans.	1-14	1.1.1.1, 1.1.6.1, 2.2.3.1, 2.5.3.1. 4.1.2.1, 4.2.2.1., 4.3.2.1
4.2	Practical session using chemicals and laboratory equipment and/or tutorials	1-14	1.1.1.1, 1.1.6.1, 2.2.3.1, 2.5.3.1. 4.1.2.1, 4.2.2.1
4.3	Self-learning	12	2.2.3.1, 4.1.2.1, 4.3.2.1
4.4	Class Activity Discussion / Brainstorming / problem solving	1-13	2.2.3.1, 2.5.3.1. 4.1.2.1, 4.2.2.1., 4.3.2.1

5- Student Assessment:

k- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1, 1.1.6.1, 2.2.3.1, 2.5.3.1
2-Practical applying OSPE	1.1.1.1, 1.1.6.1, 2.2.3.1, 4.1.2.1, 4.2.2.1
3- Periodical exam / Course work	1.1.1.1, 1.1.6.1, 2.2.3.1, 2.5.3.1. 4.1.2.1, 4.2.2.1.

b. Assessment schedule

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

c. Weighing of assessments

1	**Periodical exam / Course work**	15%
2	**Practical examination and tutorial**	25%
3	**Final-term written examination**	60%
Total		100%

6- Facilities required for teaching and learning

-Class room	Data show - Computers - Internet.
-laboratories	White board - Data show - Computers

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

Course contents / K. elements	Domain 1		Domain 2		Domain 4		
	1.1.1.1	1.1.6.1	2.2.3.1	2.5.3.1	4.1.2.1	4.2.2.1	4.3.2.1
Basic concepts of computer and information technology	✓	✓	✓	✓	✓		
Algorisms and flowcharting fundamentals	✓			✓	✓		
Introduction to computer programming	✓	✓	✓			✓	
Selection statements in computer	✓		✓	✓		✓	
For statement in computer	✓	✓				✓	
While statements in computer	✓	✓					
Do-While statement in computer	✓	✓	✓			✓	
Computer networks introduction	✓			✓		✓	
Applications of Computer networks	✓				✓		
Inherent IoT					✓	✓	
Applications of IoT in Pharmaceutical Manufacturing					✓	✓	✓
Some computer applications (self-learning)			✓		✓		✓
Application of Blockchain towards Pharmaceutical Industry					✓	✓	✓
practical							
Basic concepts of computer and information technology	✓	✓	✓	✓	✓		
Algorisms fundamentals	✓			✓	✓		
flowcharting fundamentals	✓			✓	✓		

Introduction to computer programming	✓	✓		✓				✓	
Selection statements in computer	✓			✓	✓			✓	
For statement in computer	✓	✓						✓	
While statements in computer	✓	✓							
Do-While statement in computer	✓	✓		✓				✓	
Computer networks introduction	✓				✓			✓	
Applications of Computer networks	✓						✓		
Inherent IoT							✓	✓	
Applications of IoT in Pharmaceutical Manufacturing							✓	✓	✓

8- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
2.	Recorded videos prepared by stuff members	**Videos on platform**
3.	Modern C Quick Syntax Reference 2nd Edition (2023)	**Book**
4.	Advances in Internet, Data & Web Technologies (2023)	**Book**
5.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com http://www.kbe.eg	**websites**

C) Theoretical Part:

Course Contents	Teaching and Learning Methods							Assessment methods			
	Lecture	Online interactive discussion	Record video	Group discussion	Lab sessions	Problem solving	Self-learning	Periodical Exam	Practical/Tutorial	Written	Oral
Basic concepts of computer and information technology	√	√	√	√		√		√		√	√
Algorisms and flowcharting fundamentals	√	√	√	√		√		√		√	√
Introduction to computer programming	√	√	√	√		√		√		√	√
Selection statements in computer	√	√	√	√				√		√	√
For statement in computer	√	√	√	√		√		√		√	√
While statements in computer	√	√	√	√		√		√		√	√
Do-While statement in computer	√	√	√	√		√				√	√
Computer networks introduction	√	√	√	√		√				√	√
Applications of Computer networks	√	√	√	√						√	√
Inherent IoT	√	√	√	√		√				√	√
Applications of IoT in Pharmaceutical Manufacturing	√	√	√	√		√				√	√

Some computer applications (self-learning)	√	√	√	√		√	√			√	√
Application of Blockchain towards Pharmaceutical Industry	√	√	√	√		√				√	√

B) Practical Part:

Course Contents	Teaching and Learning Methods							Assessment methods			
	Lecture	Online interactive discussion	Record video	Group discussion	Lab sessions	Problem solving	Self-learning	Periodical Exam	Practical/Tutorial	Written	Oral
Basic concepts of computer and information technology		√	√	√	√	√			√		
Algorisms fundamentals		√	√	√	√	√			√		
flowcharting fundamentals		√	√	√	√	√			√		
Introduction to computer programming		√	√	√	√	√			√		
Selection statements in computer		√	√	√	√				√		
For statement in computer		√	√	√	√	√			√		
While statements in computer		√	√	√	√	√			√		

Do-While statement in computer		√	√	√	√	√			√		
Computer networks introduction		√	√	√	√	√			√		
Applications of Computer networks		√	√	√	√	√			√		
Inherent IoT		√	√	√	√	√			√		
Applications of IoT in Pharmaceutical Manufacturing		√	√	√	√	√			√		

Course Coordinator	**Ass. Prof. Dr. Mahmoud Mohamed Saafan**
Head of Department	**Prof. Dr. jenny Jeehan Mohamed Ahmed Nasr**

Date: 10/ 9/ 2023

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

بكالوريوس الصيدلة(فارم د –Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Social issues	اسم المقرر: قضايا مجتمعية
Academic Level: Level 1	المستوى الأكاديمي: الأول
Supervision: Vice dean of education and student's affair	الإشراف: وكيل الكلية لشئون التعليم والطلاب

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

University	**Mansoura**
Program on which the course is given	**Bachelor's in clinical pharmacy -Pharm D**
Academic Level	**First Level, Second semester, 2023-2024**
Date of course specification approval	**Sep 2023**

1- Basic Information: Course data:

Course Title	**Social issues**
Course Code	**UNVS101**
Prerequisite	**Registration**
Teaching Hours: Lecture	**1**
Practical	**--**
Total Credit Hours	**1 (Credit H)**

2- Course Aims:

This course will provide an overview of how sociological concepts and approaches can be applied to the study of the causes and consequences of various social issues in contemporary society. Topics may include overpopulation, human rights, illiteracy, belonging, citizenship youth and society relationship, poverty, crime, violence, social isolation, urban decay, changes in the family, consumerism, and health disparities.

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**	Recognize the structural, systemic factors which affect the quality of life of persons of different ages, gender, social class, sexual orientation, disability, and racial/ethnic backgrounds.

Domain 2: professional and ethical practice

Program K. element no.	Course K. element no.	Course K. element
2.1.1	**2.1.1.1**	Evaluate explanations given by structural-functionalism, conflict, and symbolic interactionist perspectives concerning causes and consequences of social problems related to deviance, inequality, social institutions, and modernization.
2.1.2	**2.1.2.1**	Assess and describe social problems resulting from modernization, such as urbanization, population growth, environmental issues, changes in science and technology, and international conflict.

Domain 4: personal practice

Program K. element no.	Course K. element no.	Course K. element
4.3.1	**4.3.1.1**	Apply effective time management skills.
4.3.2	**4.3.2.1**	Practice self-learning to improve professional skills.
	4.3.2.2	Apply different strategies for adult learning to achieve illiteracy.

4- Course Contents

Week No.	Topics	Credit Hours
1-2	المشكلات المترتبة على الزيادة السكانية.	2
3-4	حقوق الإنسان.	2
5-6	الشفافية ومكافحة الفساد.	2
7-8	سماحة الأديان	2
9-10	آداب الحوار مع الاخر	2
11-12	التربية الإعلامية الرقمية	2
13-14	التنمية المستدامة والتحول الأخضر	2
15	Compensatory/ alternative lecture	1
16	Revision/quiz	1
17	Final written exam	-

5- Teaching and Learning Methods:

	Teaching and Learning Methods	Week	K. elements to be addressed
5.1	Developed lecture	1-16	1.1.1.1, 2.1.1.1, 2.1.2.1, 4.3.1.1, 4.3.2.1, 4.3.2.2
5.2	Hybrid learning	1-16	1.1.1.1, 2.1.1.1, 2.1.2.1, 4.3.1.1, 4.3.2.1, 4.3.2.2
5.3	Self-learning	1-16	1.1.1.1, 2.1.1.1, 2.1.2.1, 4.3.1.1, 4.3.2.1, 4.3.2.2

6- Student Assessment:

a- Assessment Methods:

1- عملي ميداني	**1.1.1.1, 2.1.1.1, 2.1.2.1, 4.3.1.1, 4.3.2.1, 4.3.2.2**
2- **Written exam**	**1.1.1.1, 2.1.1.1, 2.1.2.1, 4.3.1.1, 4.3.2.1, 4.3.2.2**

b- Assessment schedule

Assessment 1	عملي ميداني	1-16 weeks
Assessment 2	**Written**	17th week

c- Weighing of assessments

1	عملي ميداني	% 50
2	**Final-term examination**	% 50
Total		% 100

7- Facilities required for teaching and learning

Library	Books
Websites	http://www.ekb.eg http://www.google.com

8- Matrix of knowledge and skills of the course

Course contents	Outcomes Domains / Key elements						
	Domain 1		Domain 2			Domain 4	
	1.1.1.1		2.1.1.1	2.1.2.1	4.3.1.1	4.3.2.1	4.3.2.2
المشكلات المترتبة على الزيادة السكانية.				√	√	√	
حقوق الإنسان.	√				√	√	
الشفافية ومكافحة الفساد.	√				√	√	
سماحة الأديان			√		√	√	

آداب الحوار مع الاخر			√			√	√	
التربية الإعلامية الرقمية						√	√	√
التنمية المستدامة والتحول الأخضر						√	√	√

[

9- List of References

No	Reference	Type
1.	http://www.ekb.eg http://www.google.com	Websites

Supervision:	**Vice dean of education and student's affair**
Course Coordinator	**Dr. Rasha Fathy Barwa**

Date: 9 /2023

بكالوريوس الصيدلة الإكلينيكية (فارم دي – Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Pharmaceutical Analytical Chemistry II	**اسم المقرر: كيمياء تحليلية صيدلية 2**
Academic Level: level one	**المستوى الأكاديمي** : الأول
Scientific department: Pharmaceutical analytical chemistry	**القسم العلمي** : الكيمياء التحليلية الصيدلية
Head of Department: Prof. Dr. jenny Jehan Mohamed Ahmed Nasr	**رئيس القسم :** أ.د/ جيني جيهان محمد أحمد نصر
Course Coordinator: Prof. Dr. Fawzia Ibrahim Habib	**منسق المقرر :** ا.د/ فوزية إبراهيم حبيب

University	Mansoura
Faculty	Pharmacy
Department offering the course	Pharmaceutical analytical chemistry
Program on which the course is given	Pharm D-Clinical Pharmacy Program
Academic Level	First level, Second semester, 2023-2024
Date of course specification approval	10 /9/2023

A- Basic Information: Course data:

Course Title	Pharmaceutical Analytical Chemistry II
Course Code	PC 203
Prerequisite	Pharmaceutical Analytical Chemistry I
Teaching Hours/ week: Lecture:	2
Practical:	1
Total Credit Hours	3

B- Professional Information:

11- Course Aims:

This course enables the students to:

- The course provides the basic concepts of quantitative chemical methods of analysis, including Complexometric titration, oxidation reduction titration and electrochemical analysis (potentiometry, conductometry)
- Covers the application of these methods to pharmaceutical compounds.

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)	Clarify the theory and principles of complexometric titration, reduction oxidation titration and electrochemical methods of analysis.
(1.1.3)	(1.1.3.1)	Combine the principles of different analytical techniques for the estimation of pharmaceutical compounds and metals in water analysis.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Select and apply, complexometric, redox or electrochemical analytical methods to analyze pharmaceutical materials
2.2.3	2.2.3.1	Demonstrate the principles of various electrochemical methods used for the analysis of different raw materials.
2.2.4	2.2.4.1	Explain the principles of pharmaceutical calculations and their applications to pharmaceutical analysis.
2.3.1	2.3.1.1	Select appropriate methods for handling and disposal of materials used in pharmaceutical analysis.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Retrieve and analyze information to solve problems and work individually or effectively in a team.
4.3.1	4.3.1.1	Implement self-assessment to improve personal competencies.
4.3.2	4.3.2.1	Practice self-learning needed to improve professional skills

3- Course Contents

D) Theoretical part

Week No.	Topics	Hours
1	Complexometric titration; introduction, EDTA titration, metallochromic indicators.	2
2	EDTA titration curve, types of EDTA titrations.	2
3	EDTA selectivity, analysis of mixtures of metal ions.	2
4	Introduction to redox titrations,	2
5	Nernst equation	2
6	Factors affecting redox potential.	2
7	Applications of redox reactions	2
8	Applications of redox reactions in determination of pharmaceutical compounds.	2
9	- Potentiometry principles and instrumentation Potentiometric titration	2
10	Methods of Potentiometric titration and application.	2
11	Determination of pharmaceutical drugs by Potentiometric titration	2
12	Conductometry principles and instrumentation	2
13	Determination of pharmaceutical drugs by Conductometry Application of conductometry + **self-learning.**	2
14	Determination of pharmaceutical drugs by Conductometry Application of conductometry (Cont.)	2
15	Compensatory and alternative lecture	2
16	Revision and quiz	2
17	**Final Written and Oral Exam**	--

E) Practical part

Week No.	Topics	Hours
1	-Complexometric determination of Ca^{+2}.	1
2	-Complexometric determination of Ca^{+2}/Mg^{+2} mixture.	1
3	-Complexometric determination of Zn^{+2}.	1
4	-Complexometric determination of Al^{+3}	1
5	1-Determination of persulfate 2-Determination of ascorbic acid.	1

6	1- determination of oxalic acid. 2- determination of oxalic acid/acetic acid mix.	1
7	Determination of Fe^{+2} / Fe^{+3} mixture	1
8	Midterm	-
9	Determination of lead acetate	1
10	Determination of iodine/iodide mixture.	1
11	Potentiometric titration	1
12	Potentiometric titration problems (zero order curve).	1
13	Potentiometric titration problems (first and second curves)	1
14	Conductometric titration	1
15	Revision and activity	1
16	**Practical exam**	1

4- Teaching and Learning Methods:

Teaching and learning Methods		**Weeks No.**	**Key elements to be addressed**
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • Online learning through my mans "Mansoura university" as recorded video lectures Interactive discussion through My Mans.	1-16	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.2.4.1 2.3.1.1,
4.1	Practical session using chemicals and laboratory equipment and/or tutorials	1-15`	**2.2.1.1, 2.2.3.1, 2.2.4.1, 2.3.1.1, 4.1.2.1, 4.3.1.1, 4.3.2.1**
4.2	Self-learning	13	2.3.1.1,4.1.2.1, 4.3.1.1,4.3.2.1
4.3	Class Activity Discussion / Brainstorming / problem solving	4-6,13,14	2.2.3.1, 4.1.2.1, 4.3.1.1,4.3.2.1

5- Student Assessment:

l- Assessment Methods:

Assessment Methods	Key elements to be assessed
1- Periodical exam / Course work	**1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.2.4.1, 2.3.1.1,**
2- Practical exam using OSPE	**2.2.1.1, 2.2.4.1, 4.1.2.1, 4.3.1.1, 4.3.2.1**
3- Written exam	**1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.2.4.1, 2.3.1.1,**
4- Oral exam	**1.1.1.1, 1.1.3.1, 4.1.2.1, 4.3.1.1, 4.3.2.1**

m- Assessment schedule:

Assessment 1	Periodical exam / Course work	6-9th week
Assessment 2	Practical exam (OSPE)	16th week
Assessment 3	Written exam	17th week
Assessment 4	Oral exam	17th week

n- Weighing of assessment:

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

6- Facilities required for teaching and learning.

- Classroom	Data show- Computers, Internet.
- Laboratory facilities	chemicals- glass wares- white board
- Library	Books

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members.	Course notes
2.	Recorded videos prepared by stuff members	Videos
3.	Principles of Instrumrntal Analysis, Skoog, D. A. Holler, F. J. and Crouch, S.R. 7th ed., Thomson, Belmont, USA (2018) Principles of Instrumental Analysis - Douglas A. Skoog, F. James Holler, Stanley R. Crouch - Google Books	Essential Book
4.	Pharmaceutical Analytical Chemistry, Quantitative Analysis, Amer, M.M. Faculty of Pharmacy, Cairo University	Recommended Book
5.	Fundamentals of Analytical Chemistry , Douglas A.; Skoog ; Donald M., West, F. James Holler,Stanely, R.Crouch Thomson, Australia , 10th Edition (2021)	Recommended Book
7.	Introduction to Quantitative Analysis for International Educators (Springer Texts in Education) 1st ed. 2022 Edition by Melissa Whatley	Recommended Book
10.	http://www.sciencedirect.com / http://www.google scholar.com / http://www.pubmed.com https://www.ekb.eg	Website

8-Matrix:

Matrix 1. Course contents and course key elements

A) Theoretical part:

Course contents	Course Key elements								
	Domain: 1		Domain: 2				Domain: 4		
	1.1.1.1	1.1.3.1	2.2.1.1	2.2.3.1	2.2.4.1	2.3.1.1	4.1.2.1	4.3.1.1	4.3.2.1
Complexometric titration; introduction, EDTA titration, metallochromic indicators.	✓	✓	✓						
EDTA titration curve, types of EDTA titrations.		✓	✓						
EDTA selectivity, analysis of mixtures of metal ions.		✓	✓		✓	✓			
Introduction to redox titrations,	✓		✓		✓				
Nernst equation	✓		✓						
Factors affecting redox potential.	✓		✓						
Applications of redox reactions		✓	✓			✓			
Applications of redox reactions in determination of pharmaceutical compounds.		✓	✓						

Potentiometry principles and instrumentation Potentiometric titration	✓	✓	✓		✓				
Methods of Potentiometric titration and application.		✓	✓	✓	✓				
Determination of pharmaceutical drugs by Potentiometric titration		✓	✓	✓		✓			
Conductometry principles and instrumentation	✓		✓		✓				
Determination of pharmaceutical drugs by Conductometry Application of conductometry + **self-learning.**						✓	✓	✓	✓
Determination of pharmaceutical drugs by Conductometry Application of conductometry (Cont.)						✓	✓	✓	✓

B) Practical part:

Course contents	Course Key elements								
	Domain: 1		Domain: 2				Domain: 4		
	1.1.1.1	1.1.3.1	2.2.1.1	2.2.3.1	2.2.4.1	2.3.1.1	4.1.2.1	4.3.1.1	4.3.2.1
1-Complexometric determination of Ca^{+2}. 2-Complexometric determination of Ca^{+2}/Mg^{+2} mixture.			✓		✓	✓	✓	✓	✓
1-Complexometric determination of Zn^{+2}. 2-Complexometric determination of Al^{+3}			✓		✓	✓	✓	✓	✓
1-Determination of persulfate 2-Determination of ascorbic acid.			✓		✓	✓	✓	✓	✓
1- determination of oxalic acid. 2- determination of oxalic acid/acetic acid mix.			✓		✓	✓	✓	✓	✓
Determination of Fe^{+2} / Fe^{+3} mixture			✓		✓	✓	✓	✓	✓
Determination of lead acetate Determination of iodine/iodide mixture.			✓		✓	✓	✓	✓	✓
Potentiometric titration				✓		✓	✓	✓	✓
Potentiometric titration problems (zero order curve).				✓		✓	✓	✓	✓

Potentiometric titration problems (first and second curves)				✓		✓	✓	✓	✓
Conductometric titration				✓		✓	✓	✓	✓
Conductometric titration problems				✓		✓	✓	✓	✓

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

A) Theoretical part:

Course Contents	Teaching and Learning methods					Assessment methods			
	Lecture	Distance leaning	Class Activity	Lab sessions	Self-learning	Periodical exam	Practical/ Tutorial	Written	Oral
Complexometric titration; introduction, EDTA titration, metallochromic indicators.	✓	✓				✓		✓	✓
EDTA titration curve, types of EDTA titrations.	✓	✓				✓		✓	✓
EDTA selectivity, analysis of mixtures of metal ions.	✓	✓				✓		✓	✓
Introduction to redox titrations,	✓	✓	✓			✓		✓	✓
Nernst equation	✓	✓	✓					✓	✓
Factors affecting redox potential.	✓	✓	✓					✓	✓
Applications of redox reactions	✓	✓						✓	✓

Applications of redox reactions in determination of pharmaceutical compounds.	✓	✓						✓	✓
Potentiometry principles and instrumentation Potentiometric titration	✓							✓	✓
Methods of Potentiometric titration and application.	✓							✓	✓
Determination of pharmaceutical drugs by Potentiometric titration	✓							✓	✓
Conductometry principles and instrumentation	✓							✓	✓
Determination of pharmaceutical drugs by Conductometry Application of conductometry + **self-learning.**	✓		✓	✓	✓			✓	✓
Determination of pharmaceutical drugs by Conductometry Application of conductometry (Cont.)	✓		✓	✓	✓			✓	✓

B) Practical part:

Course Contents	Teaching and Learning methods					Assessment methods			
	Lecture	Distance learning (Videos)	Class Activity	Lab sessions	Self-learning	Periodical exam	Practical/Tutorial	Written	Oral
1-Complexometric determination of Ca^{+2}. 2-Complexometric determination of Ca^{+2}/Mg^{+2} mixture.		✓		✓			✓		
1-Complexometric determination of Zn^{+2}. 2-Complexometric determination of Al^{+3}		✓		✓			✓		
1-Determination of persulfate 2-Determination of ascorbic acid.		✓		✓			✓		
1- determination of oxalic acid. 2- determination of oxalic acid/acetic acid mix.		✓		✓			✓		

Determination of Fe^{+2} / Fe^{+3} mixture		✓		✓			✓		
Determination of lead acetate Determination of iodine/iodide mixture.		✓		✓			✓		
Potentiometric titration		✓		✓			✓		
Potentiometric titration problems (zero order curve).		✓		✓			✓		
Potentiometric titration problems (first and second curves)		✓		✓			✓		
Conductometric titration		✓		✓	✓		✓		
Conductometric titration problems		✓		✓	✓		✓		

Course Coordinator	**Prof. Dr. Fawzia Ibrahim**
Head of Department	**Prof. Dr. jenny Jehan Mohamed Ahmed Nasr**

Approval Date: 10/9/2023

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

بكالوريوس الصيدلة الإكلينيكية (فارم دى)
Pharm D- Clinical Pharmacy
Course Specification
Academic year: 2023/2024

Course name: Pharmaceutical Organic Chemistry-2	**اسم المقرر** : الكيمياء العضوية الصيدلية-2
Academic Level: level 1	**المستوى الأكاديمي** : الاول
Scientific department: Pharmaceutical Organic Chemistry	**القسم العلمي** : الكيمياء العضوية الصيدلية
Head of Department: Prof. Dr. Shahenda Metwally EL-Messery	**رئيس القسم :** أ.د/ شاهندة الميسيري
Course Coordinator: Prof. Dr. Fatma Elnabawyia goda	**منسق المقرر :** ا. د. فاطمة النبويه السيد جوده

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	Pharmaceutical Organic Chemistry
Department supervising the course	Pharmaceutical Organic Chemistry
Program on which the course is given	Pharm D-Clinical Pharmacy Program
Academic Level	First Level , second semester, 2023-2024
Date of course specification approval	10^{h} September, 2023

C- Basic Information: Course data:

Course Title	Pharmaceutical Organic Chemistry-2
Course Code	PC 204
Prerequisite	Pharmaceutical Organic Chemistry-1
Teaching credit Hours: Lecture:	2
Practical:	1
Total Credit Hours	3

D- Professional Information:

Course Aims:

This course enables the students to:

- Recognize the basic principles of organic chemistry concerning structures, nomenclature, preparation, properties of different organic compounds either aliphatic or aromatic.
- Understand the basic principles of Functional group transformations.
- Identify different types of organic substitution, addition and elimination reactions and their mechanisms.
- Acquire skills about laboratory techniques for determining the physical constants and performing practical chemical reactions to identify the unknown organic compounds of different classes, either aliphatic or aromatic.

Course k. elements:

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

Domain 1- fundamental knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	List and recognize the basic principles of different mechanisms of organic reactions of hydroxy compounds, carboxylic acids and amines.
1.1.3	1.1.3.1	Combine the principles of organic chemistry sciences to handle, identify, design and prepare different synthetic pharmaceutical materials.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Identify, design and prepare pharmaceutical materials from different origins.
2.2.3	2.2.3.1	Show the ability to use lab equipment to identify and design synthetic processes for raw materials and finished pharmaceutical products..
2.5.3	2.5.3.1	Apply scientific principles of research and systematic approaches in the search for best available chemical pathways to identify organic compounds.

Domain 4: personal practice:

Program K. element no.	Course K. element no.	Course K. element
4.1.1	4.1.1.1	Apply effective time management skills for identifying different unknown organic compounds and reaction pathways.
4.1.3	4.1.3.1	Demonstrate creativity in applying entrepreneurial skills in chemical transformations of different Functional groups.
4.3.2	4.3.2.1	Practice dependent learning to develop professional learning skills.

8- Course Contents

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

A) Theoretical part

Week No.	Topics	Hours
1	Alcohols	2
2	Thiols and phenols	2
3	Aryl halides	2
4	Aldehyde & ketones (Aliphatic and aromatic)	2
5	Carboxylic acids nomenclature	2
6	Synthesis of Carboxylic acids	2
7	Reactions of carboxylic acids	2
8	Sulphonic acids	2
9	Nitro compounds synthesis	2
10	Nitro compounds reactions	2
11	Amino compounds nomenclature and synthesis	2
12	Amino compounds reactions	2
13	Amino compounds Application (Self-learning)	2
14	Amino compounds Application (part 2)	2
15	Compensatory and alternative lecture	1
16	Revision and quiz	1
17	Final written and oral exam	--

B) Practical part

Week No.	Practical topics Identification of single organic compounds belonging to the following organic classes;	Practical Credit hours
1	Alcohols & (Ethanol, methanol, glycerol)	1
2	Phenols (Resorcinol, quinol, 1-naphthol, 2-naphthol).	1
3	Aldehydes & ketones (Formaldehyde, acetaldehyde, acetone)	1
4	Aliphatic Carboxylic acids (acetic acid, Oxalic acid, citric acid, tartaric acid)	1

5	Aromatic Carboxylic acids (salicylic acid, phthalic acid, benzoic acid)	1
6	Salts of carboxylic acids Amm oxalate, Na citrate, Na benzoate, Na salicylate	1
7	Esters, amides, imides (Methyl salicylate, urea, benzamide, phthalimide)	1
8	midterm	-
9	amides, imides (benzamide, phthalimide)	1
10	Aromatic amines& aniline salts & anilides (Aniline, aniline HCl, aniline SO_4, acetanilide).	1
11	Aromatic amines& aniline salts & anilides (Aniline, aniline HCl, aniline SO_4, acetanilide). continue	1
12	General Scheme Identification 1	1
13	General Scheme Identification 2 (Revision)	1
14	General Scheme Identification 3 (Revision)	1
15	Revision and activity	1
16	Sheet and Practical exam applying OSPE	1

9- Teaching and Learning Methods:

Teaching and Learning Methods		Week No.	K. elements to be addressed
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations b. Distance learning • On line learning through my mans "Mansoura university "as recorded – video lectures • Inter active discussion through My Mans	1-16	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.5.3.1
4.2	Self-learning	13	4.1.1.1, 4.1.3.1, 4.3.2.1
4.3	Practical session using chemicals and laboratory equipment and/ or tutorials	1-16	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.5.3.1, 4.1.1.1
4.4	Class Activity: Group discussion /Research assignments	4, 8, 13, 14	4.1.1.1, 4.1.3.1, 4.3.2.1
4.5	Problem – based learning and brainstorming	10, 13	4.1.1.1, 4.1.3.1, 4.3.2.1

10- Student Assessment:

11- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Periodical (Mid-term exam) / Course work	1.1.3.1, 2.2.1.1, 2.2.3.1, 2.5.3.1, 4.1.1.1, 4.1.3.1, 4.3.2.1
2-Practical exam using OSPE	2.2.1.1, 2.2.3.1, 2.5.3.1, 4.1.1.1, 4.3.2.1
3-Written exam	1.1.1.1, 1.1.3.1, 2.2.1.1, 2.2.3.1, 2.5.3.1.
4-Oral exam	1.1.3.1, 2.2.1.1, 2.2.3.1, 2.5.3.1, 4.1.1.1, 4.3.2.1

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	6-9th week
Assessment 2	Practical examination and tutorial (OSPE)	16th week
Assessment 3	Written exam	Start from 17th week
Assessment 4	Oral exam	Start from 17th week

o- Weighing of assessment:

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

12- Facilities required for teaching and learning.

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Water baths, flames, glassware, chemical reagents, white Boards

13- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
2.	Recorded videos prepared by stuff members	**Videos on platform**
3.	Fundamentals of Organic Chemistry, T. Solomon (1998). Practical Skill in Chemistry. By John RDean, Alan M. Jones, David Holmes, Rob Reed, Jonathan Weyers and Allan Jones. Pearson Education Limited	**Book**
4.	Mc Murry, J. in organic chemistry, 8th ed. (2011), Brooks/Cole, London	**Book**
5.	Vogel's Textbook of Practical Organic Chemistry (5th Edition), A.I. Vogel, A.R. Tatchell, B.S. Furnis, A.J. Hannaford, P.W.G. Smith	**Book**
6.	Organic Chemistry,T. W. Graham Solomons, Craig B. Fryhle, Scott A. Snyder, 12th Edition (2016).	**Book**
7.	https://www.ekb.eg http://www.chemsink.com/reactions/ http://www.chem.qmul.ac.uk/iupac/	**websites**

8-Matrix:

Matrix 1. Course contents and course key elements

A) Theoretical part:

Course contents	Course Key elements							
	Domain: 1		Domain: 2			Domain: 4		
	1.1.1.1	**1.1.3.1**	**2.2.1.1**	**2.2.3.1**	**2.5.3.1**	**4.1.1.1**	**4.1.1.2**	4.3.2.1
Alcohols	√			√				
Thiols and phenols	√			√				
Aryl halides	√	√		√	√			
Aldehyde & ketones (Aliphatic and aromatic)	√		√	√		√	√	
Carboxylic acids nomenclature	√			√		√		√
Synthesis of Carboxylic acids	√	√		√		√	√	√

Reactions of carboxylic acids	√			√		√	√	√
Sulphonic acids	√	√	√	√	√	√	√	√
Nitro compounds synthesis	√			√				
Nitro compounds reactions	√			√			√	
Amino compounds nomenclature and synthesis	√			√		√		
Amino compounds reactions	√	√	√	√			√	
Amino compounds Application (Self-learning)	√				√		√	√
Amino compounds Application (part 2)	√	√	√	√			√	

B) Practical part

Course contents	Course Key elements							
	Domain: 1		Domain: 2			Domain: 4		
	1.1.1.1	1.1.3.1	2.2.1.1	2.2.3.1	2.5.3.1	4.1.1.1	4.1.1.2	4.3.2.1
Alcohols & (Ethanol, methanol, glycerol)	√							
Phenols (Resorcinol, quinol, 1-naphthol, 2-naphthol).	√	√		√				
Aldehydes & ketones (Formaldehyde, acetaldehyde, acetone)	√		√	√				
Aliph & Aromatic Carboxylic acids (acetic acid, Oxalic acid, citric acid, tartaric acid)	√	√		√		√	√	
Aromatic Carboxylic acids (salicylic acid, phthalic acid, benzoic acid)	√			√		√	√	√
Salts of carboxylic acids Amm oxalate, Na citrate, Na benzoate, Na	√	√		√		√	√	√

salicylate								
Esters, amides, imides (Methyl salicylate, urea, benzamide, phthalimide)	√			√		√	√	√
amides, imides (benzamide, phthalimide)	√	√	√	√		√	√	√
Aromatic amines& aniline salts & anilides (Aniline, aniline HCl, aniline SO_4, acetanilide).	√			√			√	√
General Scheme Identification 1	√		√	√			√	√
General Scheme Identification 2 (Revision)	√			√		√	√	√
General Scheme Identification 3 (Revision)	√			√		√	√	√

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

A) Theoretical part:

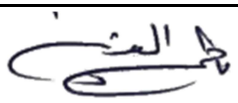
Course Contents	Teaching and Learning methods					Assessment methods			
	Lecture	Hybrid leaning	Comp. aided learning	Lab sessions	Self-learning	Corse Work	Practical/ Tutorial	Written	Oral

Alcohols	√		√					√	√
Thiols and phenols	√		√					√	√
Aryl halides	√		√					√	√
Aldehyde & ketones (Aliphatic and aromatic)	√	√	√					√	√
Carboxylic acids nomenclature	√		√					√	√
Synthesis of Carboxylic acids	√		√			√		√	√
Reactions of carboxylic acids	√	√	√			√		√	√
Sulphonic acids	√		√			√		√	√
Nitro compounds synthesis	√		√			√		√	√
Nitro compounds reactions	√		√					√	√
Amino compounds nomenclature and synthesis	√		√					√	√
Amino compounds reactions	√		√					√	√
Amino compounds Application (Self-learning)	√	√	√		√	√			
Amino compounds Application (part2)	√		√		√	√		√	√

B) Practical part:

Course Contents	Teaching and Learning methods					Assessment methods			
	Lecture	Hybrid learning	Comp. aided learning	Lab sessions	Self-learning	Course Work	Practical/Tutorial	Written	Oral
Alcohols & (Ethanol, methanol, glycerol)				√			√		
Phenols (Resorcinol, quinol, 1-naphthol, 2-naphthol).				√			√		
Aldehydes & ketones (Formaldehyde, acetaldehyde, acetone)				√			√		
Aliph & Aromatic Carboxylic acids (acetic acid, Oxalic acid, citric acid, tartaric acid)				√			√		

Aromatic Carboxylic acids (salicylic acid, phthalic acid, benzoic acid)				√			√		
Salts of carboxylic acids Amm oxalate, Na citrate, Na benzoate, Na salicylate				√			√		
Esters, amides, imides (Methyl salicylate, urea, benzamide, phthalimide)				√			√		
amides, imides (benzamide, phthalimide)			√	√			√		
Aromatic amines& aniline salts & anilides (Aniline, aniline HCl, aniline SO_4, acetanilide).			√	√			√		
General Scheme Identification 1			√	√			√		
General Scheme Identification 2 (Revision)			√	√			√		

Course Coordinator	**Prof. Dr. Fatma Elnabawyia goda** 
Head of Department	**Prof. Dr. Shahenda Metwally Elmessery** 

Approval Date: 10/9/2023

بكالوريوس الصيدلة الإكلينيكية (فارم دى)

Pharm D-Clinical Pharmacy

Course Specification

Academic year: 2023/2024

Course name: Cell biology	**اسم المقرر: بيولوجيا الخلية**
Academic Level: First level	**المستوى الأكاديمي: الأول**
Scientific department: Biochemistry	**القسم العلمي: الكيمياء الحيوية**
Head of Department: Ass. Prof. Noha M.H Abdel-Rahman	**رئيس القسم: ا.م.د نهى منصور حسن عبدالرحمن**
Course Coordinator:	**منسق المقرر:**

University	Mansoura University
Faculty	Faculty of 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	First level, Second semester, 2023-2024
Date of course specification approval	16/9/2023

A. Basic Information: Course data:

Course Title	Cell biology
Course Code	PB 201
Prerequisite	-
Teaching credit Hours: Lecture	1
Practical:	1
Total Credit Hours	2

B. Professional Information:

1. Course Aims:

1. To provide comprehensive coverage of cell biology and subcellular organisms.
2. To learn the interrelationship between cell cycle, apoptosis, and cancer.
3. To study the cell signaling mechanisms.
4. To equip students with skills those are both of value to future employment in some areas of biology.

2- Course k. elements:

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

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	Recall in-depth and breadth knowledge of biochemical and clinical sciences.
1.1.2	1.1.2.1	Recognize appropriate pharmaceutical and medical terminology, abbreviations and symbols in pharmacy practice
1.1.5	1.1.5.1	Identify and apply the principles, practice and critical understanding of fundamental sciences to solve problems related to human health and health systems.

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.3.1	2.3.1.1	Select, and apply appropriate methods and procedures and resources for handling and disposal of synthetic/natural materials and biological items used in pharmacy.
2.3.2	2.3.2.1	Conduct best practices and adhere to high ethical, legal and safety standards for management of biological and pharmaceutical materials/products.

Domain 3: Pharmaceutical Care

Program K. element no.	Course K. element no.	Course K. element
3.1.1	3.1.1.1	Identify different cell types and cell components and physiological, genetic, biochemical, metabolic and immunological changes brought about by disease or concomitant drug therapy.
3.1.4	3.1.4.1	Utilize etiology, epidemiology, pathogenesis, laboratory diagnosis, and clinical features to suggest the proper preventive strategies for various infections/diseases.

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 with other pharmacy team members and non-pharmacy team members and apply effective time management skills.
4.1.2	4.1.2.1	Collect information and analyze data, identify problems and present solutions, participate independently and collaboratively with other team members in the healthcare system.
4.2.1	4.2.1.1	Use clear language, pace, tone and non-verbal communication and writing skills when dealing with patients, other health team and communities.
4.2.2	4.2.2.1	Utilize advanced technologies and channels whenever possible to present relevant information.
4.3.1	4.3.1.1	Conduct self-evaluation strategies to manage and improve professional of pharmacy.
4.3.2	4.3.2.1	Promote continuous professional development by practicing self and independent learning.

3- Course Contents:

A. Theoretical part:

Week No.	Topics	Lecture credit Hours
1	Mission and Vision of the Biochemistry Department Course Aims & Course Objectives Cell Biology Levels of Biological Organization	1
2	Subcellular Structures (Organelles)	1
3	Subcellular Structures (Organelles)2	1
4	Biological membranes	1
5	Cell cycle and Control	1
6	Apoptosis	1
7	Cell signalling and communication 1	1
8	Cell signalling and communication 2	1
9	Cancer Cell & stem cell biology 1	1
10	Cancer Cell & stem cell biology 2	1
11	Cell motility	1
12	Macromolecules- DNA-RNA, Self-learning topic discussion	1
13	Gene expression and regulation	1
14	Gene expression and regulation (continue)	1
15	Compensatory and alternative lecture	1

16	Revision and quiz	1
17	**Final Theoretical and oral exam**	-

B. Practical part:

Week No.	Practical topics	Practical credit hours
1.	Laboratory safety instructions and how to research a topic	1
2.	Units, Amounts, Concentrations	1
3.	Microscopes: types, parts and specification	1
4.	Composition and permeability of cell membrane	1
5.	Study of prokaryotic, Eukaryotic, Plant and animal cells	1
6.	Types of blood cells (Red blood cells)	1
7.	Types of blood cells (white blood cells)	1
8.	Midterm	-
9.	Antigen, Antibody	1
10.	Blood grouping	1
11.	Hemolysis	1
12.	Enzymes.1	1
13.	Enzymes.2	1
14.	Study of cellular reproduction	1
15	Revision and activity	1
16.	Sheet and Practical exam applying OSPE	**1**

4- Teaching and Learning Methods:

Teaching and learning Methods		Weeks No.	K. elements to be addressed
4.1	Lectures	1-16	1.1.1.1, 1.1.2.1, 2.3.1.1, 3.1.1.1, 4.1.1.1,
4.2	Practical sessions	1-15	1.1.5.1, 2.3.2.1, 3.1.4.1, 4.2.1.1, 3.1.4.1
4.3	Hybrid learning: a. Online learning through my mans "Mansoura university" as recorded video lectures b. Interactive discussion through My Mans.	1-16	1.1.1.1,1.1.2.1,1.1.5.1,2.3.1.1,2.3.2.1, 3.1.1.1,3.1.4.1,4.1.1.1,4.1.2.1, 4.2.1.1,4.2.2.1,4.3.1.1,4.3.2.1
4.4	Practical work and tutorials	1, 2, 3, 7	1.1.1.1,1.1.5.1,2.3.1.1,2.3.2.1,3.1.1.1, 4.1.2.1,4.2.1.1
4.5	Self-learning	12	1.1.1.1,2.3.1.1,2.3.2.1,3.1.4.1 4.2.1.1
4.6	Presentation	3,4,5,6	1.1.1.1,1.1.2.1,3.1.1.1, 4.1.1.1, 4.1.2.1

5- Student Assessment:

p- Assessment Methods:

Assessment Methods	K. elements to be assessed
1-Written exam	1.1.1.1, 1.1.2.1, 1.1.5.1, 3.1.1.1, 3.1.4.1, 4.3.2.1
2-Practical exam applying OSPE/ OSCE	2.3.1.1,1.1.5.1, 2.3.2.1, 4.1.1.1
3-Oral exam	1.1.1.1, 3.1.1.1, 3.1.4.1, 4.2.1.1
4- Periodical (Mid-term exam) / Course work	1.1.1.1, 1.1.2.1, 3.1.1.1, 4.1.1.1, 4.1.2.1

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	6th -9th week
Assessment 2	Practical examination and tutorial	12th-16th week
Assessment 3	Written exam	17th week
Assessment 4	Oral exam	17th week

c. Weighing of assessments

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

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
- Laboratory facilities	Equipment and glassware.

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
2.	Recorded videos prepared by stuff members	**Videos on platform**
3.	Molecular cell biology, by Harvey Lodish, Arnold Berk, PaulMatsudaira, 5th edition,2007.	**Book**
4.	Campbell, Neil, and Jane Reece. "Membrane structure and function." *Biology* 7 (2014): 124-140.	**Book**
5.	https://www.sciencedirect.com/science/article/pii/B9780128196410001572 http://usir.salford.ac.uk/id/eprint/2245/?template=banner https://pubmed.ncbi.nlm.nih.gov/1752361/ https://www.ekb.eg	**websites**

Matrix 1. Course contents and course key elements

	Course contents	Course Key Elements											
		Domain: 1			Domain: 2		Domain 3		Domain: 4					
		1.1.1.1	**1.1.2.1**	**1.1.5.1**	**2.3.1.1**	**2.3.2.1**	**3.1.1.1**	**3.1.4.1**	**4.1.1.1**	**4.1.2.1**	**4.2.1.1**	**4.2.2.1**	**4.3.1.1**	**4.3.2.1**
A) Theoretical part														
Mission &Vision of Biochemistry Department Course Aims &Objectives Cell Biology Cell Theory Levels of Biological Organization		√	√		√		√		√					
Subcellular Structures (Organelles)		√	√			√	√							
Subcellular Structures (Organelles) 2		√		√	√	√	√							
Biological Membranes			√	√	√	√	√		√					√
Cell cycle and Control		√		√		√	√	√		√	√			
Apoptosis		√		√	√		√	√	√			√		
Cell signaling and			√		√	√	√	√			√			√

communication-1													
Cell signaling and communication-2		√		√	√	√	√			√			√
Cancer Cell & stem cell biology -1,2		√		√	√	√	√			√			√
Cell motility	√			√	√		√			√			
Macromolecules- DNA-RNA, Gene expression and regulation, Self-learning discussion	√			√	√		√			√			
Gene expression and regulation (continue)	√		√		√					√		√	

	Course contents	Course Key Elements												
		Domain: 1			Domain: 2		Domain: 3		Domain: 4					
		1.1.1.1	1.1.2.1	1.1.5.1	2.3.1.1	2.3.2.1	3.1.1.1	3.1.4.1	4.1.1.1	4.1.2.1	4.2.1.1	4.2.2.1	4.3.1.1	4.3.2.1
B) Practical part														
Laboratory safety instructions and how to			√	√	√	√	√							

research a topic													
Units, Amounts, Concentrations	√		√	√	√	√	√						
Microscopes: types, parts andspecification	√		√	√	√	√	√						
Composition and permeability of cell membrane	√		√		√	√	√		√				
Study of prokaryotic, Eukaryotic, Plant and animal cells	√		√	√	√	√			√	√			
Types of blood cells (Red blood cells)		√	√	√	√	√	√	√			√		
Antigen, Antibody and Blood grouping	√		√	√	√	√	√		√			√	
Hemolysis		√		√	√	√	√			√	√		

Enzymes	√		√	√	√	√	√		√			√	
Study of cellular reproduction	√		√		√	√	√		√				
Revision	√	√		√	√	√	√			√	√	√	

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

Course Contents	Teaching and Learning Methods						Assessment methods			
	Lecture	Hybrid learning	Lab sessions	presentation	Case Study	Self-learning	Corse Work	Practical/Tutorial	Written	Oral
Mission &Vision of Biochemistry Department Course Aims &Objectives Cell Biology Cell Theory	√	√							√	√

Levels of Biological Organization										
Subcellular Structures (Organelles)	√	√							√	√
Subcellular Structures (Organelles)	√	√					√		√	√
Biological Membranes	√	√					√		√	√
Cell cycle and Control	√	√		√			√		√	√
Apoptosis	√	√		√					√	√
Cell signaling and communication-1	√	√					√		√	√
Cell signaling and communication-2	√	√					√		√	√
Cancer Cell & stem cell biology -1	√	√							√	√
Cancer Cell & stem cell biology -2	√	√							√	√

Cell motility	√	√							√	√
Macromolecules- DNA-RNA, Gene expression and regulation , Self-learning discussion	√	√				√			√	√
Gene expression and regulation(continue)	√	√							√	√

Course Contents	**Teaching and Learning Methods**						**Assessment methods**			
	Lecture	Hybrid learning	Lab sessions	presentation	Case Study	Self-learning	Corse Work	Practical/Tutorial	Written	Oral
Laboratory safety instructions and how to research			√					√		
Units, Amounts, Concentrations			√					√		
Microscopes: types, parts andspecification			√	√				√		
Composition and permeability of cell membrane			√	√				√		

Study of prokaryotic, Eukaryotic, Plant and animal cells			√					√		
Types of blood cells (Red blood cells)			√					√		
Antigen, Antibody and Blood grouping			√					√		
Hemolysis			√					√		
Enzymes			√					√		
Study of cellular reproduction			√					√		
Revision			√					√		

Course Coordinator	
Head of Department	

Date: 16/ 9/ 2023

الإكلينيكية (فارم دى) بكالوريوس الصيدلة
Pharm D-Clinical Pharmacy
Course Specification
Academic year: 2023/2024

Course name: Anatomy and histology	**اسم المقرر : التشريح وعلم الانسجة**
Academic Level: Level 1	**المستوى الأكاديمي : الاول**
Scientific department: Pharmacology & Toxicology	**القسم العلمي : الادويه والسموم**
Head of Department: **Prof. Dr. Manar A. Nader**	**رئيس القسم :** **أ.د/ منار احمد نادر**
Course Coordinator:	**منسق المقرر :**

University	Mansoura
Faculty	Pharmacy
Department offering the course	Anatomy and histology
Department supervising the course	Pharmacology & Toxicology
Program on which the course is given	**Pharm D-Clinical Pharmacy Program**
Academic Level	Level 1, second semester , 2023-2024
Date of course specification approval	18th September 2023

A. Basic Information: Course data:

Course Title	**Anatomy and histology**
Course Code	**MD 202**
Prerequisite	**Registration**
Teaching credit Hours: Lecture	**2**
: Practical	**0**
Total Credit Hours	**2 (Credit H)**

B. Professional Information:

1 .Course Aims:

This course enables the students to be provided with competency concerning the proper functions of cells, tissues, organs and body system as well as integrate physiological data and mechanisms with ongoing taught sciences: anatomy and histology.

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**	Realize knowledge of pharmaceutical, biomedical, administrative and clinical sciences
1.1.2	**1.1.2.1**	Utilize the proper pharmaceutical and medical terminology in pharmacy practice and recall names of drug.
1.1.7	**1.1.7.1**	Gather new information, including evidence-based information, that may be applicable to patient care

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
2.3.1	**2.3.1.1**	Use suitable methods for disposal of natural or synthetic materials, biological and biotechnology-based items used in pharmacy
2.5.3	**2.5.3.1**	Use scientific principles of research and utilize systematic studies in the research

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4-2-1	4-2-1-1	Use clear language, pace, tone and non-verbal communication when dealing with other health team and communities.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	**Introduction to human anatomy**	2
2	**Anatomy of skeletal and articular systems**	2
3	**Anatomy of digestive system**	2
4	**Anatomy of respiratory system**	2
5	**Anatomy of nervous system**	2
6	**Anatomy of cardiovascular system**	2
7	**Introduction to histology and cytology**	2
8	**Histology of epithelium and connective tissue**	2
9	**Histology of bone and cartilage**	2
10	**Histology of muscular and nervous tissue systems**	2
11	**Histology of digestive system**	2
12	**Histology of respiratory system**	2
13	**Histology of vascular system**	2
14	**Histology of endocrine system (self-learning)**	2
15	**Compensatory and alternative lecture**	1
16	**Revision and quiz**	1
17	**Final theoretical exam**	-

4- Teaching and Learning Methods:

	Teaching and learning method	Week number	K. elements to be addressed
4.1	**Advanced lectures:** • Lectures using Data show, power Point presentations • Brain storming • Group discussion	1-16	**1.1.1.1, 1.1.2.1, 1.1.7.1, 2.3.1.1,2.5.3.1 , 4.2.1.1**
4.2	b. Hybrid learning • On line learning through my mans "Mansoura university " • Inter active discussion through My Mans	6,13	**1.1.1.1, 1.1.2.1, 1.1.7.1, 2.3.1.1,2.5.3.1, 4.2.1.1**
4.3	Self-learning	14	**4-2-1-1**
4.4	Collaborative learning: research project	9-11	**1.1.1.1, 1.1.2.1, 1.1.7.1, 2.3.1.1,2.5.3.1, 4.2.1.1**

5- Student Assessment:

q- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	**1.1.1.1, 1.1.2.1, 1.1.7.1, 2.3.1.1,2.5.3.1**
2-Practical exam	----------
3-Oral	----------
4- Periodical (Mid-term exam) / Course work	**1.1.1.1, 1.1.2.1, 1.1.7.1, 2.3.1.1,2.5.3.1, 4.2.1.1**

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	6th- 9th week
Assessment 2	Practical examination and tutorial	----------
Assessment 3	Written exam	Start from 17th week
Assessment 4	Oral exam	----------

c. Weighing of assessments

1	Periodical (Mid-term) exam / Course work	25%
2	Practical examination and tutorial	0 %
3	Final-term examination	75 %
4	Oral examination	0 %
Total		100%

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.

7- List of References

No	Reference	Type
1.	**Electronic book prepared by staff members.**	**Course notes**
2.	Richard L. Drake, A. Wayne Vogl, Adam W. M. Mitchell. Gray's Anatomy for Students 4th Edition (2019)	**Book**
3.	https://WWW.ekb.eg/ https://WWW.google scholer.com/ https://WWW.pubmed.com/ https://WWW.sciencedirect.com/	**websites**

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

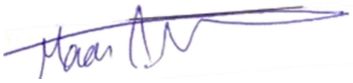
Course contents	Outcomes Domains / Key elements						
	Domain 1				Domain 2		Domain 4
	1.1.1.1	1.1.2.1	1.1.7.1		2.3.1.1	2.5.3.1	4.2.1.1
Introduction to human anatomy	√	√	√		√	√	
Anatomy of skeletal and articular systems	√	√	√		√	√	
Anatomy of digestive system	√	√	√		√	√	
Anatomy of respiratory system	√	√	√		√	√	
Anatomy of nervous system	√	√	√		√	√	
Anatomy of cardiovascular system	√	√	√		√	√	
Introduction to histology and cytology	√	√	√		√	√	√
Histology of epithelium and connective tissue	√	√	√		√	√	√
Histology of bone and cartilage	√	√	√		√	√	√
Histology of muscular and nervous tissue systems	√	√	√		√	√	√

Histology of digestive system	√	√	√		√	√		√
Histology of respiratory system	√	√	√		√	√		√
Histology of vascular system	√	√	√		√	√		√
Histology of endocrine system (self-learning)	√	√	√		√	√		√

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

Course contents	**Teaching and learning methods**						**Assessment methods**			
	Advanced Lectures	Hybrid learning		Self-learning	Collaborative learning		Course work	Practical/tutorial	Written	Oral
Introduction to human anatomy	✓						✓		✓	
Anatomy of skeletal and articular systems	✓						✓		✓	

Anatomy of digestive system	✓						✓		✓	
Anatomy of respiratory system	✓						✓		✓	
Anatomy of nervous system	✓								✓	
Anatomy of cardiovascular system	✓	✓							✓	
Introduction to histology and cytology	✓								✓	
Histology of epithelium and connective tissue	✓								✓	
Histology of bone and cartilage	✓				✓				✓	
Histology of muscular and nervous tissue systems	✓				✓				✓	
Histology of digestive system	✓				✓				✓	
Histology of respiratory system	✓								✓	
Histology of vascular system	✓	✓							✓	
Histology of endocrine system (self-learning)	✓			✓					✓	

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

Date: 18/ 9/ 2023

الإكلينيكية (فارم دي) بكالوريوس الصيدلة

Pharm D-Clinical Pharmacy

Academic year: 2023/2024

Course name: Physical pharmacy	**اسم المقرر: الصيدلة الطبيعية**
Academic Level: First level	**المستوى الأكاديمي: الاول**
Scientific department: Pharmaceutics	**القسم العلمي: الصيدلانيات**
Head of Department: **Prof. Dr. Irhan Ibrahim Abu Hashim**	**رئيس القسم:** **أ.د/ إرهان إبراهيم أبوهاشم**
Course Coordinator: **Prof. Dr. Thanaa Mohamed Borg**	**منسق المقرر:** **أ.د/ ثناء محمد برج**

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

A. Basic Information: Course data:

Course Title	**Physical Pharmacy**
Course Code	**PT 202**
Prerequisite	**-------**
Teaching Hours: Lecture	**2**
Practical	**1**
Total Credit Hours	**3 (Credit H)**

B. Professional Information:

12- Course Aims:

1. Knowing the basic principles of physicochemical properties essential for the design and formulation of pharmaceutical products.
2. Studying the fundamental concepts of states of matter, phase equilibrium, colligative properties, and isotonicity.
3. Knowing the main principles of solubility, dissolution, partition coefficient.
4. Recognizing surface and interfacial phenomena, surface-active agents, adsorption and its application in pharmacy and rheological behavior of dosage forms.

2- Course k.elements 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	Recognize the physical properties of various substances used in pharmaceutical and administrative sciences such as interfaces in pharmacy, solubility, and the colligative properties of solutions,
	1.1.1.2	Describe different type of flow of liquids and the methods applied for viscosity determination.
1.1.9	1.1.9.1	Measure the physical parameters as viscosity, HLB, Colligative properties, and partition coefficient

Domain 2: professional and ethical practice

Program K. element no.	Course K. element no.	Course K. element
2.2.1	2.2.1.1	Design, identify and analyze physically the different pharmaceutical materials.

Domain 4: personal practice

Program K. element no.	Course K. element no.	Course K. element
4.1.2	4.1.2.1	Retrieve and critically analyze information, identify, and solve problems, and work autonomously and effectively in a team.
4.3.2	4.3.2.1	Practice self-learning to improve professional skills

13- Course Contents

A. Theoretical part:

Week No	Topics	Credit Hours
1	Newtonian systems, Non-Newtonian systems	2
2	Solution types	2
3	Rheology of liquids, Fundamental of rheology and thixotropy	2
4	Colligative properties	2
5	Fundamentals of surface phenomena and interfacial tension. Hydrophilic lipophilic balance (HLB) of surface-active agents	2
6	Solubility of gases in liquids, liquids in liquids,	2
7	Adsorption and its applications in pharmacy and medicine	2
8	Distribution phenomena, partition coefficient determination, and its applications.	2
9	Solubility of solid in liquids	2
10	Solubility of liquids in liquids	2
11	Diffusion and dissolution.	2
12	State of matter	2
13	Isotonicity	2
14	Isotonicity problems and Self-learning topic discussion	2
15	Compensatory and alternative lecture	1
16	Revision and quiz	1
17	Final written and oral exam	-

B. Practical part:

Week No.	Practical topics	Credit hours
1	Determination of relative viscosity by Oswald viscometer	1
2	The relation between the concentration of polymer and viscosity.	1
3	Determination of an average molecular weight of gelatin by viscosity method.	1
4	Determination of oxalic acid solubility by titration method.	1
5	Adsorption of oxalic acid by activated charcoal.	1

6	Determination of relative surface tension of surfactant by stalagmometer.	1
7	Determination of relative surface tension of surfactant by stalagmometer.	1
8	Midterm	-
9	Determination of Critical Micelle Concentration (CMC)	1
10	Micellar solubilization	1
11	Adsorption of oxalic acid by talc powder.	1
12	Adsorption of oxalic acid by activated charcoal.	1
13	Problems on adsorption	1
14	Problems on adsorption	1
15	Revision and activity	1
16	**Practical exam**	1

4- Teaching and Learning Methods:

Teaching and learning Methods		Weeks No.	K. elements to be addressed
4.1	Advanced Lectures using Data show, power Point presentations •Brainstorming • problem solving	1-16	**1.1.1.1/ 1.1.1.2 / 1.1.9.1 / 2.2.1.1**
4.2	Hyprid learning • Online learning through my mans "Mansoura university" as recorded video lectures Interactive discussion through My Mans	1-16	**1.1.1.1/ 1.1.1.2 / 1.1.9.1 / 2.2.1.1 / 4.1.2.1 /4.3.2.1**
4.3	Practical session using chemicals and laboratory equipment and/or tutorials	1-15	**1.1.9.1 / 2.2.1.1 / 4.1.2.1**
4.4	Self-learning, Class Activity Discussion	14	**4.1.2.1 / 4.3.2.1**

5- Student Assessment:

r- Assessment Methods:

1-Written exam	**1.1.1.1/ 1.1.1.2 / 1.1.9.1 / 2.2.1.1**
2-Practical exam	**2.2.1.1 / 4.1.2.1 /4.3.2.1**

applying OSPE	
3-Oral exam	**1.1.1.1/ 1.1.1.2 / 1.1.9.1 / 2.2.1.1 / 4.1.2.1 /4.3.2.1**
4-Periodical (Mid-term exam) / Course work	**1.1.1.1/ 1.1.1.2 / 1.1.9.1 / 2.2.1.1/4.1.2.1 /4.3.2.1**

s- Assessment schedule

Assessment 1	**Mid-term**	**6-9 th week**
Assessment 2	**Practical**	**16th week**
Assessment 3	**Written**	**17th week**
Assessment 4	**Oral**	**17th week**

t- Weighing of assessments

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

6- Facilities required for teaching and learning

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

7- List of References

No	Reference	Type
1.	**Electronic book "physical pharmacy" prepared by staff members.**	**Course notes**
2.	**Lecture videos prepared by professors**	**Videos on**
3.	**"Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems" 10th Ed., Wolters Kluwer, Loyd Allen, Howard C. Ansel, Lippincott Williams and Wilkins, Philadelphia, (2013).**	**Essential Book**
4.	**"Remington's: The science and practice of pharmacy" 22nd Ed., Pharmaceutical Press, Lippincott Williams and Wilkins, Philadelphia, (2012).**	**Essential Book**
5.	**"Aulton's Pharmaceutics: The design and manufacture of medicines" 6th Ed., Michael E.Aulton, Kevin M.G. Taylor, (2021).**	**Essential Book**

6.	**http://www.sciencedirect.com** http://www.google.com / http://www.pubmed.com https://www.ekb.eg	**Websites**

Matrix 1. Course content and course key elements

A. Theoretical part

Course contents	Outcomes Domains / Key elements							
	Domain 1				Domain 2		Domain 4	
	1.1.1.1	1.1.1.2	1.1.9.1		2.2.2.1		4.1.2.1	4.3.2.1
Newtonian systems, Non-Newtonian systems	√		√		√			
Solution types	√		√		√			
Rheology of liquids Fundamental of rheology and thixotropy	√	√	√		√			
Colligative properties	√	√	√		√			
Fundamentals of surface phenomena and interfacial tension. Hydrophilic lipophilic balance (HLB) of surface-active agents	√		√		√			
Solubility of gases in liquids, liquids in liquids,	√		√		√			
Adsorption and its applications in pharmacy and medicine	√		√		√			
Distribution phenomena and partition coefficient and its applications.	√		√		√			

Solubility of solid in liquids	√		√		√			
Solubility of liquid in liquids			√		√			
Diffusion and dissolution			√		√			
State of matter			√		√			
Isotonicity		√	√		√		√	√
Isotonicity problems and Self-learning topic discussion		√	√		√		√	√

B. Practical part

Course contents	Outcomes Domains / Key elements						
	Domain 1				Domain 2		Domain 4	
	1.1.1.1	1.1.1.2	1.1.9.1		2.2.2.1		4.1.2.1	4.3.2.1
Determination of relative viscosity by Oswald viscometer	√	√	√		√		√	√
The relation between the concentration of polymer and viscosity.	√	√	√		√		√	√
Determination of an average molecular weight of gelatin by viscosity method.	√	√	√		√		√	√
Determination of oxalic acid by titration method.	√		√		√		√	√
Adsorption of oxalic acid by activated charcoal.	√		√		√		√	√
Determination of relative surface tension of surfactant by	√		√		√		√	√

stalagmometer.								
Determination of relative surface tension of surfactant by stalagmometer.	√		√		√		√	√
Determination of Critical Micelle Concentration (CMC)	√		√		√		√	√
Micellar solubilization	√		√				√	√
Adsorption of oxalic acid by talc powder.	√		√		√		√	√
Adsorption of oxalic acid by activated charcoal.	√		√				√	√
Problems on adsorption	√		√				√	√
Sheet and Practical exam applying OSPE/ OSCE								

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

A. Theoretical part

Theoretical course contents	Teaching and Learning Methods					Assessment methods			
	Lecture	Hyperid lecture	Lab sessions	Problem solving	Self-learning	Corse Work	Practical	Written	Oral
Newtonian systems, Non-Newtonian systems	√	√	√			√	√	√	√
Solution types	√	√	√			√	√	√	√
Rheology of liquids Fundamental of rheology and thixotropy	√	√	√	√		√	√	√	√

Colligative properties	√	√	√	√		√	√	√	√
Fundamentals of surface phenomena and interfacial tension. Hydrophilic lipophilic balance (HLB) of surface-active agents	√	√	√	√		√	√	√	√
Solubility of gases in liquids, liquids in liquids,	√	√	√	√		√	√	√	√
Adsorption and its applications in pharmacy and medicine	√	√	√	√		√	√	√	√
Distribution phenomena and partition coefficient and its applications.	√	√	√	√		√	√	√	√
Solubility of solid in liquids	√	√	√			√	√	√	√
Solubility of liquid in liquids	√	√	√	√		√	√	√	√
Diffusion and dissolution	√	√	√	√		√	√	√	√
State of matter	√	√	√	√	√	√	√	√	√
Isotonicity problems	√			√		√		√	√
Isotonicity Self-learning Topic	√			√	√	√		√	√

A. Practical part

Practical course contents	Teaching and Learning Methods				Assessment methods	
	Lecture	Recorded videos	Lab sessions	Problem solving	Course Work	Practical
Determination of relative viscosity by Oswald viscometer		√	√	√	√	√
The relation between the concentration of polymer and viscosity.		√	√	√	√	√
Determination of an average molecular weight of gelatin by viscosity method.		√	√	√	√	√
Determination of oxalic acid by titration method.		√	√	√	√	√
Adsorption of oxalic acid by activated charcoal.		√	√	√	√	√
Determination of relative surface tension of surfactant by stalagmometer.		√	√	√	√	√
Determination of relative surface tension of surfactant by stalagmometer.		√	√	√	√	√
Determination of Critical Micelle Concentration (CMC)		√	√	√	√	√
Micellar solubilization		√	√	√	√	√
Adsorption of oxalic acid by talc powder.		√	√	√	√	√
adsorption of oxalic acid by activated charcoal).		√	√	√	√	√
Problems on adsorption		√	√	√	√	√

Course Coordinator	**Prof. Dr. Thanaa Mohamed Borg**
	
Head of Department	**Prof. Dr. Irhan Ibrahim Abu Hashim**
	

Date: 20 / 9 / 2023

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

Course Specification

Academic year: 2023/2024

Course name: Pharmacognosy-1 (PG 202)	اسم المقرر: عقاقير-1
Academic Level: Level 1	المستوى الأكاديمي: الأول
Scientific Department: Pharmacognosy	القسم العلمي: العقاقير
Head of Department: **Prof. Mahmoud F. ElSebai**	رئيس القسم: أ. د. محمود فهمي السباعي
Course Coordinator: To be nominated	منسق المقرر:

University	**Mansoura**
Faculty	**Pharmacy**
Department offering the course	**Pharmacognosy**
Department supervising the course	**Pharmacognosy**
Program on which the course is given	**B. Pharm. (PharmD) (Clinical Pharmacy)**
Academic Level	**Level 1, Second Semester, 2023/2024**
Date of course specification approval	**6/9/ 2023**

A. Basic information: course data:

Course Title	**Pharmacognosy-1**
Course Code	**PG 202**
Prerequisite	**Medicinal plants**
Teaching credit Hours: Lecture	**2**
Practical:	**1**
Total Credit Hours	**3**

B. Professional information:

1. Course aims:

This course enables the students to:

- Learn the basic of pharmacognosy and drugs derived from different plant parts leaves, barks, flowers, seeds, and woods.
- Differentiate between these different plant organs morphologically and microscopically.
- Identify their active constituents, medicinal uses, side effects.

2- Course k. Elements:

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

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
(1.1.1)	(1.1.1.1)	Outline the basic knowledge of macroscopical and microscopical characters of some medicinal; leaves, flowers, barks, woods, and seeds
(1.1.2)	(1.1.2.1)	List the appropriate geographical and botanical origin of the studied medicinal plants
(1.1.3)	(1.1.3.1)	Identify the principles of physical, chemical and microscopical characters in preparation of medicines and herbal mixtures from different plant organs as leaves, flowers, barks, and seed
(1.1.4)	(1.1.4.1)	Illustrate main active constituents of the studied medicinal plants as well as their therapeutic effects and safety

Domain 2: Professional and Ethical Practice

Program K. element no.	Course K. element no.	Course K. element
(2.2.1)	(2.2.1.1)	Analyze and evaluate the natural pharmaceutical materials from different origins as leaves, flowers, barks, woods, and seeds.
(2.2.2)	(2.2.2.1)	Conduct principles of quality control guidelines related to pharmaceutical industry of the herbal products from different sources in addition to possible interactions with some synthetic prescribed medications.
(2.3.1)	(2.3.1.1)	Utilize the appropriate methods to identify the active constituents of the target plants, their purity in pharmaceutical preparations as well as their handling and disposal.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
(4.1.1)	(4.1.1.1)	Work effectively in a team and demonstrate time management ability
(4.2.1)	(4.2.1.1)	Communicate effectively in a scientific language by verbal and written means regarding in the field of health care and medicinal plants regarding the studied topics.
(4.3.2)	(4.3.2.1)	Practice self-learning to improve professional skills.

3- Course Contents:

A. Theoretical part:

Week No.	Topics	Hours
1	**Leaves** (Introduction, Senna, Bearberry, Henna, Witch-Hazel, Gingko)	2
2	**Leaves** (Digitalis, Squill, Coca, Jaborandi, Boldo, Tea)	2
3	**Leaves** (Solanaceous leaves, Mentha, Eucalyptus, Buchu, Rosemary, Thymus, Gujava)	2
4	**Bark** (Introduction, Cassia, Cinnamon)	2
5	**Bark** (Cinchona, Cascara, Frangula, Pomegranate, Quillaia, Salix, Witch-Hazel, Wild cherry), **Aleppo Galls**	2
6	Bark (Cinchona, Cascara, Frangula, Pomegranate, Quillaia, Salix, Witch-Hazel, Wild cherry), Aleppo Galls. Continue	2
7	**Wood** (Introduction)	2
8	**Wood** (Quassia, Guaiacum, Sandal (yellow/red), Log wood)	2

9	**Flowers** (Introduction)	**15**
10	**Flowers** (Clove, Hibiscus, Chamomile, Pyrethrum)	2
11	**Flowers** (Santonica, Calendula, Lavender, Saffron, Safflower, Tilia, Red-rose, Arnica)	2
12	**Seeds** (Introduction, Linseed, *Nux-vomica*)	2
13	**Seeds** (Strophanthus, Fenugreek, Black mustard, Cardamon, Nutmeg)	2
14	**Seeds** (Colchicum, Psyllium, Unofficial seeds)	2
15	**Compensatory and alternative lecture**	1
16	**Revision and quiz**	1
17	**Final Theoretical Exam**	-

B. Practical part:

Week No.	Topics	Credit Hours
1	**Leaves** (Introduction, Senna)	1
2	**Leaves** (Digitalis)	1
3	**Leaves** (Solanaceous leaves)	1
4	**Leaves** (Eucalyptus, Rosemary, Gujava)	1
5	**Bark** (Cassia, Cinnamon)	1
6	**Bark** (Cinchona)	1
7	**Flowers** (Clove, Hibiscus)	1
8	**Midterm**	-

9	**Flowers** (Chamomile, Pyrethrum)	1
10	**Flowers** (Santonica, Calendula)	1
11	**Seeds** (Linseed, *Nux-vomica*)	1
12	**Seeds** (Fenugreek)	1
13	**Seeds** (Black mustard)	1
14	**Seeds** (Cardamon, Nutmeg)	1
15	**Revision and activity**	1
16	**Practical exam**	1

4- Teaching and Learning Methods:

	4- Teaching and Learning Methods:	Week No.	**K elements to be assessed**
4.1	Computer aided learning: a. Lectures using Data show, power Point presentations. b. Distance learning ● Online learning through my mans "Mansoura university "as recorded – video lectures ● Inter active discussion through My Mans	1-16	(1.1.1.1), (1.1.2.1), (1.1.4.1), (1.1.3.1), (2.2.1.1), (2.2.2.1), (4.3.2.1)
4.2	Practical sessions using chemicals and laboratory equipment and/ or tutorials	1-15	(1.1.1.1), (1.1.4.1), 2.2.1.1), (2.2.2.1), (2.3.1.1), (4.1.1.1)
4.3	Class Activity: Group discussion offline and online.	3,7,10	(1.1.1.1), (1.1.2.1), (4.1.1.1)
4.4	Self learning	13	(4.1.1.1), (4.2.1.1), (4.3.2.1)

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), (1.1.3.1), (2.2.1.1), (2.2.2.1)
2-Practical exam	(1.1.1.1), (1.1.4.1), (2.3.1.1), (2.2.1.1), (2.2.2.1), (4.1.1.1)
3-Oral	(1.1.1.1), (1.1.2.1), (4.1.1.1), (4.2.1.1), (4.3.2.1)
4- Periodical (Mid-term exam) / Course work	(1.1.1.1), (1.1.2.1), (1.1.3.1)

b. Assessment schedule

Assessment 1	Periodical (Mid-term exam) / Course work	6-9th week
Assessment 2	Practical examination and tutorial	16th week
Assessment 3	Written exam	17th week
Assessment 4	Oral exam	17th week

c. Weighing of assessments

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

6- Facilities required for teaching and learning

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

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	Course notes
2.	Amer, M.M., Maatooq, G.T., Marzouk, A.M., Baraka, H.N., Illustrated Botany, Amer printiing press (2009)	Essential Book

3.	Berg, L., Introductory Botany, Plants, People and the Environment, Thomson Higher Education, USA (2008).	**Supplementary Textbooks**
4.	Kar k.R., Misra M.N. and Kabi T., Textbook on Fundamentals of Botany. New Delhi 2005.	
5.	T.E. "Textbook of Pharmacognosy" 17th edition, CBS Publisher and Distributors, India, 2014.	
6.	http://www.sciencedirect.com/ http://www.googlescholar.com/ http://www.pubmed.com https://www.ekb.eg	**Websites**

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

Matrix 1. Course contents and course key elements

Course contents	**Course Key Elements**									
	Domain: 1				**Domain: 2**			**Domain: 4**		
	1.1.1.1	**1.1.2.1**	**1.1.3.2**	**1.1.4.1**	**2.2.1.1**	**2.2.2.1**	**2.3.1.1**	**4.1.1.1**	**4.2.1.1**	**4.3.2.1**
A) Theoretical part										
Leaves (Introduction, Senna, Bearberry, Henna, Witch-Hazel, Gingko)	√	√			√					
Leaves (Digitalis, Squill, Coca, Jaborandi, Boldo, Tea)	√		√	√	√		√			
Leaves (Solanaceous leaves, Mentha, Eucalyptus, Buchu, Rosemary, Thymus, Gujava)	√		√	√	√	√	√			
Bark (Introduction, Cassia, Cinnamon)	√		√	√	√	√		√		
Bark (Cinchona, Cascara, Frangula, Pomegranate, Quillaia, Salix, Witch-Hazel, Wild cherry), Aleppo Galls	√	√		√			√			

Wood (Introduction)	√	√		√			√			
Wood (Quassia, Guaiacum, Sandal (yellow/red), Log wood)	√	√		√		√	√			
Flowers (Introduction)	√	√		√		√	√			
Flowers (Clove, Hibiscus, Chamomile, Pyrethrum)	√	√		√		√				
Flowers (Santonica, Calendula, Lavender, Saffron, Safflower, Tilia, Red-rose, Arnica)	√							√	√	√
Seeds (Introduction, Linseed, *Nux-vomica*)			√				√			√
Seeds (Strophanthus, Fenugreek, Black mustard, Cardamon, Nutmeg)		√			√		√	√	√	
Seeds (Colchicum, Psyllium, Unofficial seeds)	√	√		√		√	√	√		√

Course contents	**Course Key Elements**									
	Domain: 1				**Domain: 2**			**Domain: 4**		
	1.1.1.1	**1.1.2.1**	**1.1.3.2**	**1.1.4.1**	**2.2.1.1**	**2.2.3.1**	**2.5.3.1**	**4.1.1.1**	**4.2.1.1**	**4.3.2.1**
B) Practical part										
Leaves (Introduction, Senna)	√	√	√							√
Leaves (Digitalis)	√	√	√					√		√
Leaves (Solanaceous leaves)									√	
Leaves (Eucalyptus, Rosemary, Gujava)	√	√	√		√	√	√		√	
Bark (Cassia, Cinnamon)	√	√						√	√	√

Bark (Cinchona)	√	√			√			√		√
Flowers (Clove, Hibiscus)										√
Flowers (Chamomile, Pyrethrum, Santonica, Calendula)	√		√							
Seeds (Linseed, *Nux-vomica*)								√		√
Seeds (Fenugreek, Black mustard)		√			√					√
Seeds (Cardamon, Nutmeg)		√						√		

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**
Leaves (Introduction, Senna, Bearberry, Henna, Witch-Hazel, Gingko)	√						√		√	√
Leaves (Digitalis, Squill, Coca, Jaborandi, Boldo, Tea)	√						√		√	√
Leaves (Solanaceous leaves, Mentha, Eucalyptus, Buchu, Rosemary, Thymus, Gujava)	√			√			√		√	√
Bark (Introduction, Cassia, Cinnamon)	√						√		√	√
Bark (Cinchona, Cascara, Frangula, Pomegranate, Quillaia, Salix, Witch-Hazel, Wild cherry), Aleppo Galls	√								√	√
Wood (Introduction)	√								√	√

Wood (Quassia, Guaiacum, Sandal (yellow/red), Log wood)	√			√					√	√
Flowers (Introduction)	√								√	√
Flowers (Clove, Hibiscus, Chamomile, Pyrethrum)	√								√	√
Flowers (Santonica, Calendula, Lavender, Saffron, Safflower, Tilia, Red-rose, Arnica)	√			√					√	√
Seeds (Introduction, Linseed, *Nux-vomica*)	√								√	√
Seeds (Strophanthus, Fenugreek, Black mustard, Cardamon, Nutmeg)	√								√	√
Seeds (Colchicum, Psyllium, Unofficial seeds)	√					√			√	√

B) Practical Part:

Course Contents	**Teaching and Learning Methods**						**Assessment methods**			
	Lecture	Online lecture	Lab sessions	Problem solving	Case Study	Self-learning	Corse Work	Practical/Tutorial	Written	Oral
Leaves (Introduction, Senna)			√					√		
Leaves (Digitalis)			√					√		
Leaves (Solanaceous leaves)			√					√		
Leaves (Eucalyptus, Rosemary, Gujava)			√					√		
Bark (Cassia, Cinnamon)			√					√		

Bark (Cinchona)			√					√		
Flowers (Clove, Hibiscus)			√					√		
Flowers (Chamomile, Pyrethrum, Santonica, Calendula)										
Seeds (Linseed, *Nux-vomica*)			√					√		
Seeds (Fenugreek, Black mustard)			√					√		
Seeds (Cardamon, Nutmeg)			√					√		

Course Coordinator	To be nominated
Head of Department	**Prof. Mahmoud Fahmy ElSebai**

Date: 6/9/ 2023

بكالوريوس الصيدلةالإكلينيكية (فارم دى – Pharm D)

Course Specification

Academic year: 2023/2024

Course name: Psychology	**اسم المقرر : علم النفس**
Academic Level: first level	**المستوى الأكاديمي :المستوي الاول**
Scientific department: biochemistry	**القسم العلمي : الكيمياء الحيويه**
Department supervising the course: Biochemistry department	**القسم المشرف علي التوصيف :** قسم الكيمياء الحيوية
Course Coordinator: Prof. Dr .Mohamed Elwasify	**منسق المقرر :** أ.م.د/ محمد الوصيفي

University	**Mansoura**
Faculty	**Pharmacy**
Department offering the course	**Biochemistry**
Department supervising the course	**Biochemistry**
Program on which the course is given	**Bachelor in Pharmacy(clinical pharmacy-Pharm D)**
Academic Level	**Level first ,first semester, 2023/2024**
Date of course specification approval	**16/9/2023**

A. Basic Information: Course data:

Course Title	**Psychology**
Course Code	**UR3**
Prerequisite	**-**
Teaching credit Hours: Lecture	**1**
: Practical	**-**
Total Credit Hours	**1**

B. Professional Information:

1 .CourseAims:

This course enables the students to:

- Introduces different principles, theories and vocabulary of psychology as a science.

- Aims to provide students with basic concepts of social psychology, medical sociology and interpersonal communication which relate to the pharmacy practice system that involves patients, pharmacists, physicians, nurses and other health care professionals.
- To study Psychophysics of Perception

2- Course k. elements:

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

Domain 1- Fundamental Knowledge

Program K. element no.	Course K. element no.	Course K. element
1.1.1	1.1.1.1	Recognize in-depth and breadth knowledge of pharmaceutical, biomedical, nutritional, social, behavioral, administrative, and clinical sciences.
1.1.6	1.1.6.1	Access, retrieve, critically analyze and apply relevant scientific literature and other scientific resources including s to make evidence-informed professional decisions.
1.1.8	1.1.8.1	Use health informatics to improve the quality of health and nutritional care, manage resources and optimize patient safety and understand metabolic disorders.

Domain 4: Personal Practice:

Program K. element no.	Course K. element no.	Course K. element
4.3.2	4.3.2.1	Promote continuous professional development by practicing self and independent learning.

3- Course Contents:

Week No.	Topics	Lecture credit Hours
1	Perception	1
2	Intelligence	1
3	Communication skills	1
4	Attention	1
5	Momory pharmacy	1
6	Motivation	1

7	Stress	1
8	Language acquisition	1
9	Sleep	1
10	Learning	1
11	Personality	1
12	Social psychology **and self-learning**	1
13	Human information processing	1
14	Rivison and quiz	1
15	**Final written and oral exam**	-

4- Teaching and learning Methods:

No	Teaching and learning Methods	Week	K. elements to be addressed
5.1	Lectures	1-14	1.1.1.1, 1.1.6.1, 1.1.8.1
5.2	Hybrid learning: a. On line learning through my mans "Mansoura university "as recorded – video lectures b. Inter active discussion through My Mans	1-14	1.1.1.1, 1.1.6.1, 1.1.8.1
5.3	Self-learning	12	4.3.2.1
5.4	Presentation.	9,10	1.1.6.1, 4.3.2.1

5- Student Assessment:

u- Assessment Methods:

Assessment Methods	K elements to be assessed
1-Written exam	1.1.1.1,1.1.8.1
2-Oral	1.1.1.1,1.1.8.1
3- Periodical (Mid-term	1.1.1.1

exam) / Course work	

b. Assessment schedule

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

c. Weighing of assessments

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

6- Facilities required for teaching and learning

-Class room	Data show- Computers, Internet.
Library	Reference books Benson, N., Ginsburg, J., Grand, V., Lazyan, M., & Weeks, M. (2012). The psychology book: Big ideas simply explained. Gabal.

7- List of References

No	Reference	Type
1.	Electronic book prepared by staff members	**Course notes**
2.	Recorded videos prepared by stuff members	**Videos on platform**
3.	https://www.ekb.eg	**websites**

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

Matrix 1. Course contents and course key elements

Course contents	Course Key Elements			
	Domain 1			Domain 4
	1.1.1.1	1.1.6.1	1.1.8.1	4.3.2.1
Perception	✓	✓		
Intelligence			✓	
Communication skills	✓			
Attention			✓	
Momory pharmacy		✓		✓
Motivation	✓			✓
Stress, Language acquisition	✓	✓	✓	✓
Sleep	✓			
Learning		✓	✓	✓

Personality	✓	✓		✓
Social psychology	✓			✓
Human information processing	✓	✓		✓

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

Course Contents	Teaching and Learning Methods						Assessment methods			
	Lecture	**Hybrid learning**	**Lab sessions**	**Presentation**	**Case Study**	**Self-learning**	**Corse Work**	Practical/Tutorial	Written	Oral
Perception	√	√							√	√
Intelligence	√	√					√		√	√

Communication skills	√	√					√		√	√
Attention.	√	√					√		√	√
Momory pharmacy.	√	√							√	√
Motivation	√	√					√		√	√
Stress, Language acquisition	√	√					√		√	√
Sleep	√	√		√					√	√
learning	√	√		√					√	√
Personality	√	√							√	√
Social psychology	√	√				√			√	√
Human information processing	√	√							√	√

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

Course Coordinator	Prof. Dr .Mohamed Elwasify
Head of Department	

Date: 16/9/2023