2020-2021

Bachelor of Pharmacy (PharmD-Clinical Pharmacy) Course Specification 2020-2021 First Level / First Semester



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Programme on which the course is given	Bachelor of Pharmacy (pharmD- Clinical Pharmacy)
Major or minor element of programme	Major
Department offering the course	Pharmaceutical Organic chemistry
Department supervising the course	Pharmaceutical Organic chemistry
Academic Year / Level	First year, semester (1)
Date of specification approval	9/2020

A- Basic Information

Title: Pharmaceutical Organic Chemistry I	Code: PC 101
Total credit Hours :3	Lecture: 2
	Practical :1

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

- The basic theories and principles of pharmaceutical organic chemistry which include electronic structure of atom, hybridization and theories of acids and bases.

- The chemistry and basics of stereochemistry.

- The chemistry of alkanes, cycloalkanes, alkenes, alkadienes, alkynes and alkyl halides.

The chemistry of Arenes and aromatic compounds (aromaticity, anti-aromaticity, and chemical behavior of aromatic compounds).
Purification and identification of various organic compounds.

2. Course learning outcomes

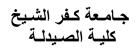
DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate knowledge from basic organic pharmaceutical sciences to manufacture products.

This competency will be developed via the following key elements:





KEY ELEMENTS

- 1.1.1. Demonstrate understanding the different classes of organic compounds.
- 1.1.2. Articulate knowledge about nomenclature to a given organic compound
- 1.1.3. Retrieve the mechanisms of different chemical reactions.
- 1.1.4. Identify and categorize organic compounds according to their chemical properties.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-1- COMPETENCY

Upon finishing this course, students will be able to standardize organic pharmaceutical materials and manufacture organic pharmaceutical products.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 2.1.1. Predict new methods for synthesizing different classes of organic compounds.
- 2.1.2. Recognize the chemical characters and methods can be used for the synthesis of saturated and unsaturated aliphatic hydrocarbons, alkyl halides and aromatic compounds.
- 2.1.3. Carry out methods for synthesizing saturated and unsaturated hydrocarbons and aromatic compounds.

2-2- COMPETENCY

Upon finishing this course, students will be able to handle and dispose synthetic pharmaceutical materials effectively and safely with respect to relevant laws and legislations.

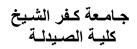
This competency will be developed via the following key elements:

KEY ELEMENTS

2.2.1. Handle safely synthetic materials to avoid their harm to individuals.

2.2.2. Use effectively laboratory reagents appropriately and safely.





DOMAIN 3: PHARMACEUTICAL CARE

3-1- COMPETENCY

Upon finishing this course, students will be able to apply the principles of body functions to participate in improving health care services using evidence-based data.

This competency will be developed via the following key elements:

KEY ELEMENTS

3.1.1. Relate etiology and features of certain diseases (e.g., cancer) to some high reactivity and cumulative toxicity of some synthetic compounds.

DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

Upon finishing this course, students will be able to express leadership, time management, critical thinking, problem solving, independent and team working skills.

This competency will be developed via the following key elements:

KEY ELEMENTS

4.1.1.	Demonstrate effective communication and leadership skills
amoi	ng students and staff.

- 4.1.2. Work effectively as part of a team to collect data and/or produce reports and presentations
- 4.1.3. Analyze data critically and able to solve scientific problems

4.1.4. Plan appropriate experiments in the laboratory bearing in mind technical availability and time limitations.

3. Contents

Week	Торіс	Total credit hours	Lecture	Practical/Tutorial
1	Electronic structure of atom and hybridization.	3	2	1
2	Introduction to organic compounds and the types of reactions they react.	3	2	1



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3	Alkanes, Cycloalkanes (nomenclature &preparation)	3	2	1
4	Alkenes, alkadienes and Alkynes (reactions)	3	2	1
5	Alkyl halides (nomenclature, and preparation)	3	2	1
6	Alkyl halides chemical reactions (SN1, SN2, E1, E2	3	2	1
7	Mid-term exam	3	2	1
8	Introduction to stereochemistry	3	2	1
9	Stereochemistry (cont.)	3	2	1
10	Stereochemistry (cont.)			
11	Stereochemistry (cont.)	3	2	1
12	Aromaticity &aromatic compounds.	3	2	1
13	Benzene & electrophilic substitution.	3	2	1
14	Electrophilic substitution & arenes.	3	2	Practical exam
15	Nucleophilic substitutions related to aromatic compounds.	2	2	Practical exam

4. Teaching and learning methods

a. Lectures	(√)
b. Practical training / laboratory	(√)
c. Class activity	(√)
d . E-Learning	(√)

5. Student assessment methods

Writton noriedical	To assess	The ability of students to follow up	
Written periodical	10 assess	The ability of students to follow-up	
exam		The course subjects.	
Practical exam	To assess	The gained experience in	
		laboratory methods and	
		techniques.	
Written final exam	To assess	The overall outcomes`	

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Course Specifications		
Oral exam	To assess	The ability of students in expressing and presenting their knowledge clearly and in systematic approach

Assessment schedule

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14, 15
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	16, 17

Weighting or assessments

Written periodical Examination	15	9/
Practical Examination	25	9/
Final Term Examination	50	9/
Oral Examination	10	o/
Other types of assessment		9
Total	100	9

6. List of references

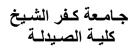
Course notes

- Notes on Organic chemistry prepared and distributed by Dept. of Pharmaceutical Chemistry.
- Lab Manual of Organic chemistry prepared and distributed by Dept. of Pharmaceutical Chemistry.

Essential books (text books)

- 1) Volhardt K. P. C.; Schore, N. A. in organic chemistry (structure and function), 6th edition (2010) W. H. Freeman and company. NY.
- 2) McMurry, J. in organic chemistry, 8th ed. (2011), Brooks/Cole, London.
- 3)Solmon's T. W. G. in Organic Chemistry 10th ed. (2010), John Wiley and sons, Inc, NY.
- 4) I. L. Finar Organic Chemistry Volume 1: The Fundamental Principles 5th edition, 1998, Longman Publishing Group.
- 5) I. L. Finar Organic Chemistry Volume 2: Stereochemistry and the chemistry of natural products 5th edition, 1998, Longman Publishing Group.
- 6) Bruice, P. Y. in organic chemistry, 6th edition (2010), Pearson education int. NY.





Recommended books

- 1) Solmon's T. W. G. in Organic Chemistry 10th ed. (2010), John Wiley and sons, Inc, NY.
- 2) I. L. Finar Organic Chemistry Volume 1: The Fundamental Principles 5th edition, 1998, Longman Publishing Group.
- 3) I. L. Finar Organic Chemistry Volume 2: Stereochemistry and the chemistry of natural products 5th edition, 1998, Longman Publishing Group

Websites

http://www.sciencedirect.com,www.4shared.com

7. Facilities required for teaching and learning

- -Class rooms.
- -Laboratory facilities.
- Data show
- Computers.
- -Library.
- -Internet.
- Hot plate with magnetic stirrers.

Course coordinator:

Dr. Rofaida Abdelmoaty Salem

Head of Department:

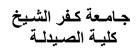
Prof.Dr. Ramadan Eldomany

Date: 9/2020

Course Plan

Week	Торіс	Key Elements	Teaching & Learning Methods	Student Assessment Methods		
1	Electronic structure of atom and hybridization.	1.1.1	Lectures and class activities	Written and oral exams		
2	Introduction to organic compounds and the types of reactions they react.	1.1.1, 1.1.2, 2.2.1, 2.2.2	Lectures, practical training and class activities	Written, practical and oral exams		
3	Alkanes, Cycloalkanes (nomenclature & preparation)	1.1.1, 1.1.2, 1.1.3, .1.1.4, 2.1.1, 2.1.2, 2.1.3, 3.1.1	Lectures, practical training and class activities	Written, practical and oral exams		
4	Alkenes, alkadienes and Alkynes (reactions)	1.1.1, 1.1.2, 1.1.3, .1.1.4, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 4.1.4	Lectures, practical training and class activities	Written, practical and oral exams		
5	Alkyl halides (nomenclature, and preparation)	1.1.1, 1.1.2, 1.1.3, .1.1.4, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 4.1.4	Lectures, practical training and class activities	Written, practical and oral exams		
6	Alkyl halides chemical reactions (SN1, SN2, E1, E2)	1.1.1, 1.1.2, 1.1.3, 1.1.4, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 4.1.2	Lectures, practical training and class activities	Written, practical and oral exams		





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7	Mid-term exam			
8	Introduction to stereochemistry	1.1.5, 4.1.1	Lectures, practical training and class activities	Written, practical and oral exams
9	Stereochemistry (cont.)	1.1.5, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2	Lectures, practical training and class activities	Written, practical and oral exams
10	Stereochemistry (cont.)	1.1.5, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2	Lectures, practical training and class activities	Written, practical and oral exams
11	Stereochemistry (cont.)	1.1.5, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 4.1.3	Lectures, practical training and class activities	Written, practical and oral exams
12	Aromaticity & aromatic compounds.	1.1.1, 1.1.2, 1.1.3, .1.1.4, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 3.1.1, 4.1.4	Lectures, practical training and class activities	Written, practical and oral exams
13	Benzene & electrophilic substitution.	1.1.1, 1.1.2, 1.1.3, .1.1.4, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 4.1.4	Lectures, practical training and class activities	Written, practical and oral exams
14	Electrophilic substitution & arenes.	1.1.1, 1.1.2, 1.1.3, .1.1.4, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 4.1.1	Lectures, practical training and class activities	Written, practical and oral exams
15	Nucleophilic substitutions related to aromatic compounds.	1.1.1, 1.1.2, 1.1.3, 1.1.4	Lectures and class activities	Written and oral exams

Course coordinator:

Dr. Rofaida Abdelmoaty Salem

Head of Department: Prof.Dr. Ramadan Eldomany

Date: 9/2020



جامعة كفر الشيخ كلية الصيدلة

Course Specifications

Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (Pharm D- Clinical Pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmaceutical Analytical Chemistry
Department supervising the course	
Academic Year / Level	First Year/ First Semester
Date of specification approval	9/2020

A- Basic Information

Title: Pharmaceutical Analytical Chemistry I	Code: PA 101
Total contact hours: 4 hours	Lecture :2 hours
Total credit hours: 3 hours	Practical :2 hours

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students should be able to understand:

- 1.1. different chemical compounds such as acids and bases.
- 1.2. various quantitative analytical techniques including titration reactions (in aqueous and non-aqueous media), and precipitation reactions.

2. Intended Learning Outcomes (ILOs)

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon successful completion of this course, students will be able to integrate knowledge from basic inorganic and analytical chemistry to standardize materials.

This competency will be developed via the following key elements:

KEY ELEMENTS



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1.1.1. Describe fundamentals of analytical chemistry: ionization theory, concepts of acids and bases.

1.1.2. Discuss classical methods of analysis (titrimetry): types of reactions in titrimetry.

1.1.3. Explain acid base titrations in aqueous and non-aqueous media.

1.1.4. Explain precipitate formation titration (Mohr, Fajan and Volhard methods).

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-1- COMPETENCY

Upon finishing this course, students will be able to apply the acquired knowledge to standardize some pharmaceutical materials.

This competency will be developed via the following key elements:

KEY ELEMENTS

2.1.1. Use effectively appropriate titrimetric methods for analysis of some pharmaceutical materials.

2-2- COMPETENCY

Upon finishing this course, students will be able to handle and dispose chemical materials effectively and safely with respect to relevant laws and legislations.

This competency will be developed via the following key elements:

KEY ELEMENTS

2.2.1. Handle chemical materials safely to avoid their harm to individuals.

2.2.2. Use laboratory reagents, glassware and equipment safely and appropriately.

DOMAIN 3: PHARMACEUTICAL CARE



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DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

Upon finishing this course, students will be able to express leadership, time management, critical thinking, problem solving, independent and team working skills.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 4.1.1. Work effectively in team for the aim of determination of concentration of various analytes.
- 4.1.2. Carry out assay experiments considering technical availability and time limitations.

4.1.3. Propose appropriate strategy for analysis of mixtures of selected analytes.

4.1.4. Calculate different physical constants (pK_w , pk_a , pK_b , etc.) to solve analytical problems.

4.1.5. Interpret equilibrium problems e.g. calculation of pH of strong and weak acids, strong and weak bases, different salts, etc.

3. Contents

Week	Торіс	Total contact hours	Lecture	Practical
1	Chemical kinetics, rate of reaction, rate law, first order reaction.	4	2	2
2	Second order and third order reactions, molecularity.	4	2	2
3	Activation energy and catalysis, photochemistry, absorbed energy and quantum yield.	4	2	2
4	 Introduction to qualitative and quantitative analysis. Concepts of acids &bases Ionization theory (pH, pOH, pK_w, etc.) 	4	2	2
5	 Calculation of pH of aqueous solutions of acids, bases or salts of different strength i.e. pK_a. Buffer systems 	4	2	2
6	 Titrimetry: standard solutions and methods of expressing concentration. Principle and types of titrimetric reactions 	4	2	2



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Course Specifications				
7	Semester works	4	2	2
8	 Acid-Base titration in aqueous medium Acid –Base indicators Acid-Base titration curves 			
9	Application of acid –base titration in aqueous medium	4	2	2
10	 Acid-Base titration in Non-aqueous media Types of non-aqueous solvents Titration of weak acid & base Indicators to detect end points 	4	2	2
11	Application of acid-base titration in non- aqueous media	4	2	2
12	 Precipitation titrations: Factors affecting solubility Solubility product constant.	4	2	2
13	-Titration curves of precipitation titration - Argentometric methods.	4	2	2
14	-Mohr and Volhard methods	2	2	Practical exam
15	-Fajan method	2	2	Practical exam

4. Teaching and learning methods

a. Lectures	(√)
b. Practical training / laboratory	(√)
c. Seminar / Workshop	()
d. Class Activity	(√)
e. E-learning.	(√)
f. Smart board	(√)

5. Student assessment methods

Semester work	To assess	The ability of students to follow-up
		The course subjects.
Practical exam	To assess	The gained experience in laboratory
		methods and techniques.
Oral exam	To assess	The ability of students in expressing
		and presenting their knowledge
		clearly and in systematic approach.



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Course Specifications				
Written final example	m To assess The overa	ll outcomes	5.	
Assessment scl	hedule			
Assessment 1	Semester work	Week	7	
Assessment 2	Practical exam	Week	14,15	
Assessment 3	Final exam	Week	16,17	
Assessment 4	4 Oral Week		16,17	
Weighting or a	assessments			
	Semester work	15	%	
	Final-Term Examination	50	%	
	Oral Examination	10	%	
Practical Examination 2		25	%	
	Other types of assessment %			
	Total	100	%	

6. List of references

Course note

-Notes on pharmaceutical analytical chemistry for pre-pharmacy students, prepared and distributed by Dept. of Pharmaceutical Analytical Chemistry.

- Lab manual of pharmaceutical analytical chemistry for pre-pharmacy students, prepared and distributed by Dept. of Pharmaceutical Analytical Chemistry.

Essential books (text books)

1-Dash, Dhruba Charan "Analytical Chemistry", second edition (2011).

2-David S. Hage, James D. Carr "Analytical chemistry and Quantitative Analysis,"(2011).

3- Skoog, Douglas A. ;West, Donald M.; Holler, F. James; Crouch, Stanley R.(2014), "Fundamentals of analytical chemistry".belmot: books/Cole

4- R. A. Day, Jr and A. L. underwood, "quantitative analysis ",6th edition, prentice-hall international inc. (1991).

5- Gary D. Christian, "analytical chemistry", John Wiley& sons, INC (1994).

Recommended books

1-Vogel's "Quantitative Inorganic Analysis", 7 th edition, Longman Singapore (Pte) Ltd (1996).

2-D. A. Skoog, D. M. west, F. J. holler and S. R. crouch, "fundamentals of analytical chemistry", eighth edition brooks / cole-thomson learning, inc. (2004).

Websites

http://ull.chemistry.uakron.edu/analytical/

7. Facilities required for teaching and learning Class rooms.



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Course Specifications

E-learning Smart board Laboratory facilities (burrettes .flasks.reagents) Library Data show Internet Computers Course coordinator: Asst. Prof. Dr. Ahmed M. Abdel-Megied Head of Department:

Asst. Prof. Dr. Ahmed M. Abdel-Megied

Date of specification approval: 9/2020



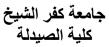
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Course Plan

Week	Торіс	Key Elements	Teaching & Learning Methods	Student Assessment Methods
1	Chemical kinetics, rate of reaction, rate law, first order reaction.	1.1.1,4.1.4	Lecture, brain storming and discussion	Written and oral exams
2	Second order and third order reactions, molecularity.	1.1.1,1.1.2,4.1.4,4.1.5,2 .2.2	Lecture, practical training, brain storming and discussion	Written, practical and oral exams
3	Activation energy and catalysis, photochemistry, absorbed energy and quantum yield.	1.1.3,4.1.4,4.1.5,2.2.2,2 .2.1,2.1.1, 4.1.1,4.1.2	Lecture and practical training	Written, practical and oral exams
4	 Introduction to qualitative and quantitative analysis. Concepts of acids &bases Ionization theory (pH, pOH, pK_w, etc.) 	1.1.3,4.1.4,4.1.5,2.2.2,2 .2.1,2.1.1,4.1.1, 4.1.2	Lectures and practical training	Written, practical and oral exams
5	 Calculation of pH of aqueous solutions of acids, bases or salts of different strength i.e. pK_a. Buffer systems 	1.1.3,4.1.4,4.1.5,2.2.2,2 .2.1,2.1.1, 4.1.1,4.1.2	Lectures and practical training	Written, practical and oral exams
6	 Titrimetry: standard solutions and methods of expressing concentration. Principle and types of titrimetric reactions 	1.1.3,4.1.4,4.1.5,2.2.2,2 .2.1,2.1.1,4.1.1, 4.1.2	Lectures and practical training	Written, practical and oral exams
7	Semester works			
8	 Acid-Base titration in aqueous medium Acid –Base indicators Acid-Base titration curves 	1.1.4,4.1.4,4.1.5,2.2.2,2 .2.1,2.1.1,4.1.1, 4.1.2	Lectures and practical training	Written, practical and oral exams
9	Application of acid –base titration in aqueous medium	1.1.4,4.1.4,4.1.5,2.2.2,2 .2.1,2.1.1,4.1.1, 4.1.2	Lectures and practical training	Written, practical and oral exams
10	 Acid-Base titration in Non- aqueous media Types of non-aqueous solvents Titration of weak acid & base Indicators to detect end points 	4.1.4,4.1.5,2.2.2,2.2.1,2 .1.1, 4.1.1,4.1.2.4.1.3	Lectures and practical training	Written, practical and oral exams
11	Application of Acid-Base	4.1.4,4.1.5,2.2.2,2.2.1,2	Lectures and	Written, practical





	Course Specifications				
	titration in non-aqueous media	.1.1, 4.1.1,4.1.2.4.1.3	practical training	and oral exams	
12	 Precipitation titrations: Factors affecting solubility Solubility product constant. 	2.2.2,2.2.1,2.1.1,4.1.1,4 .1.2. 4.1.3	Lectures and practical training	Written, practical and oral exams	
13	-Titration curves of precipitation titration - Argentometric methods.	2.2.2,2.2.1,2.1.1,4.1.1,4 .1.2	Lectures and practical training	Written, practical and oral exams	
14	-Mohr and Volhard methods	2.2.2	Lecture	Written, practical and oral exams	
15	-Fajan method	2.2.2,2.1.1	Lecture	Written, practical and oral exams	

Course coordinator: Asst. Prof. Dr. Ahmed M. Abdel-Megied

Head of department: Asst. Prof. Dr. Ahmed M. Abdel-Megied

Date of specification approval: 9/2020



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Programme on which the course is given	Bachelor of Pharmacy (PharmD- Clinical Pharmacy)
Major or minor element of programme	Major
Department offering the course	Pharmaceutical technology
Department supervising the course	Pharmaceutical technology
Academic Year / Level	First level/ first Semester
Date of specification approval	9/2020

A- Basic Information

Title: pharmacy orientation	Code: PT 101
Total credit Hours :1	Lecture: 1
	Practical :

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

- The importance of pharmacy and the role of pharmacist.
- Different routes of drug administrations and different dosage forms.
- Medical terminology and pharmaceutical terminology.
- Rational use of drugs.
- Ethics of pharmacy, Self-care and Self-medications.
- The history of pharmacy and a focus about Pharmacy in the Pharaonic age, role of Arabs in pharmacy.

2. Course learning outcomes

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate knowledge from basic pharmaceutical sciences to formulate and manufacture different dosage form, and deliver population and patient-centered care. This competency will be developed via the following key elements:

KEY ELEMENTS



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Course Specifications

1.1.1. Identify pharmacy, drug and classification of drugs.

1.1.2. Demonstrate understanding of the basic principles of pharmacy profession and prescription parts

1.1.3. *Demonstrate understanding* of patient services, drug services, and the prescription.

1.1.4 *Identify* different types of pharmaceutical dosage forms, the routes of drug administration and factors affecting them.

1.1.5. Demonstrate in depth knowledge in the history of pharmacy.

1.1.6. Utilize common the proper pharmaceutical and medical terms, abbreviations and symbols

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-1- COMPETENCY

Upon finishing this course, students will be able to work collaboratively as a member of an inter professional health care team to improve the quality of life of individuals and communities, and respect patients' rights. This competency will be developed via the following key elements: KEY ELEMENTS

2.1.1. Adopt pharmaceutical law and legislation.

2.1.2. Comply with various roles ðics of pharmacy

2-2- COMPETENCY

2-2- COMPETENCY

Upon finishing this course, students will be able to standardize pharmaceutical materials, formulate and manufacture pharmaceutical products, and participate in systems for dispensing, storage, and distribution of medicines.

This competency will be developed via the following key elements:

KEY ELEMENTS

2.2.1. Recognize the different pharmaceutical dosage including novel drug delivery systems.

2.2.2. Calculate and adjust proper dosages for different individuals with different Patients profiles.

2.2.3. Integrate pharmaceutical knowledge in formulation of safe and effective different dosage forms.

DOMAIN 3: PHARMACEUTICAL CARE

3-1- COMPETENCY



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Course Specifications

Upon finishing this course, students will be able to apply the principles of body functions to participate in improving health care services using evidence-based data.

This competency will be developed via the following key elements:

KEY ELEMENTS

3.1.1. Utilize pharmaceutical knowledge in the formulation of safe and effective medicines as well as in dealing with new drug delivery systems.3.1.2. Apply pharmaceutical knowledge about prescriptions and how to prepare them in proper way.

3-2- COMPETENCY

Upon finishing this course, students will be able to provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.

This competency will be developed via the following key elements:

KEY ELEMENTS

3.2.1.Correlate between information from other health professionals, medical records, pharmacy records and appropriate medical literature to use this information to provide safe and proper use of medicines.

3.2.2.Conduct patient counseling to teach the patients about their medications.

DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

Upon finishing this course, students will be able to express leadership, time management, critical thinking, problem solving, independent and team working skills.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 4.1.1. Demonstrate effective communication and leadership skills among students and staff.
- 4.1.2. Work effectively as part of a team to collect data and/or produce reports and presentations



Course Specifications

3. Contents

weeks	Торіс	Total credit hours	Lecture	Practical/Tutoria l
1,2	Scope of pharmacy, the functions of pharmacist and Drug information resources	2	2	
3,4	Routes of drug administration Dosage forms.	4	4	
5,6	Rational use of drugs, Pharmaceutical care, self-care and self- medications.	2	2	
7	Mid-term exam			
8,9	Ethics in pharmacy Standards of practice	2	2	
10,11	Prescriptions	2	2	
12,13	Different types of incompatibilities, and how can we solve them	2	2	

4. Teaching and learning methods

0	0	,
a. Lectu	res	(√)
b. Pract	ical training / laboratory	()
c. Semin	ar / Workshop	(√)
d. Class	activity	()
e. E-lear	ning	(√)

5. Student assessment methods

it method	
To assess	The ability of students to follow-up
	The course subjects.
To assess	The ability of students in
	expressing and presenting their
	knowledge clearly and in
	systematic approach.
To assess	The overall outcomes.
	To assess To assess



Assessment schedule

Assessment 1	Class participation (Mid-term	Week	7
	exam, Seminar / Workshop)		
Assessment 2	Final exam	Week	16,17
Assessment 3	Oral	Week	

Weighting or assessments

Class participation	15	%
Final-Term Examination	85	%
Oral Examination		%
Practical Examination		%
Total	100	%

6. List of references

Course notes

- Notes on Notes on pharmacy orientation prepared by the department staff. Essential books (text books)

- <u>Pharmacy: An Introduction to the Profession, L. Michael Posey, 3rd Edition,</u> 2016

Recommended books

Pharmaceutics, the design and manufacture of medicines, M.E.Aulton, 2017.
 Ansel's pharmaceutical dosage forms and drug delivery systems, L.V. Allen, N.G. Popovich, H.C. Ansel, 2017.

Websites

J.Pharm.Sci., Int.J.Pharm., J.Pharm.Pharmacol., Ind.Pharm., Pharmazie, Drug Devel. Ind.Pharm., E- book

7. Facilities required for teaching and learning

- -Class rooms.
- Data show
- Computers.
- -Library.
- -Internet.

Course coordinator:

Prof.Dr. abdelaziz elsayad

Head of Department:

Prof.Dr. abdelaziz elsayad

Date: 9/2020



Course Specifications

Course Plan

week	topics	Key Elements	Teaching &	Student
ween	vopies		Learning	Assessment
			Methods	Methods
1,2	Scope of pharmacy, the functions of pharmacist and Drug information resources	1.1.1,1.1.2,1.1.3, 1.1.4,1.1.5, 3.2.1, 3.2.2	Lectures	Written exams
3,4	Routes of drug administrations	1.1.3, 1.1.4, 1.1.6, 2.2.1, 2.2.2, 2.2.3	Lectures	Written exams
	Dosage forms.	1.1.3,1.1.4,1.1.5, 2.2.1, 2.2.2, 2.2.3, 3.1.1,3.1.2	Lectures	Written exams
5,6	Rational use of drugs, Pharmaceutical care, self-care and self- medications.	1.1.1,1.1.2,1.1.3,1.1. 4 , 3.2.1, 3.2.2,4.1.1	Lectures	Written exams
7	Mid-term exam			Written exams
8,9	Ethics in pharmacy	1.1.1,1.1.2,1.1.3,1.1. 5, 1.1.6,2.1.1,2.1.2, 3.2.1, 3.2.2,4.1.2	Lectures	Written exams
	Standards of practice	1.1.1,1.1.2,1.1.3, 1.1.4,1.1.5,2.1.2, 3.1.1,3.1.2,4.1.1	Lectures	Written exams
10,11	Prescriptions	1.1.1,1.1.2,1.1.3, 1.1.4, 1.1.6, 3.1.1,3.1.2,4.1.1	Lectures	Written exams
12,13	Different types of incompatibilities, and how can we solve them	1.1.1,1.1.2,1.1.3, 1.1.6, 2.2.1, 2.2.2, 2.2.3, 3.1.1,3.1.2,4.1.2	Lectures	Written exams
14	Revision			

Course coordinator:

Prof.Dr. abdelaziz elsayad Head of Department: Prof.Dr. abdelaziz elsayad Date: 9/2020



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (PharmD- Clinical Pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmacognosy
Department supervising the course	Pharmacognosy
Academic year / Level	Level (1), Semester (1)
Date of specification approval	9/2020

A- Basic Information

Title: Botany and Medicinal plants	Code: PG 101
Total anadit Harris 2	Lecture: 2
Total credit Hours :3	Practical :1

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

• The different plant tissues, cells and their contents.

• The general taxonomy of the different plant families

• The macro- and micro-morphological characters of the different plant parts.

• The leaves as drugs and their active constituents (pharmacopoeia leaves & other allied leaves).

• The differences between in entire and powdered drugs from different plant leaves.

2. Course learning outcomes

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate knowledge from botany and basic medicinal plant sciences to standardize natural products and deliver population-centered care.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 1.1.1. Demonstrate understanding of the different plant cells, contents and organs .
- 1.1.2. *Identify* the different natural drugs and their productions.
- 1.1.3. *Utilize* information of plant taxonomy in classification of the plant Kingdom.
- 1.1.4. *Retrieve information* about morphological and histological characters.
- 1.1.5. Articulate knowledge about adulteration of different medicinal leaves.

1.1.6. *Critically analyze* different active constituents and uses of medicinal leaves.



DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-1- COMPETENCY

Upon finishing this course, students will be able to standardize natural products and contribute in systems for dispensing, storage, and distribution of medicinal plants.

This competency will be developed via the following key elements:

KEY ELEMENTS

2.1.1.Predict plant families as source of drugs.

2.1.2. Recognize differences between different plant cells, drugs in entire and powdered forms

2.1.3. Carry out methods for identification of active constituents of leaves.

2.1.4. Design protocols to examine medicinal plants

2-2- COMPETENCY

Upon finishing this course, students will be able to Handle and dispose natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.

This competency will be developed via the following key elements:

KEY ELEMENTS

2.2.1. Fullfil GLP and safety guidelines in the lab.

2.2.2. Handle safely natural materials to avoid their harm to individuals.

2.2.3. Use effectively microscopes and laboratory reagents appropriately and safely.

DOMAIN 3: PHARMACEUTICAL CARE

3-1- COMPETENCY

Upon finishing this course, students will be able to apply the principles of body functions to participate in improving health care services using evidence-based data.

This competency will be developed via the following key elements:

KEY ELEMENTS

3.1.1. Relate etiology and features of certain diseases (e.g., cancer and acute hypersensitivities) to diet and lifestyle in addition to toxicity of some medicinal and ornamental leaves .

3-2- COMPETENCY

Upon finishing this course, students will be able to provide counseling and education services to community about safe and rational use of medicinal plants



This competency will be developed via the following key elements:

KEY ELEMENTS

3.2.1 Educate community about truthful and effective use of medicinal leaves as non-prescription drugs.

DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

Upon finishing this course, students will be able to express leadership, time management, critical thinking, problem solving, independent and team working skills.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 4.1.1. Demonstrate effective communication and leadership skills among students and staff.
- 4.1.2. Work effectively as part of a team to collect data and/or produce reports and presentations
- 4.1.3. Analyze data critically and able to solve scientific problems
- 4.1.4. Plan appropriate experiments in the laboratory bearing in mind technical availability and time limitations.

Week	Торіс	Total credit hours	Lecture	Practical /Tutorial
1	Introduction for the course and giving the students the possible references, web sites, text books.	3	2	1
2	Cell structure including types of cell walls and types of cells (parenchyma, collenchyma, stone cells, fibers, xylem, phloem and secretory tissues).	3	2	1
3	Study of cultivation, collection and preparation	3	2	1
4	Study of drying, packing and adulteration of plant drugs.	3	2	1
5	Study of constituents of plant drugs (alkaloids, glycosides, steroids, volatile oil, resins, tannins and proteins)	3	2	1
6	Study of constituents of plant drugs including carbohydrates, starches, and coloring matter.	3	2	1
7	Periodical exam	3	2	1
8	Introduction for taxonomy of plants	3	2	1
9	Taxonomical study for some important families	3	2	1
10	General introduction for medicinal leaf.			

3. Contents



Course Specifications

11	Morphological and histological studies for hyoscyamus and datura in entire and powdered forms, active constituents, uses and chemical test.	3	2	1
12	Morphological and histological studies for belladonna and digitalis in entire and powdered forms, active constituents, uses and chemical test.	3	2	1
13	Morphological and histological studies for squill, buchu, tea, eucalyptus leaves in entire and powdered forms, active constituents, uses and chemical test.	3	2	1
14	Rest of all leaves	3	2	Practical exam
15	Revision	2	2	Practical exam

4. Teaching and learning methods

······································	,
a. Lectures	(√)
b. Practical training / laboratory	(√)
c. Seminar / Workshop	(√)
d. Class Activity	
- Discussion	(√)
- Brain storming	(√)
e-E-learning	(√)
f-Smart board	(√)

5. Student assessment methods

Written periodical	То	The ability of students to follow-up
exam	assess	The course subjects.
Practical exam	То	The gained experience in laboratory
	assess	methods and techniques.
Written final exam	То	The overall outcomes`
	assess	
Oral exam	То	The ability of students in expressing and
	assess	presenting their knowledge clearly and in
		systematic approach

Assessment schedule

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14, 15
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	16, 17

Weighting or assessments

Written periodical Examination	15	%
Practical Examination	25	%
Final Term Examination	50	%
Oral Examination	10	%



Other types of assessment		%
Total	100	%

6. List of references

Course notes

Notes on botany and medicinal plants (PG101) and lab manuals: Prepared in the form of a book authorized by the department .

Essential books (text books)

- Minderovic, CM. (2014). Wintergreen. In: The Gale encyclopedia of science. 5th ed. Farmington Hills (MI): Gale; [accessed 2019 Jan 8]. Vol. 8, p. 4708-4709. Available from: Gale Academic OneFile; <u>http://go.galegroup.com</u>.
- February 2009Journal of Vegetation Science 1(3):291 304
- Seasonal weed structure of maize in the light of farming systems
- August 2014Applied Ecology and Environmental Research 12(3):765-77
- Natural products as sources of new drugs over the last 25 years. Newman D.J and Cragg, G.M., Journal of Natural Products 70, 461-477 (2007).
- Chinese Herbal Medicine: Dan Bensky, Steven Clavey, Erich Stoger and Andrew Gamble Materia Medica, Third Edition (2004).

Recommended books

"Encyclopedia of Common Natural Used in Food, Drugs and Cosmetics", Leung A.Y. and Faster.

Websites

www.biomedcentral.com www.medscape.com http://www.sciencedirect.com/ http://www.ncbi.nlm.nih.gov/

7. Facilities required for teaching and learning

-Class room			
-E-learning			
-Smart Board			
- Laboratory faci	lities (Microscopes, flames)	–Library	
-Data show	- Computers.	-Internet.	
•	· · · · · · · · · · · · · · · · · · ·	•	

Course coordinator:

Assist. Prof. Dr. Ahmed Awad

Head of Department:

Prof.Dr. Ramadan Eldomany

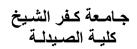
Date: 9/2020



Course Plan

Wk.	Торіс	Key Elements	Teaching & Learning Methods	Student Assessment Methods
1	Introduction for the course and giving the students the possible references, web sites, text books.	1.1.1, 2.2.1	Lectures, and brain storming	Written, and oral exams
2	Cell structure including types of cell walls and types of cells (parenchyma, collenchyma, stone cells, fibers, xylem, phloem and secretory tissues).	1.1.1, 2.1.2 2.2.1, 2.2.3	Lectures and practical training	Written, practical and oral exams
3	Study of cultivation, collection and preparation	1.1.2	Lectures and practical training	Written, practical and oral exams
4	Study of drying, packing and adulteration of plant drugs.	1.1.2, 1.1.5	Lectures , practical and brain storming	Written, practical and oral exams
5	Study of constituents of plant drugs (alkaloids, glycosides, steroids, volatile oil, resins, tannins and proteins	1.1.6, 2.1.3 , 4.1.1, 4.1.2	Lectures and seminar.	Written, practical and oral exams
6	Study of constituents of plant drugs including carbohydrates, starches, and coloring matter.	1.1.6, 2.1.3, 4.1.1, 4.1.2	Lectures , and brain storming	Written, practical and oral exams
7	7 Periodical exam			
8	Introduction for taxonomy of plants	1.1.3, 2.1.1	Lectures and seminar.	Written, practical and oral exams
9	Taxonomical study for some important families	1.1.3, 2.1.1	Lectures, discussion and brain storming	Written, practical and oral exams
10	General introduction for medicinal leaf.	1.1.1, 2.2.1, 3.2.1	Lectures , practical and brain storming	Written, practical and oral exams
11	Morphological and histological studies for hyoscyamus and datura in entire and powdered forms, active constituents, uses and chemical test.	1.1.4, 1.1.5, 2.1.4, 2.2.2, 2.2.3, 3.1.1, 3.2.1	Lectures , practical and brain storming	Written, practical and oral exams





Course Specifications

12	Morphological and histological studies for belladonna and digitalis in entire and powdered forms, active constituents, uses and chemical test.	1.1.4, 1.1.5, 2.1.4, 2.2.2, 2.2.3, 3.1.1, 3.2.1	Lectures, discussion and brain storming	Written, practical and oral exams
13	Morphological and histological studies for squill, buchu, tea, eucalyptus leaves in entire and powdered forms, active constituents, uses and chemical test.	1.1.4, 1.1.5, 2.1.4, 2.2.2, 2.2.3, 3.1.1, 3.2.1	Lectures, discussion and brain storming	Written, practical and oral exams
14	Rest of all leaves	1.1.4, 1.1.5, 4.1.1, 4.1.2, 4.13, 4.1.4	Lectures	Written, and oral exams
15	Revision	4.1.1, 4.1.2, 4.13, 4.1.4	Lectures, discussion and brain storming	Written, and oral exams

Course coordinator:

Assist. Prof. Dr. Ahmed Awad

Head of Department: Prof.Dr. Ramadan Eldomany

Date: 9/2020

Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (pharmD) (Clinical Pharmacy)	
Major or minor element of program	Minor	
Department offering the course	Human right- faculty of Law- Kafrelsheikh University	
Department supervising the course	Vice dean of students affairs	
Academic Year / Level	First level/ Semester 1	
Date of specification approval	9/2020	

A- Basic Information

Title: Human Rights and Fighting	Code: UR 101
Corruption	
Total credit Hours :1	Lecture: 1
	Practical :

البيانات المهنية: <u>1</u>) الأهداف العامة للمقرر:

 عند إتمام المقرر سـوف يكون الطلاب قادرين على معرفة أهمية حقوق الإنسـان وواجباته نحو المجتمع وكيفية حماية تلك الحقوق.
 <u>2) النتائج التعليمية المستهدفة لمقرر حقوق الإنسان:</u>

1 - المعرفة الأساسية

1-1- Competency

Integrate knowledge from basic and applied pharmaceutical and clinical sciences to standardize materials, formulate and manufacture products, and deliver population and patient-centered care.

يلم بالمقصود بحقوق الإنسان ومصدر ها.	1-1-1
يعدد أنواع حقوق الإنسان الفردية والجماعية.	2-1-1

2- الممارسات الأخلاقية والمهنية

2-1- Competency Work collaboratively as a member of an inter-professional health care team to improve the quality of life of individuals and communities, and respect patients' rights

يدرك تطبيقات حقوق الإنسان والسلوكيات الاخلاقية في مجال الصيدلة .	1-1-2
يلم بواجباته نحو الأخرين متقبلا التعددية والاختلاف .	
ينمي شخصية الفرد من خلال معرفة الحقوق الفردية و الجماعية للإنسان.	3-1-2

2-5- Competency

Contribute in pharmaceutical research studies and clinical trials needed to authorize medicinal products.

4-1- Competency

Graduates will be able to express leadership, time management, critical thinking, problem solving, independent and team working, creativity and entrepreneurial skills.

ينمي قدرات الطالب على تقييم سلوك الأخرين في مجال حقوق الإنسان.	1-1-4
ينمي مهارات التفكير النقدي و اتخاذ القرارات و حل المشكلات.	2-1-4

4-2- Competency

Graduates will be able to effectively communicate verbally, non-verbally and in writing with individuals and communities.

2-4

4-3- Competency

Graduates will be able to express self-awareness and be a life-long learner for continuous professional improvement.

يتعرف على المصاد الموثوقة و القوانين والإجراءات الحديثة فور صدورها 1-3-4 من أجل تحديد الحقوق والواجبات

د- المحتويات:

المحاضرة	الأسبوع
(2ساعة/ الأسبوع)	
- مقدمة	1
- التعريف بحقوق الإنسان	2
- قانون حقوق الإنسان (1)	3
 - قانون حقوق الإنسان (2) تكملة 	4
 - قانون حقوق الإنسان (3) تكملة 	5
- مصادر قانون حقوق الإنسان (1)	6
- مصادر قانون حقوق الإنسان (2) تكملة	7
الامتحان الدوري	
- أنواع حقوق الإنسان (فردية)	8
- أنواع حقوق الإنسان (جماعية)	9
- حماية حقوق الإنسان (1)	10
- حماية حقوق الإنسان (2) تكملة	11
- تطبيقات حقوق الإنسان في المجال الطبي (1)	12
- تطبيقات حقوق الإنسان في المجال الطبي (2)	13
- تطبيقات حقوق الإنسان في المجال الطبي (3)	14
- مراجعة عامة و مناقشة حره	15

هـ أساليب التعليم و التعلم:

- المحاضرة
 - المناقشة
- التعليم عن بعد

و-أساليب تقييم الطلبة:

1- الامتحان الدوري

2- الامتحان التحريري:
 الجدول الزمنى التقييم:

الأسبوع السابع	تقييم (1): الامتحان الدوري
الأسبوع السادس عشر	تقييم (2): الامتحان التحريري

ترجيح التقييم:

النسب المئوية	الدرجات	طريقة التقييم
%20	15	الامتحان الدوري
%80	85	الامتحان التحريري
%100	100	الإجمالي

ز- التسهيلات اللازمة للتعليم و التعلم:

1- للمحاضرات: اللوحات (البيضاء) و جهاز العرض المرئي (داتا شو) والتعليم عن بعد (السبورة الذكية).

٥- قائمة المراجع:

مذاكرات المقرر: كتاب الطالب (حقوق الإنسان) (2020)
 حقوق الإنسان
 حقوق الإنسان
 حقت مقترحة
 القانون الدولي الإنساني
 مجلات دورية، مواقع انترنت، الخ
 مجلات حقوق الإنسان

منسق المقرر: أ.د. ماهر ابوخوات

التاريخ: / 9 /2020

	مصفوفة 1 مقرر حقوق الإنسان											
	l	الإنسان	دة حقوق	ة لما	نشود	ظم الم	ج التع	نتائ			محتويات المقرر	
	Do	main 4			Dom	nain 2	2	D	omai	n 1	محتويات المعرر	
4	3	2	1	4	3	2	1	3	2	1		
										X	مقدمة	1
										X	التعريف بحقوق الإنسان	2
										X	قانون حقوق الإنسان (1)	3
										X	قانون حقوق الإنسان (2) تكملة	4
	x				Χ					X	قانون حقوق الإنسان (3) تكملة	5
			Х							x	مصادر قانون حقوق الإنسان (1)	6
			Х							x	مصادر قانون حقوق الإنسان (2) تكملة	7
					Χ				х		أنواع حقوق الإنسان (فردية)	8
	X				Χ				х		أنواع حقوق الإنسان (جماعية)	9
						Χ		Х			حماية حقوق الإنسان (1)	10
					X	Χ		X			حماية حقوق الإنسان (2) تكملة	11
Х		X	х	x			x	X	x		تطبيقات حقوق الإنسان في المجال الطبي (1)	12
Х		X		х			x	X	x		تطبيقات حقوق الإنسان في المجال الطبي (2) تكملة	13
Х		х		x	x		x	Х	x		تطبيقات حقوق الإنسان في المجال الطبي (3) تكملة	14
Х	x	х	х	Х			x	Χ	x		مراجعة عامة و مناقشة حره	15

منسق المقرر: د. ماهر ابوخوات

التاريخ: / 2020/9



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (PharmD-Clinical
	Pharmacy)
Major or minor element of program	Major
Department offering the course	Department of Information Technology.
	(Faculty of Computing and Information)
	Department of Pharmaceutical chemistry
	(Faculty of Pharmacy)
Department supervising the course	Vice Dean for Education and Student Affairs
Academic year / Level	Level (1), Semester (1)
Date of specification approval	9/2020

A- Basic Information

Title: Information Technology	Code: NP 101
Total credit Hours :2	Lecture: 1
Total credit Hours :2	Practical :1

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

- The concept and importance of information technology and its applications.
- The recent developments of Information Technology.
- The hardware and software suitable for Information Technology.
- The importance of artificial intelligence in the field of Pharmacy.
- Applications of computer and internet in the laboratories.
- The policy and ethics of Information Technology.

2. Course learning outcomes

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate basic knowledge from information technology to deliver population-centered care.

This competency will be developed via the following key elements:

KEY ELEMENTS



- 1.1.1. *Demonstrate understanding* of the basic concepts of information technology.
- 1.1.2. *Identify* recent applications of information technology in drug market and pharmacy.
- 1.1.3. Retrieve information from a variety of sources such as online medical databases and websites.
- 1.1.4. *Integrate knowledge about* theoretical application of computing in medical field and pharmacy, and importance in reasoning, communication and system development.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-1- COMPETENCY

Upon finishing this course, students will be able to virtually prepare for handling laboratory material, methods and tools and using computer hardware and software effectively and safely with respect to relevant laws and legislations.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 2.1.1 Fullfil GLP and safety guidelines in dry labs before execution in physical labs.
- 2.1.2 Adopt ethics in using computer software and hardware.
- 2.1.3 Handle internet and software safely to avoid their harm to users.

Domain 3: Pharmaceutical Care

3-1- COMPETENCY

Upon finishing this course, students will be able to provide counseling and education services to patients and communities about safe and rational use of medicines and medical devices.

This competency will be developed via the following key elements:

KEY ELEMENTS

- *3.1.1 Integrate* information technology and medical databases to provide healthcare related services, and up-to-date medicinal guidance.
- *3.1.2 Provide* patient counseling about safe and rational use of medicines and medical devices through implementation of virtual clinics and pharmacies.

DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

Upon finishing this course, students will be able to express leadership, time management, critical thinking, problem solving, independent and team working skills.

This competency will be developed via the following key elements:

KEY ELEMENTS



- 4.1.1.Demonstrate effective communication and leadership skills among students and staff.
- 4.1.2. Work effectively as part of a team to collect data and/or produce reports and presentations to show the recent computers technology.
- 4.1.3. Analyze data critically and ability to solve scientific problems
- 4.1.4.Plan appropriate experiments in the laboratory bearing in mind technical availability and time limitations.

4-2- COMPETENCY

Upon finishing this course, students will be able to effectively communicate verbally, non-verbally and in writing with individuals and communities.

This competency will be developed via the following key elements:

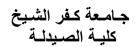
KEY ELEMENTS

- 4.2.1 *Practice* oral and written communication sills in English.
- 4.2.2 *Practice* Independent learning.
- 4.2.3 *Demonstrate creativity for* Ideas formulation and presentation.

3. Contents

Week	Торіс	Total credit hours	Lecture	Practical /Tutorial
1	Introduction to information technology and use of Information systems in society.	2	1	1
2	Information technology concepts, policy and ethics.	2	1	1
3	Information system, Operating systems and Utility Systems.	2	1	1
4	Components of computer system (hardware & software)	2	1	1
5	Microsoft office (Introduction to Word processing and power point data presentation).			
6	Microsoft office (Introduction to Access data- bases and Excel programs).			1
7	Periodical exam	2	1	1
8	Computer networks, internet protocol, and internet services.	2	1	1
9	Data communication, transmission modes and transmission media.	2	1	1
10	Online drug databases.	2	1	
11	Artificial intelligence in the field of Pharmacy.	2	1	1
12	Overview of Computer Aided Drug design (CADD) programs.	2	1	1
13	Overview of Computer-based dry labs (Virtual labs).		1	
14	Idos).Overview of Computer-based virtual clinics and virtual pharmacy.21			





Course Specifications

15 Revision	2	1	Practical exam
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4. Teaching and learning methods

a. Lectures	(√)
b. Practical training / laboratory	$(\sqrt{)}$
c. Seminar / Workshop	(√)
d. Class Activity	
- Discussion	(√)
- Brain storming	$(\sqrt{)}$

5. Student assessment methods

P		
Written periodical	То	The ability of students to follow-up
exam	assess	The course subjects.
Practical exam	То	The gained experience in laboratory
	assess	methods and techniques.
Written final exam	То	The overall outcomes`
	assess	
Oral exam	То	The ability of students in expressing and
	assess	presenting their knowledge clearly and in
		systematic approach

Assessment schedule

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14, 15
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	16, 17

Weighting or assessments

Written periodical Examination	15	%
Practical Examination	25	%
Final Term Examination	50	%
Oral Examination	10	%
Other types of assessment		%
Total	100	%

6. List of references

Course notes

Notes on information technology (NP 101) and lab manuals: Prepared in the form of a book authorized by the department and vice dean.

Essential books (text books)

- Robon Williams & John Tollett. THE NON-DESIGNER'S WEB BOOK. 2nd edition, Peachit Press, 2007. (ISBN : 2017-1038-2)
- Ruth Maran . COMPUTERS SIMPLIFIED . 5nd edition . John Wiley & sons , 2005, (ISBN : 0-7645-3524-2).
- Management of Information Technology, by Carroll W. Frenzel, Course Technology 3rd edition (July 10, 1998) ISBN #: 0760049904



Recommended books

- Introduction to Information Systems: Supporting and Transforming Business, 2nd Edition by R. Kelly Rainer, Jr., Auburn Univ. ISBN: 978-0-470- 16900-1 ©2008.
- Introduction to Information Systems by James A. O'Brien ,George Maracas' James Obrien.
- ISBN: 0073043559

Websites

https://www.medscape.com/ https://praxilabs.com/en/ https://www.sib.swiss/

7. Facilities required for teaching and learning

-Class room.

- Laboratory facilities -Data show - Computers. -Library -Internet.

Course coordinator:

Prof.Dr. Reda Mohamed

Head of Department:

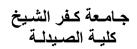
Prof.Dr. Abdel Aziz Elsayed

Date: 9/2020

Course Plan

Wk.	Торіс	Key Elements	Teaching & Learning Methods	Student Assessment Methods
1	Introduction to information technology and use of Information systems in society.	1.1.1,	Lectures, and brain storming	Written, and oral exams
2	Information technology concepts, policy and ethics.	1.1.1, 1.1.2, 2.1.2, 2.1.3, 3.1.1	Lectures and seminar.	Written, and oral exams
3	Information system, Operating systems and Utility Systems.	1.1.1,	Lectures and practical training	Written, practical and oral exams
4	Components of computer system (hardware & software)	1.1.1, 1.1.4,	Lectures , practical and brain storming	Written, practical and oral exams





Course Specifications

5	Microsoft office (Introduction to Word processing and power point data presentation).	1.1.1, 1.1.4, 4.1.1,	Lectures , practical and brain storming	Written, practical and oral exams
6	Microsoft office (Introduction to Access data-bases and Excel programs).	1.1.1, 1.1.4,	Lectures , practical and brain storming	Written, practical and oral exams
7	Periodical exam	L		
8	Computer networks, internet protocol, and internet services.	1.1.3, 4.1.24.2.1, 4.2.2, 4.2.3	Lectures and seminar.	Written, practical and oral exams
9	Data communication, transmission modes and transmission media.	1.1.3, 4.1.34.2.1, 4.2.2, 4.2.3	Lectures, Seminar, discussion and brain storming	Written, practical and oral exams
10	Online drug databases.	1.1.2, 1.1.3, 1.1.4, 3.1.1,	Lectures , practical and brain storming	Written, practical and oral exams
11	Artificial intelligence in the field of Pharmacy.	1.1.2, 1.1.3, 1.1.4, 2.1.1, 2.1.2, 2.1.3, 3.1.1	Lectures , practical and brain storming	Written, practical and oral exams
12	Overview of Computer Aided Drug design (CADD) programs.	1.1.2, 1.1.3, 1.1.4, 2.1.1, 2.1.2, 2.1.3, 4.1.2,	Lectures , practical and brain storming	Written, practical and oral exams
13	Overview of Computer-based dry labs (Virtual labs).	1.1.2, 1.1.3, 1.1.4, 2.1.1, 2.1.2, 2.1.3, 3.1.1, 3.1.2, 4.1.2	Lectures , practical and brain storming	Written, practical and oral exams
14	Overview of Computer-based virtual clinics and virtual pharmacy.	1.1.2, 1.1.3, 1.1.4, 2.1.1, 2.1.2, 2.1.3, 3.1.1, 3.1.2, 4.1.2	Lectures , practical and brain storming	Written, practical and oral exams
15	Revision	1.1.1, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.2.1, 4.2.2, 4.2.3	Lectures, discussion and brain storming	Written, and oral exams

Course coordinator:

Prof.Dr. Reda Mohamed

Head of Department:

Prof.Dr. Abdel Aziz Elsayed

Date: 9/2020



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of pharmacy (Pharm D, Clinical
	pharmacy)
Major or minor element of program	Minor
Department offering the course	Faculty of Commerce
Department supervising the course	Pharmaceutical chemistry
Academic year / Level	Level (1), Semester (1)
Date of specification approval	9/2020

A- Basic Information

Title: Math	Code: MS 101	
Total anadit Hauna 2	Lecture: 2	
Total credit Hours :2	Practical:	

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

 Build up comprehensive knowledge on the basic mathematical procedures which are required in pharmaceutical studies.

2. Course learning outcomes

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate knowledge from basic mathematics to implement it in relevant pharmaceutical disciplines.

This competency will be developed via the following key elements:

KEY ELEMENTS

1.1.1. *Demonstrate understanding* of the nature of data and fundamentals of mathematics. 1.1.2. *Articulate knowledge* about the value of functions and hypothesis testing.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-1- COMPETENCY

Upon finishing this course, student will be able to categorize and manipulate data sets needed in standardization, formulation and manufacturing of pharmaceutical products.

This competency will be developed via the following key elements:



KEY ELEMENTS

- 2.1.1.Recognize the structure of the data in a variety of standard situations and define the problem to be solved in mathematical terms.
- 2.1.2. Apply different methods of calculations needed in pharmaceutical fields and be able to solve scientific problems

DOMAIN 3: PHARMACEUTICAL CARE

DOMAIN 4: PERSONAL PRACTICE

3. Contents

Week	Торіс	Total credit hours	Lecture	Practical /Tutorial	
1	Introduction to Mathematics	2	2		
2	Algebra-1 (The Binomial Theory)	2	2		
3	Algebra-1 (Fitting of Curves)	2	2		
4	Algebra-2 (Partial Fractions, Solution of Linear Equations)	2	2		
5	Algebra-2 (Using Determinants or Matrices)	2	2		
6	Functions and applications (1)	2	2		
7	Periodical exam				
8	Functions and applications (2)	2	2		
9	Differential Calculus	2	2		
10	FundamentalsTheoriesonDifferentiation(Related Rates – Drawing of Curves)	2			
11	Integration-1	2	2		
12	Integration-2	2	2		
13	Data presentation,	2	2		
14	Gaussian distribution and Probability	2	2		
15	Revision & Exercises	2	2		



4. Teaching and learning methods (√) a. Lectures (√) b. Practical training / laboratory () c. Seminar / Workshop () d. Class Activity () - Discussion (√) - Brain storming (√) e. E-learning (√)

5. Student assessment methods

Written periodical	То	The ability of students to follow-up		
exam	assess	The course subjects.		
Written final exam	То	The overall outcomes`		
	assess			

Assessment schedule

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	

Weighting or assessments

Written periodical Examination	15	9
Practical Examination		9
Final Term Examination	85	9
Oral Examination		9
Other types of assessment		9
Total	100	Ģ

6. List of references

Course notes

Notes of mathematics for prepharmacy students, prepared and distributed by dep. of accounting and information systems, faculty of commerce.

Essential books (text books)

- Abstract Algebra, 3rd Edition 3rd Edition, 2003
- The Calculus Lifesaver: All the Tools You Need to Excel at Calculus (Princeton Lifesaver Study Guides) 1st Edition, 2007

Recommended books

• Calculus Made Easy: Being a Very-Simplest Introduction to those Beautiful Methods of Rekoning which are Generally Called by the Terrifying Names of the Differential Calculus and the Integral Calculus Enlarged Edition, 2014

Websites

http://www.math.com/

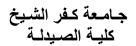
https://www.basic-mathematics.com/math-websites.html



7. Facilities requi	red for teaching and learnin	g		
-Library				
-Data show	- Computers.	-Internet.		
Course coordinator: Dr. Osama Abu-seada				
Head of Department:				
Dr. Osama Abu	-seada			

Date: 9/2020





Course Plan

Wk.	Торіс	Key Elements	Teaching & Learning Methods	Student Assessment Methods
1	Introduction to Mathematics	1.1.1, 1.1.2	Lectures, and brain storming	Written exams
2	Algebra-1 (The Binomial Theory)	1.1.1, 1.1.2, 2.1.1, 2.1.2	Lectures, discussion and brain storming	Written exams
3	Algebra-1 (Fitting of Curves), Applications.	1.1.1, 1.1.2, 2.1.1, 2.1.2	Lectures, discussion and brain storming	Written exams
4	Algebra-2 (Partial Fractions, Solution of Linear Equations)	1.1.1, 1.1.2,	Lectures, discussion and brain storming	Written exams
5	Algebra-2 (Using Determinants or Matrices) Applications	1.1.1, 1.1.2, 2.1.1, 2.1.2	Lectures, discussion and brain storming	Written exams
6	Functions and applications (1)	1.1.1, 1.1.2,	Lectures, discussion and brain storming	Written exams
7	Periodical exam			_
8	Functions and applications (2) Exercises	1.1.1, 1.1.2, 2.1.1, 2.1.2	Lectures, discussion and brain storming	Written exams
9	Differential Calculus	1.1.1, 1.1.2, 2.1.1, 2.1.2	Lectures, discussion and brain storming	Written exams
10	Fundamentals Theories on Differentiation (Related Rates – Drawing of Curves)	1.1.1, 1.1.2, 2.1.1, 2.1.2	Lectures, discussion and brain storming	Written exams
11	Integration-1	1.1.1, 1.1.2,	Lectures, discussion and brain storming	Written exams
12	Integration-2 Applications	1.1.1, 1.1.2, 2.1.1, 2.1.2	Lectures, discussion and brain storming	Written exams
13	Data presentation,	1.1.1, 1.1.2,	Lectures, discussion and brain storming	Written exams
14	Gaussian distribution and Probability	1.1.1, 1.1.2,	Lectures, discussion and brain storming	Written exams
15	Revision & Exercises	1.1.1, 1.1.2, 2.1.1, 2.1.2	Lectures, discussion and brain storming	Written exams

Course coordinator:

Dr. Osama Abu-seada

Head of Department:

Dr. Osama Abu-seada

Date: 9/2020



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (pharmD) (Clinical Pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmacology & Toxicology
Department supervising the course	Pharmacology & Toxicology
Academic Year / Level	Level (1), Semester (1)
Date of specification approval	9/2020

A- Basic Information

Title: Medical Terminology	Code : MD101
Credit Hours : 2	Lecture: 2

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students should be able to:

– Illustrate the basics of medical terminology required in pharmaceutical studies.

2. Course learning outcomes

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to **knowledge** medical terminology

This competency will be developed via the following key elements: KEY ELEMENTS

1.1.1. Demonstrate understanding basic component of medical terms (suffix – root- and prefix)

1.1.2. Articulate knowledge about medical terms of different body systems (digestive, respiratory,)

1.1.3. Identify common vocabulary used by medical staff members 1.1.4: Retrieve patient's file documents.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE 2-1- COMPETENCY

This competency will be developed via the following key elements: KEY ELEMENTS

2.1.1: Recognize the write medical order from medical term and medical abbreviation reported in prescription



2. Interpret patient information reported in medical files (diagnosis, lab investigation, medical history.....etc).

DOMAIN 3: PHARMACEUTICAL CARE

3-1- COMPETENCY

This competency will be developed via the following key elements: KEY ELEMENTS

3.1.1. Educate the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.

3.1.2. Apply medical term analysis and interpret it.

DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

This competency will be developed via the following key elements: KEY ELEMENTS

4.1.1. Perform writing reports and documentation skills.

4.1.2. Work effectively as a part of a health care team.

Week	Торіс	Total contact hours	Lecture
1	Introduction	2	2
2	Level of organization	2	2
3	Digestive system	2	2
4	Cardiovascular system	2	2
5	Blood	2	2
6	Nervous system	2	2
7	Semester work		
8	Endocrine terminology	2	2
9	Eye and ear Terminology	2	2
10	Skin Terminology	2	2
11	Urinary system	2	2
12	Respiratory system	2	2
13	Medical records	2	2

3. Contents



HEIK	H 14WERST	Prescription abbreviation	2	2
	15	Revision	2	2

4. Teaching and learning methods

0 0	
a. Lectures	(√)
b. Practical training / laboratory	()
c. Seminar / Workshop	()
d. Class Activity	(√_)
e. E-Learning	(1)

5. Student assessment methods

Semester work	To assess	The ability of students to follow-up The course subjects.
Written final exam	To assess	The overall outcomes.

Assessment schedule

Assessment 1	Semester work	Week	7
Assessment 2	Final exam	Week	16,17

Weighting or assessments

Final-Term Examination	85	%
Semester Work	15	%
Total	100	%

6. List of references

Course notes

Notes on Medical Terminology (Department of Pharm./Tox., college of Pharmacy,), Approved by department counsil

Essential books (text books)

Medical Terminology: a living language 4th edition Fremgen BS and Frucht SS, 2009

Marjorie C. Willis (1996): Medical Terminology, the basic language of health care, first edition. Williams & Wilkins Press, Baltimore

Recommended books

Andrew R. Hutton (2002): An introduction to medical terminology for health care, A self-teaching package, third edition. Churchill-Livingstone-Elsevier Press, Edinburgh

Websites

- www.sciencedirect.com

7. Facilities required for teaching and learning

-Class rooms - Data Show - Computers - Library -Internet

Course coordinator:

Dr. Mohamed Abd Elhaseeb

пе	au	лр	repar	unen
Dr.	Sher	in Z	akaria	

Date : 9/2020



Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment

Course Contents		ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction	1.1.1,2.1.1	Lectures and brain storming	Written exams
Week # 2	Level of organization	1.1.2, 4.1.2	Lectures and brain storming	Written exams
Week # 3	Digestive system	1.1.2,1.1.3,2.1.1, 2.1.2, 3.1.1, 3.1.2, 4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 4	Cardiovascular system	1.1.2,1.1.3,2.1.1, 2.1.2, 3.1.1, 3.1.2, 4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 5	Blood	1.1.2,1.1.3,2.1.1, 2.1.2, 3.1.1,3.1.2, 4.1.1,4.1.2	Lectures and brain storming	Written exams
Week # 6	Nervous system	1.1.2,1.1.3,2.1.1, 2.1.2,3.1.1,3.1.2, 4.1.1,4.1.2	Lectures and brain storming	Written exams
Week # 7	Semester work			
Week # 8	Endocrine terminology	1.1.2,1.1.3,2.1.1, 2.1.2, 3.1.1, 3.1.2, 4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 9	Eye and ear Terminology	1.1.2,1.1.3,2.1.1, 2.1.2, 3.1.1, 3.1.2, 4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 10	Skin Terminology	1.1.2,1.1.3,2.1.1, 2.1.2, 3.1.1, 3.1.2, 4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 11	Urinary system	1.1.2,1.1.3,2.1.1, 2.1.2, 3.1.1, 3.1.2, 4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 12	Respiratory system	1.1.2,1.1.3,2.1.1, 2.1.2, 3.1.1, 3.1.2, 4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 13	Medical records	1.1.4,2.1.1,2.1.2, 3.1.1,3.1.2,4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 14	Prescription abbreviation	1.1.4,2.1.1,2.1.2, 3.1.1,3.1.2,4.1.1, 4.1.2	Lectures and brain storming	Written exams
Week # 15	Revision		Lectures and brain storming	Written and oral exams

Course coordinator: Dr. Mohamed Abd Elhaseeb Head of department: Prof.Dr. sherin zakaria Bachelor of Pharmacy (PharmD-Clinical Pharmacy) Course Specification Level 2 / Third Semester

Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (PharmD) (Clinical Pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmacology & Toxicology
Department supervising the course	Pharmacology & Toxicology
Academic Year / Level	Second level, third Semester
Date of specification approval	9/2020

A- Basic Information

Title: Basic pharmacology	Code :PO301	
Credit Hours : 2	Lecture :2	
	Practical :0	

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students should be able to:

- Identify pharmacokinetics of drugs within the body.
- Illustrate method of signal transduction as well as drug receptors and drug receptor interaction.
- Demonstrate the ion channels, enzymes and carrier protein.

2. Course learning outcomes DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

This competency will be developed via the following key elements: KEY ELEMENTS

1.1.1. Retrieve information about pharmacokinetics of drugs

1.1.2. Demonstrate understanding of different type of receptors and relate each type with the specific signal transduction processes.

1.1.3. Demonstrate understanding of different type of ion channels and their important physiological responses.

1.1.4. Articulate knowledge about enzymes and their mechanisms of action.

1.1.5. Identify different type of carrier protein and their function

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE 2-1- COMPETENCY

This competency will be developed via the following key elements: KEY ELEMENTS

2.1.1: Recognize the cell signaling and signaling transduction with physiological response

- 2.1.2: Demonstrate how drug could affect the physiological response of body
- 2.1.3: Apply the effects ion channels, enzymes and carrier protein on different physiological function.

DOMAIN 3: PHARMACEUTICAL CARE

3-1- COMPETENCY

This competency will be developed via the following key elements: KEY ELEMENTS

3.1.1: Integrate the journey of signal initiation transduction and physiological response

3.1.2: Relate the body functions to different types of proteins.

DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

This competency will be developed via the following key elements: KEY ELEMENTS

- 4.1.1. Demonstrate critical thinking
- 4.1.2. Analyze data critically and able to solve scientific problems
- 4.1.3. Apply independent learning

3. Contents

Week	Торіс	Total contact hours	Lecture
1	Pharmacokinetics	2	2
2	Pharmacokinetics	2	2
3	Pharmacokinetics	2	2
4	Drug receptors	2	2
5	Drug receptor interaction	2	2
6	Signal transduction	2	2
7	Semester work	2	2
8	Signal transduction	2	2
9	Ion channels	2	2
10	Ion channels	2	2
11	Enzymes	2	2
12	Enzymes	2	2
13	Carrier proteins	2	2
14	Revision and open discussion	2	2
15	Revision and open discussion	2	2

4. Teaching and learning methods

a. Lectures (virtual) $(\sqrt{})$ b. Practical training / laboratory()c. Seminar / Workshop()d. Class Activity (online) $(\sqrt{})$

5. Student assessment methods

Semester work	To assess	The ability of students to follow-up	
		the course subjects.	
Oral exam	To assess	The ability of students in expressing	
		and presenting their knowledge	
		clearly and in systematic approach.	
Written final exam	To assess	The overall outcomes.	

Assessment schedule

Assessment 1	Semester work	Week	7
Assessment 2	Final exam	Week	16,17
Assessment 3	Oral	Week	16,17

Weighting or assessments

Final-Term Examination	75	%
Oral Examination	15	%
Semester Work	10	%
Total	100	%

6. List of references

Essential books (text books)

Harvey Lodish, Arnold Berk, S Lawrence Zipursky, Paul Matsudaira, David Baltimore, and James Darnell. Molecular Cell Biology, 4th edition. New York: <u>W. H.</u> <u>Freeman</u>; 2000.

Recommended books

Goodman and Gilman

Websites

-www.biomedcentral.com

-www.Pubmed.com

-www.medscape.com

7. Facilities required for teaching and learning

- -Class rooms
- Data Show
- Computers.
- Library
- -Internet

Course coordinator:

Dr. Sherin zakaria

Head of Department:

Dr. Sherin zakaria

Date: 9/2020

Cour	se Contents	Key Elements	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Pharmacokinetics	1.1.1, 2.1.2, 3.1.2, 4.1.2	Lectures	Written and oral exams
Week # 2	Pharmacokinetics	1.1.1,2.1.2,3.1.1, 4.1.2	Lectures	Written and oral exams
Week # 3	Pharmacokinetics	1.1.1, 2.1.2, 3.1.1, 4.1.2	Lectures	Written and oral exams
Week # 4	Drug receptors	1.1.2, 2.1.2, 3.1.2, 4.1.2,4.1.3	Lectures and discussion	Written and oral exams
Week # 5	Drug receptor interaction	1.1.2, 2.1.2, 3.1.2, 4.1.2,4.1.3	Lectures	Written and oral exams
Week # 6	Signal transduction	1.1.2, 2.1.1, 3.1.1, 4.1.2	Lectures and brain storming	Written and oral exams
Week # 7	Semester work			
Week # 8	Signal transduction	1.1.2, 2.1.1, 3.1.1, 4.1.1, 4.1.2, 4.1.3	Lectures	Written and oral exams
Week # 9	Ion channels	1.1.3, 2.1.3, 3.1.2, 4.1.1,4.1.2	Lectures	Written and oral exams
Week # 10	Ion channels	1.1.3, 2.1.3, 3.1.2, 4.1.1,4.1.2	Lectures	Written and oral exams
Week # 11	Enzymes	1.1.4, 2.1.3, 3.1.2, 4.1.1, 4.1.2, 4.1.3	Lectures	Written and oral exams
Week # 12	Enzymes	1.1.4, 2.1.3, 3.1.2, 4.1.1, 4.1.2, 4.1.3	Lectures	Written and oral exams
Week # 13	Carrier proteins	1.1.5, 2.1.3, 3.1.2, 4.1.1, 4.1.2, 4.1.3	Lectures	Written and oral exams
Week # 14	Revision and open discussion	1.1.1, 1.1.2, 1.1.3, 1.1.5 1.1.6,2.1.1, 2.1.2,2.1.3, 3.1.1, 3.1.2, 4.1.1, 4.1.2, 4.1.3	Brain storming and discussion	Written and oral exams
Week # 15	Revision and open discussion	4.1.1, 4.1.2, 4.1.3	Brain storming and discussion	Written and oral exams

Course Plan

Course coordinator: Dr sherin zakaria

Head of department: Dr sherin zakaria



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy	
	(PharmD)(Clinical pharmacy)	
Major or minor element of program	Major	
Department offering the course	Biochemistry	
Department supervising the course	Biochemistry	
Academic Year / Level	Second year, semester 3	
Date of specification approval	9/2020	

A- Basic Information

Title : Biochemistry I	Code : PB 302
Total Credit Hours :3	Lecture :2
	Practical : 1

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

- Understanding of proteins structure, Protein turnover, biologically active peptides and the use of amino acids as precursors for biosynthesis of biomolecules (e.g. neurotransmitters –nucleotides...).
- Structure, physiological importance of lipids, and lipoprotein metabolism .
- Carbohydrates metabolism and connective tissue structure.
- Enzymes (theories of enzyme action enzyme kinetics inhibition and regulation of enzyme activity clinical correlations).
- ATP synthesis from reduced metabolites (electron transport chain inhibitors uncouplers).
- The study of Hemoglobin and myoglobin (structure synthesis and metabolism clinical correlations).

2. Course learning outcomes DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate knowledge from biochemical science & identify the value of biochemistry in life.

This competency will be developed via the following key elements:

KEY ELEMENTS



1.1.1. Identify and understand the basics of biochemistry.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-3- COMPETENCY

Upon finishing this course, students will be able to handle and dispose biological material and chemicals effectively and safely with respect to relevant laws and legislations.

This competency will be developed via the following key elements:

KEY ELEMENTS

2.3.2. Handle, and dispose biological materials and chemicals safely to avoid their harm to individuals and environment according to safety guidelines.

DOMAIN 3: PHARMACEUTICAL CARE

Upon finishing this course, students will be able to apply the principles of biochemistry in understanding normal body functions to improve health care services using evidence-based information.

This competency will be developed via the following key elements:

KEY ELEMENTS

3.1.1. Relate the normal and abnormal body functions based on biochemistry to manage different disorders and improve health care services.

DOMAIN 4: PERSONAL PRACTICE

4-2- COMPETENCY

Upon finishing this course, students will be able to communicate verbally, non-verbally and in writing with either their colleagues in medical field, patients or communities.

This competency will be developed via the following key elements:



جامعة كفر الشيخ كلية الصيدلة

Course Specifications

KEY ELEMENTS

4.2.1. Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.

3. Contents

Week	Торіс	Total credit hours	Lecture	Practical
1	Proteins - protein structure - biologically active peptides	3	2	1
2	Proteins (Cont.) - proteins metabolism	3	2	1
3	Amino acids -Structure - Classification - Use of amino acids in biosynthesis of biomolecules	3	2	1
4	Carbohydrates -Structure -Classification	3	2	1
5	Carbohydrates (Cont.) - Glycoproteins and proteoglycans	3	2	1
6	Lipids - Classification of lipids - Digestion and absorption of lipids	3	2	1
7	Mid-term exam			
8	Lipids (Cont.) Cholesterol structure, metabolism, related diseases.			
9	Lipids (Cont.) - Lipoprotein metabolism	3	2	1
10	Enzymology - Enzyme kinetics - Role of enzymes in biochemical reaction	3	2	1
11	Enzymology (Cont.) - Inhibition and regulation of enzyme activity	3	2	1



	Course S	Specificatio	ns	
	- Clinical correlations			
12	Hemoglobin and porphyrins - structure - synthesis and metabolism	3	2	1
13	Hemoglobin and porphyrins(Cont.) - Clinical correlations	3	2	1
14	ATP synthesis - Electron transport chain	3	2	Practical exam
15	ATP synthesis(Cont.) -Inhibitors and uncouplers	3	2	Practical exam

4. Teaching and learning methods

U	0	
a. Lectu	ires	(√)
b- E-lea	rning	(√)
c. Pract	ical training / laboratory	()
d. Class	activity	(√)

5. Student assessment methods

Written mid-term exam	To assess	The ability of students to follow-up
		The course subjects.
Practical exam	To assess	The gained experience in laboratory methods and techniques.
Oral exam	To assess	The ability of students in expressing and presenting their knowledge clearly and in systematic approach.
Written final exam	To assess	The overall outcomes.

Assessment schedule

Assessment 1	Periodical exam	Week	7
Assessment 2	Practical exam	Week	14,15
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	16, 17



Weighting or assessments

Written Periodical exam	15	%
Written final exam	50	%
Practical exam	25	%
Oral exam	10	%
Total	100	%

6. List of references

Course notes

1- Notes in Biochemistry I by staff-members of department of Biochemistry.

2- Lab Notes in Biocemistry I by staffmembers of department of Biochemistry.

Essential books (text books)

- 1- Biochemistry, Ferrier, Denise R (2017), 7th Edition, Lippincott Williams and Wilkins.
- 2- Harper's illustrated Biochemistry by Murray RK, Bender DA, Botham KM,

Kennelly PJ, Rodwell VW, P. Anthony Weil PA (2018), 31th Edition, McGraw Hill.

3- Essential Biochemistry: Pratt CW and Cornely K (2017), 4th edition John Wiley &Sons Inc., USA.

Recommended books

1-Biochemistry: Jeremy M. Berg, Lubert Stryer, John Tymoczko, Gregory Gatto (2019), 9th Edition, WH Freeman.

2- Biochemistry with Clinical Correlations, Devlin TM (2019), 8th Edition ,Wiley-Liss INC, USA.

3- Biochemistry, Satyanarayana and Chakrapani (2020), 6th Edition, Arunabha Sen USA.

Websites

http://www.freescience.info/Biology.php. www.highwire.com,

www.google.com,

www.pubmed.com & www.biomed.net

http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookTOC.h tml

7. Facilities required for teaching and learning

- Class rooms.
- Library
- Data show
- Computers.
- Internet.
- Smart board
- Distance unit learning

Course coordinator:

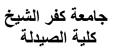
Prof. Nabil Mohie Abdel-Hamid

Head of Department:

Prof. Ramadan Eldomany

Date: 9/2020



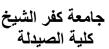


Course Specifications

Course Plan

Week	Торіс	Key Elements	Teaching & Learning Methods	Student Assessment Methods
1	Proteins - protein structure - biologically active peptides	1.1.1, , 2.3.2, 4.2.1	Lectures, E-learning and practical training	Written, practical and oral exams
2	Proteins (Cont.) - proteins metabolism	1.1.1, 2.3.2, 3.1.1 , 4.2.1	Lectures, E-learning and practical training	Written, practical and oral exams
3	Amino acids -Structure - Classification - Use of amino acids in biosynthesis of biomolecules	1.1.1, 3.1.1 , 4.2.1	Lectures, and E- learning	Written, and oral exams
4	Carbohydrates -Structure -Classification	1.1.1, 2.3.2, 3.1.1 , 4.2.1	Lectures, E-learning and practical training	Written, practical and oral exams
5	Carbohydrates (Cont.) - Glycoproteins and proteoglycans	1.1.1, 3.1.1 , 4.2.1	Lectures, and E- learning	Written, and oral exams
6	Lipids - Classification of lipids - Digestion and absorption of lipids	1.1.1, 3.1.1 , 4.2.1	Lectures, and E- learning	Written, and oral exams
7	Mid-term exam			
8	Lipids (Cont.) Cholesterol structure, metabolism, related diseases	1.1.1, 2.3.2, 3.1.1 , 4.2.1	Lectures, E-learning and practical training	Written, practical and oral exams
9	Lipids (Cont.) - Lipoprotein metabolism	1.1.1, 3.1.1 , 4.2.1	Lectures, and E- learning	Written, and oral exams
10	Enzymology - Enzyme kinetics	1.1.1, 3.1.1 , 4.2.1	Lectures, E-learning and practical training	Written, practical and oral exams





Course Specifications - Role of enzymes in biochemical reaction Written, Lectures, E-learning Enzymology (Cont.) - Inhibition and regulation and practical training practical and 11 1.1.1, 3.1.1, 4.2.1 oral exams of enzyme activity - Clinical correlations Written, and Lectures, and E-Hemoglobin and learning oral exams porphyrins 12 - structure 1.1.1, 3.1.1, 4.2.1 - synthesis and metabolism Lectures, and E-Written, and Hemoglobin and oral exams learning porphyrins(Cont.) 13 1.1.1, 3.1.1, 4.2.1 - Clinical correlations Lectures, and E-Written, and ATP synthesis 14 1.1.1, 3.1.1, 4.2.1 learning oral exams - Electron transport chain Written, and ATP synthesis(Cont.) Lectures, and E-15 1.1.1, 3.1.1, 4.2.1 -Inhibitors and oral exams learning

Course coordinator: Prof. Nabil Mohie Abdel-Hamid

Head of department: Prof. Ramadan Eldomany

Approval Date: 9/2020

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Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of pharmacy (PharmD Clinical
	Pharmacy)
Major or minor element of program	Minor
Department offering the course	Faculty of Pharmacy
Department supervising the course	Pharmaceutical Analytical Chemistry
Academic year / Level	Level (2), Semester (3)
Date of specification approval	9/2020

A-Basic Information

Title: Instrumental Analysis	Code: PA 303
Total credit Hours :2	Lecture: 1
Total credit Hours :2	Practical :1

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

- Composition and mechanism of each studied instrument.

- The theory and application of spectrophotometry, spectroflourimetry and chromatography.

- The studied quantitative methods for determination of different pharmaceutical compounds.

- The usage of most appropriate standardization method and interpret data obtained from analytical procedures.

2. Course learning outcomes

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-2- COMPETENCY

Graduates will be able to determine pharmaceutical active ingredients and their stability in formulations as well as inspection of their shelf lives in addition to calibration of instrumentations.

This competency will be developed via the following key elements:

KEY ELEMENTS

2.2.1 Isolate active ingredients by solid phase or liquid-liquid extraction, inspection of its purity by different spectroscopic analytical techniques and finally, subjected to analytical quantification..

2.2.2 Setting guidelines for analytical determination of active ingredients and their

incompatible interactions with various drugs and reagents in quality control units throughout pharmaceutical industry.

2.2.3. Define theories for conducting different analytical procedures by different techniques as well as in-depth exploration for instrumentations and how they are working.

2.3. Competency

Proper dealing with samples containing active pharmaceutical ingredients either biological, pharmaceutical product or even authentic without deterioration in a manner keeping their physical and chemical characteristics in accordance to national and international regulations.

Key Elements

2.3.2 Setting regulations for safe dealing with active pharmaceutical ingredients.

2.5. Competency

Participation in optimizing as well as validation of newly developed analytical methods for accurate determination of pharmaceutical products in addition to clinical applications either in volunteers or laboratory animals required for approval.

Key Elements

2.5.2 Perform analytical identification of analytes as well as determination of their concentration in accordance to ethical research regulations.

2.5.4 Interpret the obtained experimental outcomes and careful statistical dealing with both analytical results and the applied clinical ones.

D- Contents:

Week	Торіс	Total credit hours	Lecture	Practical
1	Spectroscopy Electromagnetic Radiation, Light as energy, types of shift, Effect of pH on absorption spectra	2	1	1
2	Spectrophotometry Instrumentation, Colorimetry, General requirements of the coloured product, General requirement of an ideal chromogen	2	1	1

3	Spectrophotometer, Light sources, Monochromators, Sample compartment, Types of detectors, Signal processor (meter or recorder)	2	1	1
4	Application of UV-Visible-spectrophotometry	2	1	1
5	Luminescence, molecular emission, theory of fluorescence and phosphorescence, fluorescence spectra, instrumentation	2	1	1
6	Advantage of spectroflurometry factors affecting fluoresce intensity, application of spectroflurometry.	2	1	1
7	Periodical exam			
8	Atomic absorption	2	1	1
9	Flame emission	2	1	1
10	ChromatographyIntroduction, comparison between the classical and modern L.C	2	1	1
11	 Chromatography Theoretical aspects , principles, parameters and techniques of chromatography 	2	1	1
12	Chromatography Factors governing the retention compounds, HPLC detectors	2	1	1
13	Column chromatography and TLC	2	1	1
14	Gas chromatography	2	1	Practical exam
15	Capillary electrophoresis; types, detectors	2	1	Practical exam

4. Teaching and learning methods

a. Lectures	(√)
b. E. learning	(√)
b. Practical training / laboratory	(√)
c. Seminar / Workshop	(√)
d. Class Activity	
- Discussion	()
- Brain storming	(√)

5. Student assessment methods

Written periodical	То	The ability of students to follow-up
exam	assess	The course subjects.
Practical exam	То	The gained experience in laboratory
	assess	methods and techniques.
Written final exam	То	The overall outcomes`
	assess	
Oral exam	То	The ability of students in expressing and
	assess	presenting their knowledge clearly and in
		systematic approach

Assessment schedule

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14, 15
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	16, 17

Weighting or assessments

Written periodical Examination	15	%
Practical Examination	25	%
Final Term Examination	50	%
Oral Examination	10	%
Other types of assessment		%
Total	100	%

6. List of references

Course notes

- Notes on instrumental analysis for second year pharmacy students, prepared and distributed by Dept. of Pharmaceutical Analytical Chemistry.

- Lab manual of instrumental analysis for for second year pharmacy students, prepared and distributed by Dept. of Pharmaceutical Analytical Chemistry.

Essential books (text books)

D.A.skoog,D.M.west ,F.J holler and S.R. crouch ,"fundamentals of analytical chemistry", ninth edition , book/cole-thomson learning, inc.(2014)
 G. D. Christian and J. E. Oreilly, "instrumental analysis ",latest edition ,Ally n and Bacon ,inc.

Recommended books

H. H. Willard, L. L. Merritt, Jr, Dean and F. A. Settle, "instrumental methods of analysis" latest edition, Princeton, N. J. Van nostrand

Websites

http://ull.chemistry.uakron.edu/analytical/

7. Facilities required for teaching and learning

-Class room.			
- Laboratory facilities (Microscopes, flames)		–Library	
-Data show	- Computers.	-Internet.	
-Smart board	- Unit for distance learning		
Course acordinat	0.m.		

Course coordinator:

Dr. Ahmed Faried

Head of Department:

Assistant Prof. Dr. Ahmed Abdelmagid

Date: 9/2020

Course Plan

Week	Торіс	Key elements	Teaching and Learning Methods	Student Assessment Methods	
			Learning Wethous		
1	Spectroscopy Electromagnetic Radiation, Light as energy, types of shift, Effect of pH on absorption spectra	2.2.2, 2.2.3	Lectures, class activity, E-learning and brain storming	Written, and oral exams	
2	Spectrophotometry Instrumentation, Colorimetry, General requirements of the coloured product, General requirement of an ideal chromogen	2.2.2, 2.2.3	Lectures, practical training, E-learning and class activity	Written, practical and oral exams	
3	Spectrophotometer, Light sources, Monochromators, Sample compartment, Types of detectors, Signal processor (meter or recorder)	2.2.2, 2.2.3	Lectures, practical training, E-learning and class activity	Written, practical and oral exams	
4	Application of UV-Visible-spectrophotometry	2.2.1, 2.3.2, 2.5.2, 2.5.4	Lectures, practical training, E-learning and class activity	Written, practical and oral exams	
5	Luminescence, molecular emission , theory of fluorescence and phosphorescence, fluorescence spectra, instrumentation	2.2.2, 2.2.3	Lectures, practical training, E-learning and class activity	Written, practical and oral exams	
6	Advantage of spectroflurometry factors affecting fluoresce intensity, application of spectroflurometry.	2.2.1, 2.2.2, 2.2.3, 2.3.2, 2.5.2, 2.5.4	Lectures, practical training, E-learning and class activity	Written, practical and oral exams	
7	Periodical exam				
8	Atomic absorption	2.2.2, 2.2.3	Lectures, class activity, E-learning and brain storming	Written, and oral exams	
9	Flame emission	2.2.2, 2.2.3	Lectures, class activity, E-learning and brain storming	Written, and oral exams	
10	ChromatographyIntroduction, comparison between the classical and modern L.C	2.2.1, 2.2.2, 2.2.3	Lectures, class activity, E-learning and brain storming	Written, and oral exams	
11	ChromatographyTheoretical aspects , principles, parameters and techniques of chromatography	2.2.2, 2.2.3	Lectures, class activity, E-learning and brain storming	Written, and oral exams	
12	Chromatography Factors governing the retention compounds, HPLC detectors	2.2.2, 2.2.3	Lectures, class activity, E-learning and brain storming	Written,and oral exams	
13	Column chromatography and TLC	2.2.1,2.2.2,2.2.3,2.3.2,	Lectures, class activity, E-learning	Written, and oral exams	

		2.5.2, 2.5.4	and brain storming	
14	Gas chromatography	2.2.1, 2.2.2, 2.2.3, 2.3.2, 2.5.2, 2.5.4	Lectures, class activity, E-learning and brain storming	Written and oral exams
15	Capillary electrophoresis; types, detectors	2.2.1, 2.2.2, 2.2.3, 2.3.2, 2.5.2, 2.5.4	Lectures, class activity, E-learning and brain storming	Written and oral exams

Course coordinator: Dr. Ahmed Faried

Head of department: Assistant Prof. Dr. Ahmed Abdelmagid

Kafrelsheikh University Faculty of Pharmacy



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (PharmD		
	Clinical Pharmacy)		
Major or minor element of program	Major		
Department offering the course	Pharmaceutical Organic chemistry		
Department supervising the course	Pharmaceutical Organic chemistry		
Academic Year / Level	Second level , semester (3)		
Date of specification approval	9/2020		

A- Basic Information

Title: Pharmaceutical Organic Chemistry III	Code: PC 303	
	Lecture: 2	
Total credit Hours :3	Practical: 1	

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

Basic information regarding different classes of organic compounds and introduction about the use of different spectroscopic tools :

- 1. Carbohydrates and amino acids
- 2. Peptides
- 3. Polynuclear and heterocyclic chemistry
- 4. Ultra violet (UV) and infrared (IR)
- 5. Nuclear magnetic resonance (NMR) and Mass spectrometry (MS)

2. Course learning outcomes

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate knowledge from basic organic pharmaceutical science to learn chemicals belonging to different classes of organic compounds as a preliminary step in the manufacture of active pharmaceutical products.

This competency will be developed via the following key elements:



KEY ELEMENTS

- 1.1.1. Demonstrate understanding the different classes of organic compounds.
- 1.1.2. Learn the chemistry of heterocyclic compounds.
- 1.1.3 Explain the basics of spectroscopic methods.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-2- COMPETENCY

Upon finishing this course, students will be able to recognize different pharmaceutical materials which are useful in the manufacture organic pharmaceutical products.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 2.2.1. Recognize wide variety of organic pharmaceutical materials.
- 2.2.2 Illustrate the principles of stereo chemistry to different organic compounds.
- 2.2.3 Recognize different methods of spectroscopic analysis.

2-3- COMPETENCY

Upon finishing this course, students will be able to recognize and dispose synthetic pharmaceutical materials effectively and safely with respect to relevant laws and legislations.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 2.3.1. Safely handle synthetic materials as well as chemical reagents to avoid their harm to individuals.
- 2.3.2. Recognize and adopt MSDS safety guidelines for safe and appropriate handling and disposal of laboratory reagents and pharmaceutical chemical materials.

DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

Upon finishing this course, students will be able to express leadership, time management, critical thinking, problem solving, independent and team working skills.



This competency will be developed via the following key elements:

KEY ELEMENTS

- 4.1.1. Demonstrate effective communication and team work skills among students and enhance time management through task delegation among team members.
- 4.1.2. Retrieve information about chemical reactions of different categories of organic compounds and critically analyze results of schematic chemical tests in order to identify a given functional group and solve problems of structural similarity. In doing so, students learn how to work in a team as well as independently.
- 4.1.3. Demonstrate individual creativity through encouragement of innovative problem solving activities.

4-3- COMPETENCY

Upon finishing this course, students are supposed to express self-awareness and be life-long learners for continuous improvement of their knowledge and personal skills.

This competency will be developed via the following key elements:

KEY ELEMENTS

- 4.3.1. Perform self-assessment of their own practical work by comparing their results with standards to enhance professional competencies and self-estimation.
- 4.3.2. Practice independent learning by giving the opportunity to perform internet search and literature survey so as to find out answers to tutorial questions throughout the course.

3. Contents

Week	Торіс	Total credit hours	Lecture	Practical/ Tutorial
1	Carbohydrates	3	2	1
2	Carbohydrates .	3	2	1
3	Amino acids.	3	2	1
4	Peptides.	3	2	1
5	Polynuclear and stereo chemistry.	3	2	1
6	Stereo chemistry (cont.).	3	2	1

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7	Stereo chemistry (cont.).	3	2	1
8	Exercises	3	2	1
9	Mid-term exam			
10	Ultra violet UV.	3	2	1
11	Infrared (IR).	3	2	1
12	Nuclear magnetic resonance (NMR).	3	2	1
13	Nuclear magnetic resonance (NMR).	3	2	1
14	Mass spectrometry (MS).	3	2	1
15	Practical Exam.			

4. Teaching and learning methods

a. Lectures	(√)
b. Practical training/ laboratory	(√)
c. Class activity	(√)

c. Class activity

5. Student assessment methods

Written periodical exam	To assess	The ability of students to follow-up
		The course subjects.
Practical exam	To assess	The gained experience in laboratory methods and techniques.
Written final exam	To assess	The overall outcomes`
Oral exam To assess		The ability of students in expressing and presenting their knowledge clearly and in systematic approach

Assessment schedule

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	1
Assessment 3	Final exam	Week	1
Assessment 4	Oral	Week	1

7	
14, 15	
16, 17	
16, 17	

% % % % % %

Weighting or assessments

Written periodical Examination	15
Practical Examination	25
Final Term Examination	50
Oral Examination	10
Other types of assessment	
Total	100



6. List of references

Course notes

- Notes on Organic chemistry prepared and distributed by Dept. of Pharmaceutical Chemistry.
- Lab Manual of Organic chemistry prepared and distributed by Dept. of Pharmaceutical Chemistry.

Essential books (text books)

- 1) Volhardt K. P. C.; Schore, N. A. in organic chemistry (structure and function), 6th edition (2010) W. H. Freeman and company. NY.
- 2) McMurry, J. in organic chemistry, 8th ed. (2011), Brooks/Cole, London.
- 3) Solmon's T. W. G. in Organic Chemistry 10th ed. (2010), John Wiley and sons, Inc, NY.
- 4) I. L. Finar Organic Chemistry Volume 1: The Fundamental Principles 5th edition, 1998, Longman Publishing Group.
- 5) Clayden, Greeves, Warren and wothers Textbook of Organic Chemistry, Oxford University Press, 2001.
- 6) Bruice, P. Y. in organic chemistry, 6th edition (2010), Pearson education int. NY. Recommended books
- 1) William Brown, Christopher Foote, Brent L.S Iverson, Textbook of Organic Chemistry, "4th edn.", Thomson Brooke/ Cole, 2005.
- 2) Graham Solomons, Craig Fryhle, Textbook of Organic Chemistry, "7th edn.", John Wiley & Sons Inc., New York, 2000.
- 3) I. L. Finar Organic Chemistry Volume 1: The Fundamental Principles 5th edition, 1998, Longman Publishing Group.
- 4) Marc Loudon, Textbook of Organic Chemistry, "4th edn." Oxford University Press, New York, 2002.

Websites

http://www.sciencedirect.com,www.4shared.com

7. Facilities required for teaching and learning

- -Class rooms.
- -Laboratory facilities.
- Data show.
- Computers.
- –Library.
- –Internet.
- Hot plate with magnetic stirrers.

Course coordinator:

Dr. Mohamed Hagrass

Head of Department:

Prof. Dr. Ramadan Eldomany

Date: 9/2020

Kafrelsheikh University Faculty of Pharmacy



جامعة كفر الشيخ كلية الصيدلة

Course Plan

Week	Торіс	Key Elements	Teaching & Learning Methods	Student Assessment Methods
1	Carbohydrates	1.1.1, 2.2.1, 2.3.1, 2.3.2, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
2	Carbohydrates	1.1.1, , 2.2.1, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
3	Amino acids	1.1.1, 2.2.1, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
4	Peptides	1.1.1, 2.2.1, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
5	Poly nuclear & stereo chemistry	1.1.2, 2.2.2, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
6	Stereo chemistry	1.1.2, 2.2.2, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
7	Stereo chemistry	1.1.2, 2.2.2, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
8	Exercises	4.1.2, 4.1.3, 4.3.2	Lectures and practical training	
9	Mid-term exam			
10	UV	1.1.1, 1.1.3,, 2.2.3, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
11	IR	1.1.1, 1.1.3, 2.2.3, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
12	NMR	1.1.1, 1.1.3, , 2.2.3, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
13	NMR	1.1.1, 1.1.3, 2.2.3, 2.2.3, 2.3.1, 2.3.2, 4.1.1, 4.1.1, 4.1.2, 4.1.3, 4.3.1	Lectures, practical training and class activities	Written, practical and oral exams
14	Mass spectrometry	1.1.1, 1.1.3, 2.2.3	Lectures and class activities	Written and oral exams
15	Practical Exam	1.1.1, 1.1.2, 1.1.3, 2.2.1, 2.2.3	Lectures and class	Written and

Kafrelsheikh University Faculty of Pharmacy



جامعة كفر الشيخ كلية الصيدلة

	activities	oral exams

Course coordinator:

Dr. Mohamed Hagrass

Head of Department:

Prof. Dr. Ramadan Eldomany

Date: 9/2020



جامعة كفر الشيخ كلية الصيدلة

Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (PharmD
	Clinical Pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmaceutical technology
Department supervising the course	Pharmaceutical technology
Academic Year / Level	second year, semester (3)
Date of specification approval	9/2020

A- Basic information:

Title: Pharmaceutical Dosage Forms I	Code: PT303
Total credit Hours :3	Lecture: 2
Total credit Hours :5	Practical:1

B- Professional information:

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

- Outline and classify different routes of drug administration.
- Understand the principles of compounding and dispensing.
- Formulation of non-sterile liquid dosage forms such as solutions and disperse systems.
- The specification of liquid dosage forms.
- The formulation design and additives in maintaining the stability of the dosage forms and the bioavailability of drug.
- The quality attributes of the selected products.

2. Course learning outcomes

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate knowledge from basic pharmaceutical science to formulate different classes of liquid dosage forms as a preliminary step in the manufacture of active pharmaceutical products.



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This competency will be developed via the following key elements:

KEY ELEMENTS

- 1.1.1. Identify pharmaceutical calculations requisite to the compounding and dispensing of drugs in pharmacy practice.
- 1.1.2. Explain different routes of drug administration and different types of dosage forms.
- 1.1.3. Demonstrate the specifications of ideal suspension, emulsion and colloid.
- 1.1.4. Discuss the factors affecting stability of pharmaceutical colloid, suspensions and emulsions..
- 1.1.5. Define the best additives to enhance the stability of pharmaceutical solutions, suspension and other disperse systems.
- 1.1.6. Discuss different types of incompatibilities.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-2- COMPETENCY

Upon finishing this course, students will be able to formulate and standardize different liquid dosage forms which are useful in the manufacture of pharmaceutical products. This competency will be developed via the following key elements:

KEY ELEMENTS

- 2.2.1. Apply the rules of manufacturing, storage and transportation of pharmaceutical disperse systems.
- 2.2.2. Carry out the necessary calculations of each ingredient and doses to respond to prescription.
- 2.2.3. Integrate pharmaceutical knowledge in formulating safe and effective dosage forms taking in consideration incompatibilities issues.
- 2.2.4. Recognize recent knowledge in pharmaceutical technology to design new drug delivery systems.
- 2.2.5. Examine the best method for preparation of different pharmaceutical dispers systems.
- 2.2.6. Select suitable method for characterization of liquid dosage forms, active ingredient and excipients.
- 2.2.7. Recognize factors affecting stability of pharmaceutial solutions, suspension and emulsion.
- 2.2.8. Develop and evaluate the quality attributes of liquid dosage forms.

2-3- COMPETENCY

Upon finishing this course, students will be able to handle and dispose synthetic pharmaceutical products effectively and safely with respect to relevant laws and legislations.

This competency will be developed via the following key elements: KEY ELEMENTS



جامعة كفر الشيخ كلية الصيدلة

- 2.3.1. Safely use different chemicals to avoid their harm to the students.
- 2.3.2. Recognize and follow MSDS safety guidelines for safe and appropriate handling and disposal of pharmaceutical chemical materials in the laboratory.
- 2.3.3. Demonstrate to the patient the safe use and storage of the prescribed medicine.

DOMAIN 3: Pharmaceutical Care

DOMAIN 4: PERSONAL PRACTICE

3. Contents

Week	Торіс		Lecture	Practical (credit hours)
1	Introduction -Pharmaceutical calculations	3	2	1
2	-Liquid dosage forms	3	2	1
3	- Pharmaceutical solutions	3	2	1
4	-Mixtures	3	2	1
5	 -Introduction to disperse system Suspensions -Reasons for preparing suspension -Characters of ideal suspension 		2	1
6	 - ideal characters of suspending agents - Formulation and evaluation of suspensions 3 		2	1
7	Periodical exam	3	2	1
8	Emulsion -Definition -Types of emulsion	3	2	1
9	- Theories of emulsification			1
10	-Stability of emulsions	3	2	1
11	Different methods for Preparation of emulsion	3	2	1
12	Ideal characters of Emulsifying agents -examples of emulsifying agents	3	2	1
13	Colloids -definition -Pharmaceutical application of colloids	3	2	1
14	-Types of colloidal systems 2 2		Practical exam	
15	-Ideal characters of colloids -Stability of colloids	2	2	Practical exam



جامعة كفر الشيخ كلية الصيدلة

4. Teaching and learning methods

- a. Lectures (V)
- b. E-learning (√)
- c. Practical training/ laboratory ~~ (ν)
- d. Class activity (v)

5. Student assessment methods

Written periodical exam	To assess	The ability of students to follow-up The course subjects.	
Practical exam	To assess	The gained experience in laboratory methods and techniques.	
Written final exam	To assess	The overall outcomes`	
Oral exam To assess		The ability of students in expressing and presenting their knowledge clearly and in systematic approach	

Assessment schedule

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14, 15
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	16, 17

Weighting or assessments

Written periodical Examination	15	%
Practical Examination	25	%
Final Term Examination	50	%
Oral Examination	10	%
Other types of assessment		%
Total	100	%

6. List of references

Course notes

Notes and Lab manual prepared by the department staff.

Essential books (text books)

Kevin Taylor, Michael Aulton, Aulton's Pharmaceutics: The Design and Manufacture of Medicines. 5th Edition, 2017.



جامعة كفر الشيخ كلية الصيدلة

Recommended books

<u>Yvonne Perrie</u>, <u>Thomas Rades</u>, FASTtrack: Pharmaceutics - Drug Delivery and Targeting, Second edition, Pharmaceutical Press, 2012.

Websites

www.pubmed.com

www.sciencedirect.com

7. Facilities required for teaching and learning

- Class rooms.
- Laboratory facilities (Equipment of factory).
- Data show.
- smart board
- Unit for distance learning.

Course coordinator:

Prof.Dr. Abd El Aziz El Said

Head of Department:

Prof.Dr. Abd El Aziz El Said

Date: 9/2020

Course Plan Course ILOs Matrix – Teaching and Learning Strategy and Student Assessment Course title: Pharmaceutical dosage form-1 Course code: PT303

Course Contents ILOs Teaching and Student			5	
Learning Methods	Course Contents	ILOs	and Learning	Assessment

- Computers.
- Internet and Library.

Kafrelsheikh University Faculty of Pharmacy



جامعة كفر الشيخ كلية الصيدلة

	T	Concern UNIVE	-	
Week # 1	Introduction -Pharmaceutical calculations	1.1.1, 1.1.2, 2.2.1, 2.2.2, 2.2.3.	Lectures, E- learning, practical training and class activities	Written, practical and oral exams
Week # 2	-Liquid dosage forms	1.1.2, 1.1.3, 1.1.4, 2.2.1, 2.2.2, 2.2.3, 2.2.5, 2.2.6, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, practical training and class activities	Written, practical and oral exams
Week # 3	- Pharmaceutical solutions	1.1.2, 1.1.3, 1.1.5, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.2.6, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, practical training and class activities	Written, practical and oral exams
Week # 4	-Mixtures	1.1.5, 1.1.6, 2.2.1, 2.2.2, 2.2.3, 2.2.5, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, practical training and class activities	Written, practical and oral exams
Week # 5	-Introduction to disperse system Suspensions -Reasons for preparing suspension -Characters of ideal suspension	1.1.3, 1.1.5, 1.1.6, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, practical training and class activities	Written, practical and oral exams
Week # 6	 - ideal characters of suspending agents -Formulation and evaluation of suspensions '-Stability of suspensions 	1.1.4, 1.1.5, 1.1.6, 2.2.3, 2.2.5, 2.2.6, 2.2.7, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, practical training and class activities	Written, practical and oral exams
Week # 7	Periodical exam			
Week # 8	Emulsion -Definition -Types of emulsion	1.1.1, 1.1.3, 1.1.6, 2.2.1, 2.2.2, 2.2.3, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, practical training and class	Written and oral exams

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			activities	
Week # 9	- Theories of emulsification	1.1.3, 1.1.6, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, practical training and class activities	Written and oral exams
Week # 10	-Stability of emulsions	1.1.4, 1.1.5, 1.1.6, 2.2.5, 2.2.6, 2.2.7, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, practical training and class activities	Written, practical and oral exams
Week # 11	Different methods for Preparation of emulsion	1.1.1, 2.2.1, 2.2.4, 2.2.5, 2.2.6, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, and practical training	Written, practical and oral exams
Week # 12	ideal characters of Emulsifying agents -examples of emulsifying agents	1.1.1, 2.2.1, 2.2.4, 2.2.5, 2.2.6, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, and practical training	Written, practical and oral exams
Week # 13	Colloids -definition -Pharmaceutical application of colloids	1.1.1, 1.1.3, 1.1.6, 2.2.1, 2.2.2, 2.2.3, 2.3.1, 2.3.2, 2.3.3.	Lectures, E- learning, and practical training	Written, practical and oral exams
Week # 14	-Types of colloidal systems	1.1.3, 1.1.6, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.1, 2.3.2, 2.3.3.	Lectures and E-learning	`Written and oral exams
Week # 15	-ideal characters of colloids -Stability of colloids	1.1.4, 1.1.5, 1.1.6, 2.2.1, 2.2.5, 2.2.6, 2.2.7, 2.3.1, 2.3.2, 2.3.3.	Lectures and E-learning	Written and oral exams



جامعة كفر الشيخ كلية الصيدلة

Course coordinator:

Dr. Abd El -aziz El-said

Head of Department:

Dr/ Abd El -aziz El-said



Kafrelsheikh University, Faculty of Pharmacy Course Specifications

Program on which the course is given	Bachelor of Pharmacy (PharmD) (Clinical pharmacy)
Major or minor element of program	Major
Department offering the course	Pharmacognosy
Department supervising the course	Pharmacognosy
Academic Year / Level	Level 2, semester (3)
Date of specification approval	9/2020

A- Basic Information

Title: Pharmacognosy (2)	Code: PG 303	
Total credit Hours :3	Lecture: 2	
	Practical: 1	

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students will develop various competencies based on covering the following general outlines:

- Different macroscopical and microscopical characters of some representative examples of medicinal plant used in international and Egyptian market with focus on fruits, herbs, subterranean organs, unorganized, marine and animal drugs.

- Different medicinal plants' active constituents and their traditional, evidence-bases uses, contraindications, side effects, and potential drug-herb interaction.

2. Course learning outcomes

DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to correlate knowledge from basic chemistry, microscopic character and ethnopharmacological properties of plants to identify different plants and their uses in Egyptian and worldwide pharmaceutical markets. This competency will be developed via the following key elements:



Course Specifications

KEY ELEMENTS

- 1.1.1. Explain the pharmacology of fruits, herbs, subterranean organs, unorganized, marine, and animal drugs based in correlation with their active constituents.
- 1.1.2. Articulate knowledge about different analytical techniques for detection of adulteration of different fruits, herbs, subterranean organs, unorganized, marine, and animal drugs.
- 1.1.3. *Retrieve information* about morphological and histological characters and production of fruits, herbs, subterranean organs, unorganized, marine and animal drugs

1.1.9. outline different resources for retrieval of evidence-based information related to medicinal plants and effectively use it in therapeutic decision making.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-2- Competency

Students will be able to prepare, dispense, store, and distribute medical plantderived products according to national and WHO guidelines in healthcare institutes and formulary

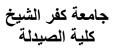
This competency will be developed via the following key elements:

KEY ELEMENTS

- 2.2.2. Select the suitable techniques for identification of different fruits, herbs, subterranean organs, unorganized, marine, and animal drugs based on their microscopic and chemical profile .
 - 2.2.3. Employ guidelines of GMP and Quality assurance in preparation, standardization distribution and storage of of fruits, herbs, subterranean organs, unorganized, marine, and animal drugs.

2.2.4. Implement the suitable guidelines for storing and transportation of drugs derived from fruits, herbs, subterranean organs, unorganized, marine, and animal sources.





Course Specifications

DOMAIN 3: PHARMACEUTICAL CARE

3-2- COMPETENCY

Upon finishing this course, students will be able to provide counseling and education services to patients and community about safe and rational use of drugs derived from plants.

This competency will be developed via the following key elements:

KEY ELEMENTS

3.2.9. Choose the suitable OTC preparation from medicinal plants based on patient symptoms and provide council for health care colleagues and patients patient, health care professionals on safe and proper use of drugs.

3.2.10. Use effectively drugs derived from from fruits, herbs, subterranean organs, unorganized, marine, and animal sources for the management of different diseases.

3.2.11. Utilize Evidence based information to predict adverse effects drug interaction and toxicity associated with administration of herbal drugs derived from fruits, herbs, subterranean organs, unorganized, marine, and animal sources.

DOMAIN 4: PERSONAL PRACTICE

4-2- Competency

Upon finishing this course, Students will be able to effectively communicate verbally, non-verbally and in writing with patient and health care team.

This competency will be developed via the following key elements:

KEY ELEMENTS

4.2.1 Present and simplify a WHO monograph for a selected plant using data-show technology in an interesting and scientific manner.



3. Contents

Week	Торіс	Total credit hours	Lecture	Practical/ Tutorial
1	-Introduction of fruits -Umbelliferous fruits (fennel, anise, Cumin)	4	2	2
2	-Umbelliferous fruits (ammi visnaga, ammi majus, coriander, Carawy, Dill, Celery)	4	2	2
3	-Medicinal fruits as capsicum, colocynth, vanilla, Black pepper, cubebs, poppy capsule, bitter orange peel, star anise, wheat grain	4	2	2
4	-Introduction of subterranean organs	4	2	2
5	-Rhizomes as rhubarb, filix mas, podophyllum, ginger, hydrastis, galangl, colchicum	4	2	2
6	-Roots as ipecacuanha, senega	4	2	2
7	Mid-term exam			
8	-unorganized drugs as extracts, gums, Dried juices, lattices, resins	4	2	2
9	 unorganized drugs as oleo-resins, oleo-gum-resins, volatile oil, oils & fats, waxes, saccharine substances 	4	2	2
10	Drugs of animal origin	4	2	2
11	Marine drugs	4	2	2
12	Marine drugs	4	2	2
13	Introduction to herb	4	2	2
14	Mentha, lobelia	2	2	Practical exam
15	solanaceous herbs	2	2	Practical exam



4. Teaching and learning methods

a. Lectures	(√)
b. Practical training/ laboratory	(√)
c. Class activity	(√)
c. E-learning	(√)

5. Student assessment methods

Written periodical	To assess	The ability of students to follow-up
exam		The course subjects.
Practical exam	To assess	The gained experience in laboratory methods and techniques.
Written final exam	To assess	The overall outcomes`
Oral exam	To assess	The ability of students in expressing and presenting their knowledge clearly and in systematic approach

Assessment schedule

Assessment 1	periodical exam	Week	7
Assessment 2	Practical exam	Week	14, 15
Assessment 3	Final exam	Week	16, 17
Assessment 4	Oral	Week	16, 17

Weighting or assessments

Written periodical Examination	15	%
Practical Examination	25	%
Final Term Examination	50	%
Oral Examination	10	%
Other types of assessment		%
Total	100	%

6. List of references



Course Specifications

Course notes

- Notes on pharmacognosy prepared in the form of a book authorized by the department
- Lab Manual of pharmacognosy prepared and distributed by the Department Essential books (text books)

- Trease and Evans, Pharmacognosy 16th edition, WB Saunders

Recommended books

- Bruneton, Pharmacognosy-Pyhtochemistry-Medicinal Plants, 2nd edition, Technique Documentation, 2001.
- McCreath, S. B., and Delgoda, R. (2017) *Pharmacognosy: Fundamentals, applications and strategies*, Academic Press.

Websites

-

www.biomedcentral.com

www.medscape.com

http://www.sciencedirect.com/

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

7. Facilities required for teaching and learning

- -Class rooms.
- -Laboratory facilities (Water baths, Microscopes)
- Data show.
- Computers.
- –Library.
- –Internet.

-Interactive boards and distant learning unit

Course coordinator:

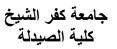
Dr. Mona Elasser

Head of Department:

Prof. Dr. Ramadan Eldomany

Date: 9/2020



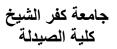


Course Specifications

Course Plan

Wk.	Торіс	Key Elements	Teaching & Learning Methods	Student Assessment Methods
1	-Introduction of fruits -Umbelliferous fruits (fennel, anise, Cumin)	1.1.1, 1.1.2, 1.1.3, 2.2.2., 2.2.3, 2.2.4 3.2.9,3.2.10, 3.2.11	Lectures, discussion, and brain storming	Written, and oral exams
2	-Umbelliferous fruits (ammi visnaga, ammi majus, coriander, Carawy, Dill, Celery)	1.1.1, 1.1.2, 1.1.3, 1.1.9, 2.2.2., 2.2.3, 2.2.4 3.2.9,3.2.10, 3.2.11, 4.2.1	Lectures, practical and seminar presentation	Written, practical and oral exams
3	-Medicinal fruits as capsicum, colocynth, vanilla, Black pepper, cubebs, poppy capsule, bitter orange peel, star anise, wheat grain	1.1.1, 1.1.2, 1.1.3, 1.1.9, 2.2.2., 2.2.3, 2.2.4 3.2.9,3.2.10, 3.2.11, 4.2.1	Lectures, practical and seminar presentation	Written, practical and oral exams
4	-Introduction of subterranean organs	1.1.1, 1.1.2, 1.1.3, 2.2.2., 2.2.3, 2.2.4 3.2.9,3.2.10, 3.2.11	Lectures, practical and seminar presentation	Written, practical and oral exams
5	-Rhizomes as rhubarb, filix mas, podophyllum, ginger, hydrastis, galangl, colchicum	1.1.1, 1.1.2, 1.1.3, 1.1.9, 2.2.2., 2.2.3, 2.2.4 3.2.9,3.2.10, 3.2.11, 4.2.1	Lectures, discussion, and brain storming	Written, practical and oral exams
6	-Roots as ipecacuanha, senega	1.1.1, 1.1.2, 1.1.3,1.1.9, 2.2.2., 2.2.3,2.2.43.2.9,3.2.10,3.2.11, 4.2.1	Lectures, practical and seminar presentation	Written, practical and oral exams
7	Mid-term exam			
8	-unorganized drugs as extracts, gums, Dried juices, lattices, resins	1.1.1, 1.1.2, 1.1.3, 2.2.2., 2.2.3, 2.2.4 3.2.9,3.2.10, 3.2.11	Lectures, practical and seminar presentation	Written, practical and oral exams
9	- unorganized drugs as oleo-resins, oleo- gum-resins, volatile oil, oils & fats, waxes, saccharine substances	1.1.1, 1.1.2, 1.1.3, 1.1.9, 2.2.2., 2.2.3,	Lectures, practical and	Written, practical and oral exams





		224 220 22 10	seminar	
		2.2.4 3.2.9,3.2.10,		
		3.2.11, 4.2.1	presentation	
		1.1.1, 1.1.2, 1.1.3,	Lectures,	XX 7
		1.1.9, 2.2.2., 2.2.3,	practical and	Written,
10	Drugs of animal origin	2.2.4 3.2.9,3.2.10,	seminar	practical and
		3.2.11, 4.2.1	presentation	oral exams
		3.2.11, 4.2.1	presentation	
<u> </u>		1.1.1, 1.1.2, 1.1.3,	-	
		2.2.2., 2.2.3, 2.2.4	Lectures,	Written,
11	Marine drugs	3.2.9,3.2.10,	discussion and	practical and
	6	3.2.11	brain storming	oral exams
		3.2.11		
		1.1.1, 1.1.2, 1.1.3,	Lectures,	Weitter
		1.1.9, 2.2.2., 2.2.3,	practical and	Written,
12	Marine drugs	2.2.4 3.2.9,3.2.10,	seminar	practical and
		3.2.11, 4.2.1	presentation	oral exams
		5.2.11, 1.2.1	presentation	
		1.1.1, 1.1.2, 1.1.3,	Lastras	Witter
		2.2.2., 2.2.3, 2.2.4	Lectures,	Written,
13	Introduction to herb	3.2.9,3.2.10,	discussion and	practical and
		3.2.11	brain storming	oral exams
		1.1.1, 1.1.2, 1.1.3,	Lectures,	
		1.1.9, 2.2.2., 2.2.3,	practical and	Written, and
14	Mentha, lobelia	2.2.4 3.2.9,3.2.10,	seminar	oral exams
		3.2.11, 4.2.1	presentation	
			-	
		1.1.1, 1.1.2, 1.1.3,	Lectures,	
		1.1.9, 2.2.2., 2.2.3,	discussion and	Written, and
15	solanaceous herbs and revision	2.2.4 3.2.9,3.2.10,	brain storming	oral exams
		3.2.11, 4.2.1	orani storning	
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Kafrelsheikh University, Faculty of Pharmacy Course Specifications

programme on which the course is given	BSc of Pharmacy(PharmD) (Clinical Pharmacy)
0	
Major or minor element of programme	Major
Department offering the course	Physiology department, faculty
	of medicine
Department supervising the course	Pharmacology and toxicology
	department
Academic Year / Level	Level (2), semester 3
Date of specification approval	9/2020

A- Basic Information

Title : Physiology	Code : MD304
Total contact hours:2	Lecture :2
Tutorial :	Practical :0

B- Professional Information

1. Overall aims of the course

Upon successful completion of this course, the students should be able to:

- Study the normal physiological functions of respiratory system, autonomic nervous system, digestive system and blood.
- Study the abnormal pathophysiological conditions affecting respiratory system, autonomic nervous system, digestive system and blood.
- Practically identify some physiological parameters such as ESR, Respiratory rate,etc.

2. Intended learning outcomes of the course (ILOs)

A- DOMAIN 1- FUNDAMENTAL KNOWLEDGE

1-1- COMPETENCY

Upon finishing this course, students will be able to integrate knowledge from basic physiological knowledge to identify the abnormality in body function via the following key elements including respiratory system, autonomic nervous system and blood.

- 1.1.2 identify the Normal and abnormal body function.
- 1.1.3 Identify The basic epidemiology and pathophysiology of diseases of the different body systems.
- 1.1.4 Identify Different physiological parameters.

DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE

2-1- COMPETENCY

Upon finishing this course, students will be able to detect abnormal physiological function, based on key physiological indicator

- 2.1.1. Recognize complete differentiation of the physiology of body systems studied.
- 2.1.2. Utilize different physiological terminology.
- 2.1.3. Utilize knowledge and critical understanding of essential facts, concepts, principles and theories relating to the subject areas identified under knowledge and understanding.

DOMAIN 3: PHARMACEUTICAL CARE 3-1- COMPETENCY

Upon finishing this course, students will be able to apply the principles of body functions

This competency will be developed via the following key elements:

- 3.1.1. relate the difference between physiology of body systems studied.
- 3.1.2. monitor some common physiological tests e.g. blood group testing
 - and ESR.
- 3.1.3. integrate effectively library search, retrieval of information, carry out private study as well as analyze and interpret experimental results.

DOMAIN 4: PERSONAL PRACTICE

4-1- COMPETENCY

Upon finishing this course, students will be able to express leadership, time management, critical thinking, problem solving, independent and team working skills.

This competency will be developed via the following key elements

• 4.1.1. Retrieve information from a variety of sources, including libraries, databases and internet.

• 4.1.2. apply skills of Interact independently or as a part of team in different pharmaceutical field

- 4.1.3. Demonstrate creativity and time management skills.
- 4.1.4. learning needed to implementing presentation, writing reports and interviewing skills.
- 4.1.5- Retrieve information about fundamentals of physiology of different body systems including respiratory system, autonomic nervous system and blood.

3. Conte

Week	Торіс	Total contact hours	Lecture	Tutorial / Practical
1	Respiratory system, Blood, Autonomic Nervous System	2	2	0
2	Respiratory system, Blood, Autonomic Nervous System (cont.)	2	2	0
3	Respiratory system, Blood, Autonomic Nervous System (cont.)	2	2	0
4	Respiratory system, Blood, Autonomic Nervous System (cont.)	2	2	0
5	Respiratory system, Blood, Autonomic Nervous System (cont.)	2	2	0
6	Respiratory system, Blood, Autonomic Nervous System (cont.)	2	2	0
7	Mid-term exam			
8	Respiratory system, Blood, Autonomic Nervous System (cont.)	2	2	0
9	Respiratory system, Blood, Autonomic Nervous System (cont.)	2	2	0
10	Blood,Digestion, Respiratory system	2	2	0

11	Digestion, Respiratory system	2	2	0
12	Digestion, Respiratory system (cont.)	2	2	0
13	Digestion, Respiratory system (cont.)	2	2	0
14	Digestion, Respiratory system (cont.)	2	2	0
15	Digestion, Respiratory system (cont.)	2	2	0

4. Teaching and learning methods

- a. Lectures&virtual lectures
- **b.** Practical training / laboratory
- c. Seminar / Workshop
- d. Class Activity(on line activity)

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5. Student assessment methods

Written midterm exam	To assess	the ability of students to follow-up	
		the course subjects.	
Written final exam	To assess	the overall outcomes.	
Oral exam	To assess	the ability of students in expressing	
		and presenting their knowledge	
		clearly and in systematic approach.	
Practical exam	To assess	the gained experience in laboratory	
		methods and techniques.	

Assessment schedule

Written midterm exam	Week
Practical exam	Week
Oral exam	Week
Final exam	

7
14,15
16,17
16,17

Weighting or assessments

Mid term Examination	
Final term Examination	
Oral Examination	
Practical Examination	
Other types of assessment	
Total	_

[15%	
	50%	
	10%	
	25 %	
	100%	

6. List of references

Essential books (text books)

Textbook in Medical Physiology and Pathophysiology(2005). Poul-Erik Paulev. 2nd edition . Copenhagen Medical Publishers Recommended books

Websites

http://physiologyonline.physiology.org/ http://arjournals.annualreviews.org/loi/physiol

7. Facilities required for teaching and learning

-Class rooms

-library

 Projectors (overhead, video projector)
 Laboratory facilities , The practical part of this course includes application of some common physiological test e.g. blood group testing and ESR

Course coordinator :

Dr. Sanad Elkholy

Head of Department :

Dr. Sherin zakria

Date : 9 /2020

Course Plan

Course title: **Physiology**

Course code: MD 304

С	ourse Contents	ILOs	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Respiratory system, Blood, Autonomic Nervous System	1.1.1, 2.1.1, 3.1.1,4.1.1 , 4.1.3	Lectures and practical training	Written, practical and oral exams
Week # 2	Respiratory system, Blood, Autonomic Nervous System (cont.)	1.1.1,1.1. 4, 2.1.2,3.1.3 , 4.1.2	Lectures and practical training	Written, practical and oral exams
Week # 3	Respiratory system, Blood, Autonomic Nervous System (cont.)	1.1.3,1.1.4,b1, 2.1.2, 3.1.1, 3.1.3, 4.1.2, 4.1.3	Lectures and practical training	Written, practical and oral exams
Week # 4	Respiratory system, Blood, Autonomic Nervous System (cont.)	1.1.2,1.1.4,2.1.1,2.1.2 , 3.1.3, 4.1.2 , 4.1.3	Lectures and practical training	Written, practical and oral exams
Week # 5	Respiratory system, Blood, Autonomic Nervous System (cont.)	1.1.1, 1.1.3,2.1.1,2.1.2 , 3.1.1, 3.1.3, 4.1.1	Lectures and practical training	Written, practical and oral exams
Week # 6	Respiratory system, Blood, Autonomic Nervous System (cont.)	1.1.1,1.1. 2,11.3,1.1.4,2.1. 1, 3.1.3, 4.1.3	Lectures and practical training	Written, practical and oral exams
Week # 7	Mid-term exam			
Week # 8	Respiratory system, Blood, Autonomic Nervous System (cont.)	1.1.4,2.1. 1,2.1.2 , 3.1.1, 3.1.3, 4.1.4,4.1.5	Lectures and practical training	Written, practical and oral exams
Week # 9	Respiratory system, Blood, Autonomic Nervous System	1.1.1,1.1.4,2.1.1,2.1.2 , 3.1.1, 3.1.3, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5	Lectures and practical training	Written, practical and oral exams
Week # 10	Blood,Digestion, Respiratory system	1.1.1,1.1.2,1.1.3,1.1.4,2.1 .1, 2.1.2, 3.1.1, 3.1.3, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5	Lectures and practical training	Written, practical and oral exams
Week # 11	Digestion, Respiratory system	1.1.1,1.1.2,1.1.3,1.1.4,2.1 . 1,2.1.2 ,2.1.3 ,3.1.2 , 4.1.1, 4.1.2, 4.1.3	Lectures and practical training	Written, practical and oral exams
Week # 12	Digestion, Respiratory system (cont.)	1.1.1,1.1.2,1.1.3,1.1.4,2.1 . 1,2.1.2 , 3.1.2, 4.1.1, 4.1.2, 4.1.3	Lectures and practical training	Written, practical and oral exams
Week # 13	Digestion, Respiratory system (cont.)	1.1.1,1.1.2,1.1.3,1.1.4,2.1 . 1,2.1.2 ,2.1.3 , 3.1.2, 4.1.1, 4.1.2, 4.1.3	Lectures and practical training	Written, practical and oral exams
Week # 14	Digestion, Respiratory system (cont.)	1.1.1,1.1.2,1.1.3,1.1.4,2.1 . 1,2.1.2 ,3.1.2 , 4.1.1, 4.1.2, 4.1.3	Lectures	Written and oral exams
Week # 15	Digestion, Respiratory system (cont.)	1.1.1,1.1.2,1.1.3,1.1.4,2.1 . 1,2.1.2,2.1.3,3.1.2, 4.1.1,4.1.2,4.1.3,4.1.4, 4.1.5	Lectures	Written and oral exams

Course coordinator :

Dr. Sanad Elkholy

Head of Department :

Dr. Sherin zakria

Date: 9 /2020