Kafr el-Sheikh university
Faculty of Pharmacy
Clinical (Pharm-D) program
Course Specification
2025/2026

Clinical (Pharm-D) program

Course Specification

2025/2026

Third Level

First Semester

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Course Specification

(2025)

1. Basic Information

Course Title (according to the bylaw)	Pharmacology II			
Course Code (according to the bylaw)	PO 503			
Department/s participating in delivery of the course	Pharmacology & Toxicology			
Number of credit hours/points of the course (according to the bylaw)	Theoretical	Practical	Other (specify)	Total
	2	1		3
Course Type	compulsory			
Academic level at which the course is taught	Third level semester 1			
Academic Program	Bachelor of Pharmacy (Pharm D Clinical)			
Faculty/Institute	Faculty of Pharmacy			
University/Academy	Kafrelsheikh University			
Name of Course Coordinator	Prof. Dr. Sherin zakaria			
Course Specification Approval Date	9/2025			
Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)	Department council			

2. Course Overview (Brief summary of scientific content)

This course provides an in-depth study of the pharmacological actions of drugs acting on the central nervous system, gastrointestinal tract, respiratory system, and blood. It covers the mechanisms of action, therapeutic uses, and adverse effects of these agents. The course also addresses the pharmacology of autacoids, including their role in inflammation and allergy, as well as drugs used in the treatment of related conditions. Emphasis is placed on integrating pharmacological principles with the underlying physiology and pathophysiology of relevant disease processes.

Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
Domain 1 (FUNDAMENTAL KNOWLEDGE) **1-1- COMPETENCY**		**Upon successful completion of this course, students will be able to explain the pharmacological effects, mechanisms of action, side effects, and contraindications of drugs acting on the central nervous system (CNS), gastrointestinal tract (GIT), respiratory system, blood, and autacoids. They will demonstrate the ability to evaluate drug use, recognize and interpret adverse effects, and conduct practical screening of CNS drugs in laboratory animals.** **This competency will be developed via the following key elements:**	
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1	Demonstrate the different categories of central nervous system drugs
		1.1.2	Demonstrate understanding of the pharmacology of autacoids and narcotic analgesics drugs
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate	1.1.3	Demonstrate understanding of the pharmacological intervention in peptic ulcer, GERD, vomiting, IBS, IBD, managing depression, anxiety, parkinsonism, schizophrenia, and Alzheimer's disease.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
	their appropriateness, effectiveness, and safety in individuals and populations .		
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.4	Retrieve information about managing depression, anxiety, parkinsonism, schizophrenia, and Alzheimer's disease
		1.1.5	Identify mechanism of action of drugs affecting blood and respiratory system
DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE **2-1- COMPETENCY**		**Upon completion of the course, the student will be able to apply pharmacological principles to design appropriate therapeutic plans for diverse patient cases, and demonstrate safe practices in handling synthetic substances and laboratory animals to ensure individual and environmental safety.** **This competency will be developed via the following key elements:**	
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.1	Apply pharmacological knowledge to set the therapeutic intervention in different patients.
2-2- COMPETENCY		**Upon completion of the course, the student will be able to distinguish between central nervous system stimulants and depressants by analyzing their characteristics, metabolic pathways, therapeutic actions, and potential toxicities.** **This competency will be developed via the following key elements:**	
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis,	2.2.1	Demonstrate practical skills in screening drugs affecting the central nervous system using laboratory animal experiments, and use scientific data to support safe and effective pharmacy practice.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
	bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice .		
2-3- COMPETENCY		**Upon completion of the course, the student will be able to demonstrate safe and responsible use of laboratory reagents, handle synthetic materials and experimental animals with care, and adhere to established safety protocols for the ethical handling and disposal of laboratory animals and pharmaceutical substances** **This competency will be developed via the following key elements:**	
2.3.1	Handle, identify, and dispose biologicals, synthetic/natural materials, biotechnology-based and radio-labeled products, and other materials/products Used in pharmaceutical fields.	2.3.1	Use effectively laboratory reagents appropriately and safely.
		2.3.2	Handle safely synthetic materials and experimental animals
2.3.2	Recognize and adopt ethical, legal, and safety guidelines for handling and Disposal of biologicals, and pharmaceutical	2.3.3	Recognize and adopt safety guidelines for safe and appropriate handling of animals, their disposal and disposal of the used drugs.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
	materials/products.		
2-4- Competency		**Upon completion of the course, the student will be able to identify pathological conditions affecting the central nervous system, gastrointestinal tract, respiratory system, blood, and autacoids, and apply appropriate pharmacological strategies to manage the related disorders.** **This competency will be developed via the following key elements:**	
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	**2.4.1**	Utilize the different pharmacologic interventions used to manage peptic ulcer, GERD, vomiting, irritable bowel syndrome and inflammatory bowel diseases.
		2.4.2	Apply their knowledge to detect different pathological conditions related to CNS, GIT, respiratory system, blood, and autacoids.
Domain 3: Pharmaceutical Care **3-2- Competency**		**Upon completion of the course, the student will be able to integrate pharmacological knowledge to choose appropriate drug therapies tailored to individual patient needs, assess the effects of medications acting on the CNS, GIT, respiratory system, blood, and autacoids, and develop effective pharmaceutical care plans to ensure optimal therapeutic outcomes.** **This competency will be developed via the following key elements:**	

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1	Integrate knowledge to select suitable drugs according to patient's criteria.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2	Monitor the pharmacological effects of different CNS modulating drugs, GIT acting drugs, respiratory system acting drugs, blood acting drugs and drugs affecting autacoids.
		3.2.3	Provide suitable pharmaceutical care plan to patients based on their pharmacological knowledge.
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 individuals and communities.** **This competency will be developed via the following key elements:**	

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.1	Acquire effective presentation skills in the modern technology and media to create engaging and memorable experiences. This includes using interactive slides, incorporating multimedia (videos, images, audio), and employing tools for real-time feedback and collaboration. By integrating these elements, student can enhance audience engagement, clarify complex information, and leave a lasting impact.
		4.2.2	Demonstrate effective communication by verbal means and appreciate the joint effort in teamwork

3. Teaching and Learning Methods

1. Lectures
2. E-learning
3. Practical training/ laboratory
4. Case study
5. Brain storming
6. Assignment
7. Discussion
8. Seminars

Course Schedule

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	**Training** (Practical/Clinical/ .....)	**Self-learning** (Tasks/ Assignments/ Projects/ ...)	**Other** (to be determined)
1	Pharmacological actions of drugs acting on central nervous system	4	2	2		
2	Pharmacological actions of drugs acting on central nervous system	4	2	2		
3	Pharmacological actions of drugs acting on central nervous system	4	2	2		
4	Pharmacological actions of drugs acting on central nervous system	4	2	2		
5	Pharmacological actions of drugs acting on central nervous system	4	2	2		
6	Pharmacological actions of drugs acting on central nervous system	4	2	2		
7	**Semester work**					
8	Pharmacological actions of drugs acting on GIT	**4**	**2**	**2**		
9	Pharmacological actions of drugs acting on GIT(cont.)	**4**	**2**	**2**		
10	Pharmacological actions of drugs acting on GIT(cont.)	**4**	**2**	**2**		
11	Pharmacological actions of drugs acting on GIT(cont.)	**4**	**2**	**2**		
12	Pharmacological actions of drugs acting on GIT(cont.)	**4**	**2**	**2**		

13	Pharmacological actions of drugs acting on Blood and respiratory system	**4**	**2**	**Revision**		
14	Autacoids	**2**	**2**	Practical exam		
15	Revision	**2**	**2**	Practical exam		

4. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks(%)
1	Exam 1written (formative exam)	4th week	5	5
2	Periodical exam	7th week	10	10
3	Final Practical/Clinical/… Exam	14th ,15th	25	25
4	Final Written Exam	16th ,17th	50	50
5	Final Oral Exam	16th ,17th	10	10

5. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The main (essential) reference for the course** (must be written in full according to the scientific documentation method)	The Pharmacological Basis of Therapeutics (2008). Goodman & Gilman's. 12 th editions. The McGraw-Hill Companies
	Other References	-Basic & Clinical Pharmacology (2021`). BG. Katzung.15 th ed. McGraw-Hill . -Pharmacology (2007). Rang H.P.& Dale M. 7th Edition. Churchill Livingston London -Lippincott Modern Pharmacology (2019). C. Champe, A. Harvey and Denise R. (illustrated pharmacology Review). South Asian Edition. Lippincott Williams & Wilkins
	Electronic Sources (Links must be added)	www.biomedcentral.com -www.Pubmed.com

		-www.medscape.com
	Learning Platforms (Links must be added)	**https://lms3.kfs.edu.eg/pharm/login/index.php**
	Other (to be mentioned)	
Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	-Data show -Computers . –Internet .
	Supplies	Laboratory facilities: laboratory animals, chemicals, drugs, animal cages, digital balances and funnels. - Lab notebooks.
	Electronic Programs	----------
	Skill Labs/ Simulators	----------
	Virtual Labs	----------
	Other (to be mentioned)	-Class rooms. -Library

Course Plan

Matrix of course learning outcomes CLOs – Teaching and Learning Strategy and Student Assessment

Course title: Pharmacology II **Course code: PO 503**

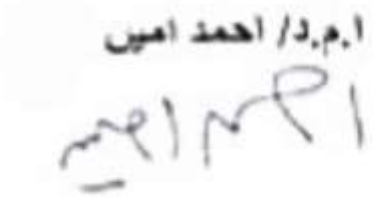
Course Contents		Key Elements	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Pharmacological actions of drugs acting on central nervous system	1.1.1 , 1.1.2, 1.1.3, 1.1.4 2.1.1, 2..2.1, ,2.3.1, 2.3.2, 2.3.3, 2.4.2, 3.2.1, 3.2.2, , 3.2.3 4.2.1, 4.2.2	Lectures and practical training	Written, practical and oral exams
Week # 2	Pharmacological actions of drugs acting on central nervous system (con)	1.1.1 , 1.1.2, 1.1.3, 1.1.4 2.1.1, 2..2.1, ,2.3.1, 2.3.2, 2.3.3, 2.4.2, 3.2.1, 3.2.2, , 3.2.3 4.2.1, 4.2.2	Lectures and practical training, discussion	Written, practical and oral exams
Week # 3	Pharmacological actions of drugs acting on central nervous system (con)	1.1.1 , 1.1.2, 1.1.3, 1.1.4 2.1.1, 2..2.1, ,2.3.1, 2.3.2, 2.3.3, 2.4.2, 3.2.1, 3.2.2, , 3.2.3 4.2.1, 4.2.2	Lectures and practical training	Written, practical and oral exams
Week # 4	Pharmacological actions of drugs acting on central nervous system (con)	1.1.1 , 1.1.2, 1.1.3, 1.1.4 2.1.1, 2..2.1, ,2.3.1, 2.3.2, 2.3.3, 2.4.2, 3.2.1, 3.2.2, , 3.2.3 4.2.1, 4.2.2	Lectures and practical training, discussion	Written, practical and oral exams
Week #	Pharmacological actions of drugs acting on central	1.1.1 , 1.1.2, 1.1.3, 1.1.4	Lectures and	Written, practical

5	nervous system (con)	2.1.1, 2..2.1, ,2.3.1, 2.3.2, 2.3.3, 2.4.2, 3.2.1, 3.2.2, , 3.2.3 4.2.1, 4.2.2	practical training	and oral exams
Week # 6	Pharmacological actions of drugs acting on central nervous system (con)	1.1.1 , 1.1.2, 1.1.3, 1.1.4 2.1.1, 2..2.1, ,2.3.1, 2.3.2, 2.3.3, 2.4.2, 3.2.1, 3.2.2, , 3.2.3 4.2.1, 4.2.2	Lectures and practical training, e-learning, discussion	Written, practical and oral exams
Week # 7	**Semester work**			
Week # 8	Pharmacological actions of drugs acting on GIT	1.1.3 2.1.1, 2.3.1, 2.3.2, ,2..4.1, 2..4.2 3.2..1, 3.2.2, 3.2.3 4.2.1, 4.2.2	Lectures and practical training, e-learning, case study	Written, practical and oral exams
Week # 9	Pharmacological actions of drugs acting on GIT(cont.)	1.1.3 2.1.1, 2.3.1, 2.3.2, ,2..4.1, 2..4.2 3.2..1, 3.2.2, 3.2.3 4.2.1, 4.2.2	Lectures and practical training, brain storming	Written, practical and oral exams
Week # 10	Pharmacological actions of drugs acting on GIT(cont.)	1.1.3 2.1.1, 2.3.1, 2.3.2, ,2..4.1, 2..4.2 3.2..1, 3.2.2, 3.2.3 4.2.1, 4.2.2	Lectures and practical training, case study, brain storming	Written, practical and oral exams
Week # 11	Pharmacological actions of drugs acting on GIT(cont.)	1.1.3 2.1.1, 2.3.1, 2.3.2, ,2..4.1, 2..4.2	Lectures and practical training, case study, brain storming	Written, practical and oral exams

		3.2..1, 3.2.2, 3.2.3 4.2.1, 4.2.2		
Week # 12	Pharmacological actions of drugs acting on GIT(cont.)	1.1.3 2.1.1, 2.3.1, 2.3.2, ,2..4.1, 2..4.2 3.2..1, 3.2.2, 3.2.3 4.2.1, 4.2.2	Lectures and practical training, case study	Written, practical and oral exams
Week # 13	Pharmacological actions of drugs acting on blood and respiratory system	1.1.5 2.1.1, 2.3.1, 2.4.2 3.2.1, 3.2.2, 3.2.3 4.2.1, 4.2.2	Lectures and practical training, case study	Written, practical and oral exams
Week # 14	Autacoids	1.1.2 2.1.1, 2.3.1, 2..4.2 3.2.1, 3.2.2, 3.2.3 4.2.1, 4.2.2	Lectures, brain storming, case study	Written and oral exams
Week # 15	Revision		Lectures, discussion and brain storming	Written and oral exams

Name and Signature

Name and Signature

Course Coordinator Prof. Dr. Sherin Zakaria	Program Coordinator Ass. Prof. Ahmed Amin
	

Kafrelsheikh University
Faculty of Pharmacy

جامعة كفر الشيخ
كلية الصيدلة

Course Specification
(2025)

1. Basic Information

Course Title (according to the bylaw)	**Pharmaceutical microbiology**			
Course Code (according to the bylaw)	**PM 503**			
Department/s participating in delivery of the course	**Microbiology and Immunology**			
Number of credit hours/points of the course (according to the bylaw)	**Theoretical**	**Practical**	**Other (specify)**	**Total**
	2	**1**	**----**	**3**
Course Type	**Compulsory**			
Academic level at which the course is taught	**third level, semester (1)**			
Academic Program	**BSc in Pharmacy (Pharm D)**			
Faculty/Institute	**Pharmacy**			
University/Academy	**Kafer El-sheikh Univeristy**			
Name of Course Coordinator	**Prof. Dr. Ramadan Eldomany**			
Course Specification Approval Date	**9/2025**			
Course Specification Approval	**Department council**			

2. Course Overview (Brief summary of scientific content)

This course is designed to provide student with basic, practical and professional knowledge on antimicrobial agents, either antibiotics or non-antibiotics. Different sterilization methods and their application scope will be studied in this course.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
Domain 1 (FUNDAMENTAL KNOWLEDGE) **1-1- COMPETENCY**		**Upon finishing this course, students will be able to integrate knowledge from basic and applied pharmaceutical and clinical sciences to know about microorganisms and antibiotics.** **This competency will be developed via the following key elements:**	
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1	Discuss the different classes of antibiotics, and non-antibiotics antimicrobial agents.
		1.1.2	Explain social and behavioral factors affecting the proper use of antibiotics.
		1.1.3	Demonstrate microbiological sciences to validate sterilization techniques, quality of antimicrobial agents and avoid microbial spoilage.
1.1.6	Utilize scientific literature and collect and interpret information to enhance professional decisions.	1.1.4	Integrate knowledge from fundamental pharmaceutical and medical sciences to explain the antibiotic mechanism of action and resistance
		1.1.5	Utilize Principles of pharmaceutical microbiology and determine antimicrobial dosage, antibiotic combination.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE **2-2- COMPETENCY**		**Upon finishing this course, students will be able to apply pharmaceutical microbiology principles to ensure microbial limit compliance of raw materials and finished products, validate aseptic and preservative systems in formulation and manufacturing, and participate in microbiologically sound systems for dispensing, storage, and distribution of medicines. This competency will be developed via the following key elements:**	
2.2.2	Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/ products considering various incompatibilities.	2.2.1	Apply international guidelines of GMP, QC and QA in sterilization of pharmaceutical material handling, and storage.
		2.2.2	Integrate essential knowledge with manufacturing and storing of antimicrobials.
		2.2.3	Apply the principles of different techniques of sterilization to operate the pharmaceutical equipment and instruments.
2.2.3	Recognize the principles of various tools and instruments and select the proper techniques for synthesis and analysis of different materials and production of pharmaceuticals.	2.2.4	Adopt essential knowledge relevant to good manufacturing practice of pharmaceutical products such as antibiotics and biocides
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and biopharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.5	Recognize principles of pharmaceutical calculation for dose modification of antibiotic and non-antibiotic.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
2-3- COMPETENCY		**Upon finishing this course, students will be able to apply pharmaceutical microbiology principles to safely handle and dispose of biologicals and pharmaceutical materials/products, ensuring appropriate sterilization, decontamination, and waste management with respect to relevant laws and legislations.** **This competency will be developed via the following key elements:**	
2.3.1	Handle, identify, and dispose biologicals, synthetic/natural materials, biotechnology-based and radio-labeled products, and other materials/products used in pharmaceutical fields.	**2.3.1**	Handle microorganisms and antimicrobials safely and effectively according to relevant laws and legislations.
		2.3.2	Dispose microorganisms and antimicrobials waste safely to avoid the environmental hazards.
2.3.2	Recognize and adopt ethical, legal, and safety guidelines for handling and disposal of biologicals, and pharmaceutical materials/products.	**2.3.3**	Recognize and adopt safety guidelines for safe and appropriate handling of microorganisms and non-antibiotic antimicrobial agents.
		2.3.4	Demonstrate the safe use and storage of the antibiotics to the patient.
2-5- COMPETENCY		**Upon finishing this course, students will be able to participate in research studies and clinical trials that assess antimicrobial activity, resistance patterns, and microbiological safety of pharmaceutical materials.** **This competency will be developed via the following key elements:**	

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
2.5.1	Fulfill the requirements of the regulatory framework to authorize a medicinal product including quality, safety, and efficacy requirements.	2.5.1	Apply microbiological testing for raw materials, in-process controls, and finished products.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2	Identify CLSI guidelines for sensitive, intermediate and resistant bacteria to different antibiotics.
		2.5.3	Recognize the significance of results of antibiotic susceptibility testing in relation to patient history.
2.5.3	Contribute in planning and conducting research studies using appropriate methodologies.	2.5.4	Propose clear research questions or hypotheses relevant to antimicrobial agent quality, safety, and stability of bacterial and antimicrobial preparation.
Domain 3: Pharmaceutical Care **3-1- Competency**		**Upon finishing this course, students will be able to apply principles of host–pathogen interactions and microbial physiology to improve healthcare services through evidence-based microbiological data.** **This competency will be developed via the following key elements:**	
3.1.2	Apply the principles of public health and pharmaceutical microbiology to select and assess proper methods of infection control.	3.1.1	Employ the proper use of antimicrobials, prevent microbial resistance and learn about misuse of antibiotics.
3.1.3	Monitor and control microbial growth and carry out laboratory tests for identification of infections/diseases.	3.1.2	Apply culture-based and rapid microbiological methods to detect and quantify microorganisms in raw materials, intermediates, and finished products.
3-2- Competency		**Upon finishing this course, students will be able to deliver evidence-based counseling regarding appropriate antimicrobial therapy, resistance**	

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
		prevention, and safe utilization of medical devices, ensuring microbiological safety at both individual and community levels. **This competency will be developed via the following key elements:**	
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	**3.2.1**	Recognize mechanisms of action of antimicrobials, therapeutic uses, dosage, contra-indications, adverse drug reactions, drug interactions and resistance.
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, creativity and entrepreneurial skills.** **This competency will be developed via the following key elements:**	
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	**4.1.1**	Demonstrate critical thinking, problem-solving, creativity, time management and decision-making abilities to choose the appropriate antibiotic.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	**4.1.2**	Communicate efficiently and effectively with other health care team using the proper pharmaceutical and medical terms, abbreviations and symbols.
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:**	

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.1	Show the ability to effectively present a topic of interest using recent technologies.
4-3- Competency		Upon finishing this course, students will be able to express self-awareness and be lifelong learners for continuous professional improvement. This competency will be developed via the following key elements:	
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1	Collect and analyze information from different sources to determine self merits/ limitations and improve professional and personal skills.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2	Learn independently to develop professional skills.

4. Teaching and Learning Methods

.1- Lectures (√)

1- E-learning (√)

2- Practical training/ laboratory (√)

3- Class activity (√)

4- Seminars (√)

5- Virtual lab (√)

Course Schedule

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	**Training (Practical /Clinical/ .....)**	**Self-learning (Tasks/ Assignments/ Projects/ ...)**	**Other (to be determined)**
1	Introduction & Classification types of Antibiotics.	**4**	**2**	**2**		
2	Mode of action of Antibiotics.	**4**	**2**	**2**		
3	Antibiotic drug combination	**4**	**2**	**2**		
4	Bacterial resistance to antibiotics	**4**	**2**	**2**		
5	Clinical use and missuse of antibiotics.	**4**	**2**	**2**		
6	Microbiological assay of antibiotics.	**4**	**2**	**2**		
7	**Mid-term exam**					
8	Classification of non antibiotic antimicrobial agents, mode of action & Resistance.	**4**	**2**	**2**		
9	Applications of non antibiotic antimicrobial agents &Evaluation.	**4**	**2**	**2**		

10	Microbial contamination of pharmaceutical products & problems	**4**	**2**	**2**		
11	Microbial spoilage of pharmaceutical products	**4**	**2**	**2**		
12	Intoduction to Sterilization and Official methods of sterilization	**4**	**2**	**2**		
13	Validation of Sterilization process.	**4**	**2**	**2**		
14	Microbiological quality of pharmaceuticals	**4**	**2**	**Practical exam**		
15	Aseptic area and testing of pyrogins	**4**	**2**	**Practical exam**		

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks
1	Exam 1written (formative exam)	**5**		
2	Periodical exam	**7**	**15**	**15%**
3	Final Written Exam	**16, 17**	**50**	**50%**
4	Final Practical/Clinical/… Exam	**14, 15**	**25**	**25%**
5	Final Oral Exam	**16, 17**	**10**	**10%**
6	Assignments / Project /Portfolio/ Logbook			
7	Field training			
8	Other (Mention)			

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The main (essential) reference for the course** (must be written in full according to the scientific documentation method)	• Black, J.C., 2017, Microbiology Principles & Applications (10th edition). • Gilmore, Brendan F., and Stephen P. Denyer, eds. Hugo and Russell's pharmaceutical microbiology. John Wiley & Sons, 2023. • Gupta, Meenakshi. "PHARMACEUTICAL MICROBIOLOGY BP 303 T Unit-1 Isolation & Growth ".Curve of Bacteria
	Other References	Notes and Lab manual prepared by the department staff.
	Electronic Sources (Links must be added)	www.pubmed.com www.sciencedirect.com
	Learning Platforms (Links must be added)	**https://lms3.kfs.edu.eg/pharm/login/index.php**
Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	**Laboratory facilities (Equipment of factory).**
	Supplies	**Laboratory facilities, microscope, laminar flow & autoclave**
	Electronic Programs	**----**
	Skill Labs/ Simulators	**----**
	Virtual Labs	
	Other (to be mentioned)	**Data show, smart board, Unit for distance learning, Computers, Internet and Library.**

Course Plan

Matrix of course learning outcomes CLOs – Teaching and Learning Strategy and Student Assessment

Course title: Pharmaceutical Dosage Forms-II Course code: PT 404

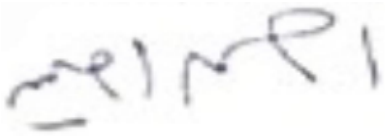
Course Contents		Key elements	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction & Classification types of Antibiotics.	1.1.1, 1.1.3, 2.2.5, 2.5.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 2	Mode of action of Antibiotics.	1.1.4, 1.1.5, 2.2.5, 3.2.1, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training and class activities, Virtual lab	Written, practical and oral exams
Week # 3	Antibiotic drug combination	1.1.4, 1.1.5, 2.2.5, 2.3.4, 3.2.1, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training and class activities, Virtual lab	Written, practical and oral exams
Week # 4	Bacterial resistance to antibiotics	1.1.2, 1.1.4, 1.1.5, 2.2.5, 2.5.2, 3.2.1, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training and class activities, Virtual lab	Written, practical and oral exams
Week # 5	Clinical use and missuse of antibiotics.	1.1.2, 1.1.4, 1.1.5, 2.2.5, 2.3.4, 2.5.2, 3.2.1, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2.	Lectures, E-learning, practical training and class activities, Virtual lab	Written, practical and oral exams
Week # 6	Microbiological assay of antibiotics, vitamins	1.1.3, 1.1.4, 1.1.5, 2.2.5, 3.2.1, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training and class activities, Virtual lab	Written, practical and oral exams

Week # 7	**periodical exam**			
Week # 8	Classification of non antibiotic antimicrobial agents, mode of action & Resistance.	1.1.2, 1.1.4, 1.1.5, 2.2.5, 3.2.1, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training and class activities, Virtual lab	Written, practical and oral exams
Week # 9	Applications of non antibiotic antimicrobial agents &Evaluation.	1.1.2, 1.1.4, 1.1.5, 2.2.1, 2.2.5, 2.5.2, 3.1.1, 3.1.2, 3.2.1, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training and class activities, Virtual lab	Written, practical and oral exams
Week # 10	Microbial contamination of pharmaceutical products & problems	1.1.3, 1.1.4, 2.2.1, 2.2.2, 2.2.4, 2.3.1, 2.3.2, 2.3.3, 2.5.1, 2.5.3, 3.1.1, 3.1.2, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training and class activities, Virtual lab	Written, practical and oral exams
Week # 11	Microbial spoilage of pharmaceutical products	1.1.3, 1.1.4, 2.2.1, 2.2.2, 2.2.4, 2.3.1, 2.3.2, 2.3.3, 2.3.4, 2.5.1, 2.5.3, 3.1.1, 3.1.2, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, practical training, seminars and class activities, Virtual lab	Written, practical and oral exams
Week # 12	Intoduction to Sterilization and Official methods of sterilization	1.1.3, 1.1.4, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.1, 2.3.2, 2.3.3, 2.5.1, 2.5.3, 3.1.1, 3.1.2, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, seminars and practical training	Written, practical and oral exams

Week # 13	Validation of Sterilization process.	1.1.3, 1.1.4, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.1, 2.3.2, 2.3.3, 2.5.1, 2.5.3, 3.1.1, 3.1.2, 4.1.1, 4.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures, E-learning, seminars and practical training	Written, practical and oral exams
Week # 14	Microbiological quality of pharmaceuticals	2.2.1, 2.2.2, 2.2.4, 2.3.1, 2.3.2, 2.3.3, 2.5.1, 2.5.3, 2.5.4, 3.1.1, 3.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures and E-learning	Written and oral exams
Week # 15	Aseptic area and testing of pyrogins	2.2.1, 2.2.2, 2.2.4, 2.3.1, 2.3.2, 2.3.3, 2.5.1, 2.5.3, 2.5.4, 3.1.1, 3.1.2, 4.2.1, 4.3.1, 4.3.2	Lectures and E-learning	Written and oral exams

Name and Signature
Course Coordinator
Prof. Ramadan El-domany

Name and Signature
Program Coordinator
Associate. Prof. Ahmed Amin



Kafrelsheikh University

Faculty of Pharmacy

جامعة كفر الشيخ

كلية الصيدلة

Course Specification

2025

1. Basic Information

Course Title (according to the bylaw)	**Parasitology and virology**			
Course Code (according to the bylaw)	**PM 504**			
Department/s participating in delivery of the course	**Microbiology and immunology department**			
Number of credit hours/points of the course (according to the bylaw)	**Theoretical**	**Practical**	**Other (specify)**	**Total**
	2	**1**		**3**
Course Type	Compulsory			
Academic level at which the course is taught	third level, Semester 1			
Academic Program	Bachelor of Pharmacy (Pharm D clinical Program)			
Faculty	Faculty of Pharmacy			
University	Kafrelshiekh university			
Name of Course Coordinator	**Prof. Dr. Ramadan Eldomany**			
Course Specification Approval Date	9/2025			
Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)	Department Council			

2. Course Overview (Brief summary of scientific content)

This course covers parasitic infections in humans, focusing on their biology, epidemiology, and impact. It includes medical helminthology, protozoology, and entomology, discussing morphology, life cycle, pathogenesis, diagnosis, treatment, prevention, and control. Laboratory diagnosis of parasitic infections is also addressed. The course further covers RNA and DNA viral infections, highlighting their epidemiology, clinical features, diagnosis, treatment, and prevention. It aims to provide students with essential knowledge to recognize and manage these diseases.

1. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
Domain 1 (FUNDAMENTAL KNOWLEDGE) **1-1- COMPETENCY**		**Upon finishing this course, students will be able to integrate knowledge from basic parasitology and virology to understand the microbial disease in human beings.** **This competency will be developed via the following key elements:**	
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1	**Discuss the impact of parasitic and viral .diseases on public health**
		1.1.2	**Recognize common parasites and viruses .affecting humans**
		1.1.3	**Describe the life cycle and pathogenesis of parasites and viruses.**
		1.1.4	**based on parasites and viruses Classify replication. and morphology**

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5	**Identify relevant features of parasites and viruses linked to disease**
		1.1.6	**Explain the mechanisms of infection and .host–pathogen interactions**
		1.1.7	**Apply knowledge of life cycles in of parasites and diagnosis and treatmen viruses**
		1.1.8	**Integrate fundamental science concepts to propose solutions for prevention and control of parasites and viruses**
1.1.6	Utilize scientific literature and collect and interpret information to enhance professional decisions.	1.1.9	**Search relevant scientific literature on .parasitic and viral diseases**
		1.1.10	**Collect epidemiological and clinical data about parasites and from reliable sources viruses**
		1.1.11	**Interpret research findings to guide for diagnosis and treatment choices parasitic and viral infections**
		1.1.12	**Apply evidence-based information to improve infection control strategies**
1.1.7	Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care.	1.1.13	**Identify newly emerging parasitic and .viral diseases affecting public health**
		1.1.14	**Analyze emerging parasitic and viral diseases impact on drug development and drug production**
		1.1.15	**Evaluate clinical challenges in diagnosis parasitic and viral forand treatment .diseases**

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
		1.1.16	**Interpret strategies to address parasitic about emerging health threats .and viral diseases**
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:**	
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity	**2.1.1**	**Demonstrate ethics when caring for infected patients.**
		2.1.2	**Identify patients' rights and privacy.**
		2.1.3	**Recognize diversity in patients' beliefs and practices about parasitic and viral infections.**
		2.1.4	**Apply rules to give fair health care.**
2-4- COMPETENCY		**Upon finishing this course, students will be able to actively share professional decisions and proper actions to save patient's life in emergency situations and controlling severe symptoms.** **This competency will be developed via the following key elements:**	
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	**2.4.1**	**Identify emergency signs in parasitic and .viral infections**
		2.4.2	**Describe first aid steps for critical .parasitic and viral infection cases**

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
2.4.4	Assess toxicity profiles of different xenobiotics and detect poisons in biological specimens.	2.4.3	**Assess toxicity of drugs used in treating parasitic and viral diseases.**
		2.4.4	**Analyze adverse effects related to anti-parasitic and antiviral agents.**
		2.4.5	**Evaluate the safety of therapeutic agents through parasitic and viral diseases for laboratory testing**
2-5- COMPETENCY		**Upon finishing this course, students will be able to contribute in microbiological research studies and clinical trials needed to authorize antiviral and antiparasite products.** **This competency will be developed via the following key elements:**	
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.1	**Retrieve scientific data on parasitic and viral diseases from trusted sources.**
		2.5.2	**Interpret research findings to support parasitic anddiagnosis and treatment for .viral diseases**
		2.5.3	**Evaluate the quality of evidence for parasitic and therapeutic decisions about .viral diseases**
Domain 3: Pharmaceutical Care **3-1- Competency**		**Upon finishing this course, students will be able to apply the principles of parasitology and virology to participate in improving health care services using evidence-based data.** **This competency will be developed via the following key elements:**	
3.1.1	Apply the principles of body function and the basis of genomics in health and disease states to manage different diseases.	3.1.1	**Explain how parasites and viruses affect normal body functions.**
		3.1.2	**Apply genomic knowledge to understand parasitic and viralvariation.**

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
		3.1.3	**Analyze the relationship between host genetics and parasitic and viral disease severity.**
3.1.2	Apply the principles of public health and pharmaceutical microbiology to select and assess proper methods of infection control.	**3.1.4**	**Apply public health principles to control parasitic and viral infections**
		3.1.5	**Select suitable infection control measures for different parasitic and viral pathogens.**
		3.1.6	**Assess the effectiveness of control and prevention strategies for emerging parasitic and viral diseases.**
3.1.3	Monitor and control microbial growth and carry out laboratory tests for identification of infections/diseases.	**3.1.7**	**Analyze parasitic and viral growth in laboratory settings.**
		3.1.8	**Apply control methods to limit parasite and virus spread.**
		3.1.9	**Identify parasit esand vir uses through diagnostic laboratory tests.**
		3.1.10	**Interpret laboratory data to support diagnosis for parasitic and viral diseases**
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	**3.1.11**	**Relate causes and spread patterns of parasitic and viral diseases.**
		3.1.12	**Describe disease mechanisms and clinical manifestations of parasitic and viral diseases.**
		3.1.13	**Identify laboratory diagnostic methods for specific parasitic and viral infections.**
		3.1.14	**Apply otherapeutic approaches for effective treatment for parasitic and viral diseases**

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
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 in managing parasitic and viral infections.** **This competency will be developed via the following key elements:**	
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	**4.1.1**	**Examine findings during parasitic and viral infection assessment**
		4.1.2	**Demonstrate parasitic and viral infection detection techniques**
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	**4.1.3**	**Retrieve relevant data on parasitic and viral diseases from scientific sources.**
		4.1.4	**Analyze information critically to understand parasitic and viral disease patterns.**
		4.1.5	**Identify problems related to diagnosis and treatment for parasitic and viral diseases.**
4.1.3	Demonstrate creativity and apply entrepreneurial skills within a simulated entrepreneurial activity.	**4.1.6**	**Design innovative approaches to parasitic and viral disease management.**
		4.1.7	**Develop strategies for healthcare entrepreneurship**
4-3- Competency		**Upon finishing this course, students will be able to express self-awareness and be a life-long learner for continuous professional improvement.** **This competency will be developed via the following key elements:**	
4.3.1		**4.3.1**	

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
	Perform self-assessment to enhance professional and personal competencies.		**Perform regular self-assessment of knowledge and skills.**
		4.3.2	**Identify strengths and areas needing improvement.**
		4.3.3	**Develop plans to improve professional performance.**
		4.3.4	**Apply feedback to enhance personal competencies**

2. Teaching and Learning Methods

.1- Lectures (√)

2- E-learning (√)

3- Practical training/ laboratory (√)

4- Class activity (√)

5- Seminars (√)

6- Case study (√)

7- Assignment (√)

8- Virtual lab (√)

Course schedule

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	Training (Practical /Clinical/ .....)	Self-learning (Tasks/ Assignments/ Projects/ ...)	Other (to be determined)
1	Introduction to parasitology	**4**	**2**	**2**		
2	Phlylum protozoa (class Rhizopoda (Entamoeba histolytica), class ciliata (Balantidium coli, sporozoa (Plasmodiae).	**4**	**2**	**2**		
3	Toxoplasma gondii, class zoomastigophora (intestinal flagellates (Giardia lamblia and Trichomonas vaginalis). Haemoflagellates (Genus Leishmania and Trypanosoma).	**4**	**2**	**2**		
4	Class trematoda: liver flukes (Faciola spp.)	**4**	**2**	**2**		
5	Schistosoma (blood fluke)	**4**	**2**	**2**		
6	Class cestoidea: Taenia spp. and Hymenolepis spp.)	**4**	**2**	**2**		
7	**Mid-term exam**					
8	Class nematoda (Trichenella spiralis and Trichurius trichura.	**4**	**2**	**2**		

9	Hook worms (Ancylostoma duodenal and Necator americanus	**4**	**2**	**2**		
10	Ascaris lumbricoides, Enterobius vermicularis and visceral larva migrans.	**4**	**2**	**2**		
11	Blood and tissue nematodes	**4**	**2**	**2**		
12	Introduction and Classification of viruses	**4**	**2**	**2**		
13	Cultivation of viruses, Clinical & laboratory diagnosis of virla infections	**4**	**2**	**2**		
14	diseases caused by DNA viruses	**4**	**2**	**Practical exam**		
15	diseases caused by RNA viruses	**4**	**2**	**Practical exam**		

3. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks
1	Exam 1written (formative exam)	Week 6	….	…..
2	Periodical exam	Week 7	15	15%
3	Final Written Exam	Week 16-17	50	50%
	Final Practical Exam	Week 14-15	25	25%
	Final Oral Exam	Week 16-17	10	10%
	Assignments //Portfolio/ Logbook	Week 13-14	…….	……..

4. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The main (essential) reference for the course** (must be written in full according to the scientific documentation method)	- Gunn, Alan, and Sarah J. Pitt. Parasitology: an integrated approach. John Wiley & Sons, 2022. - Flint, S. Jane, et al. Principles of virology, Volume 2: pathogenesis and control. John Wiley & Sons, 2020. - Parasitology Protozoology And Helminthology 13Ed (Hb 2019): (Protozoology & Helminthology - Infectious Diseases, Microbiology and Virology Paperback – 5 December 2019. - Louten, Jennifer. Essential human virology. Academic Press, 2022.
	Other References	Notes and Lab manual prepared by the department staff.
	Electronic Sources (Links must be added)	www.pubmed.com www.sciencedirect.com
	Learning Platforms (Links must be added)	**https://lms3.kfs.edu.eg/pharm/login/index.php**
	Other (to be mentioned)	www. parasitology-online.com www.cup.cam.ac.jk/journals/par. www.med.sc.edu:85/book/parasit-sta.htm.

Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	**Laboratory facilities.**
	Supplies	**microscope and other lab instruments**
	Electronic Programs	**----**
	Skill Labs/ Simulators	**----**
	Virtual Labs	**----**
	Other (to be mentioned)	**Data show, smart board, Unit for distance learning, Computers, Internet and Library.**

Course Plan

Matrix of course learning outcomes CLOs – Teaching and Learning Strategy and Student Assessment

Course title: parasitology and virology Course code: PM 604

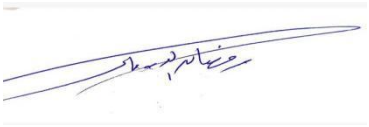
Course Contents		**Key elements**	**Teaching and Learning Methods**	**Student Assessment Methods**
Week # 1	Introduction to parasitology	1.1.1,1.1.2,1.1.3, 1.1.4,1.1.5,1.1.6	Lectures, E-learning, practical training	Written, practical and oral exams
Week # 2	Phlylum protozoa (class Rhizopoda (Entamoeba histolytica), class ciliata (Balantidium coli, sporozoa (Plasmodiae).	1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10 , 1.1.11 ,1.1.12,1.1.13,/1.1.14/1.1.15/	Lectures, E-learning, practical training and class activity	Written, practical and oral exams
Week # 3	Toxoplasma gondii, class zoomastigophora (intestinal flagellates (Giardia lamblia and Trichomonas vaginalis). Haemoflagellates (Genus	1.1.16/2.1.1/2.1.2 /2.1.3/2.1.4/2.4.1	Lectures, E-learning, practical training and seminars	Written, practical and oral exams

	Leishmania and Trypanosoma).			
Week # 4	Class trematoda: liver flukes (Faciola spp.)	2.4.2/2.4.3/2.4.4/2.4.5/2.5.1/2.5.2/ 2.5.3/3.1.1/3.1.2/3.1.3/3.1.4/3.1.5/3.1.6/	Lectures, E-learning, practical training and class activity	Written, practical and oral exams
Week # 5	Schistosoma (blood fluke)	3.1.7/3.1.8/3.1.9/3.1.10/3.1.11/ 3.1.12/3.1.13/3.1.14/ 4.1.1/4.1.2 /4.2.3/4.2.4/4.2.5/4.2.6/4.2.7	Lectures, E-learning and practical training	Written, practical and oral exams
Week # 6	Class cestoidea: Taenia spp. and Hymenolepis spp.)	4.3.1/4.3.2/4.3.3/4.3.4/4.3.5/4.3.6/4.3.7	Lectures, E-learning, practical training and case study	Written, practical and oral exams
Week # 7	**Mid-term exam**			
Week # 8	Class nematoda (Trichenella spiralis and Trichurius trichura.	1.1.16/2.1.1/2.1.2/2.1.3/2.1.4/2.4.1	Lectures, E-learning, practical training and class activity	Written, practical and oral exams
Week # 9	Hook worms (Ancylostoma duodenal and Necator americanus	2.4.2/2.4.3/2.4.4/2.4.5/2.5.1/2.5.2/ 2.5.3/3.1.1/3.1.2/3.1.3/3.1.4/3.1.5/3.1.6/	Lectures, E-learning, practical training and case study	Written, practical and oral exams
Week # 10	Ascaris lumbricoides, Enterobius vermicularis and visceral larva migrans.	3.1.7/3.1.8/3.1.9/3.1.10 /3.1.11/3.1.12/3.1.13/3.1.14/ 4.1.1 /4.1.2/4.2.3/4.2.4/4.2.5/4.2.6/4.2.7	Lectures, E-learning and practical training	Written, practical and oral exams
Week # 11	Blood and tissue nematodes	4.3.1/4.3.2/4.3.3/4.3.4/4.3.5/4.3.6/4.3.7	Lectures, E-learning, practical training, seminars and case study	Written, practical and oral exams

Week # 12	Introduction and Classification of viruses	1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10 , 1.1.11 ,1.1.12,1.1.13,/1.1.14/1.1.15/	Lectures, E-learning, practical training and class activity	Written, practical and oral exams
Week # 13	Cultivation of viruses, Clinical & laboratory diagnosis of virla infections	1.1.16/2.1.1/2.1.2/2.1.3/2.1.4/2.4.1	Lectures , E-learning, practical training ,virtual lab and assignment	Written, practical and oral exams
Week # 14	diseases caused by DNA viruses	2.4.2/2.4.3/2.4.4/2.4.5/2.5.1/2.5.2/2.5.3 /3.1.1/3.1.2/3.1.3/3.1.4/3.1.5/3.1.6/	Lectures , E-learning, virtual lab and assignment	Written and oral exams
Week # 15	diseases caused by RNA viruses	3.1.7/3.1.8/3.1.9/3.1.10/3.1.11 /3.1.12/3.1.13/3.1.14/ 4.1.1/4.1.2/4.2.3/4.2.4/4.2.5/4.2.6/4.2.7	Lectures , E-learning and seminars	Written and oral exams

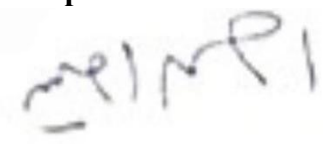
Name and Signature
Course Coordinator

Prof .Ramadan Eldomany



Name and Signature
Program Coordinator

Assistant prof .Ahmed Amin Ali



Kafrelsheikh University

Faculty of Pharmacy

جامعة كفر الشيخ

كلية الصيدلة

Course Specification

(2025)

1. Basic Information

Course Title (according to the bylaw)	Pharmaceutical Dosage Forms III			
Course Code (according to the bylaw)	PT 505			
Department/s participating in delivery of the course	Pharmaceutics and Pharmaceutical Technology			
Number of credit hours/points of the course (according to the bylaw)	Theoretical	Practical	Other (specify)	Total
	2	1	-------	3
Course Type	compulsory			
Academic level at which the course is taught	Third level, Semester (1)			
Academic Program	Bachelor of pharmacy (Pharm D) (Clinical Pharmacy)			
Faculty/Institute	Faculty of pharmacy			
University/Academy	kafrelsheikh university			
Name of Course Coordinator	Prof. Abdelaziz Elsayed Ass. Prof. Eman Mazyed			
Course Specification Approval Date	9/2025			
Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)	Department council			

2. Course Overview (Brief summary of scientific content)

The course introduces the students to the kinetics of drug decomposition including rate and order of the reaction, determination of the half-life, expiry date and shelf-life by different methods, stability testing, and in-vitro possible drug/excipients interactions. It also describes the principles and techniques involved in the formulation, and manufacturing of solid dosage forms including powders, granules, tablets, capsules and suppositories.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
Domain 1 (FUNDAMENTAL KNOWLEDGE) 1-1- COMPETENCY		**Upon finishing this course, students will be able to integrate knowledge from basic pharmaceutical science to determine different types of tablets, capsules, granules and suppositories. The student will also be able to list different methods of preparation of capsules and tablet, suppositories and quality control tests of tablet, suppositories and capsules.** **This competency will be developed via the following key elements:**	
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	**1.1.1**	Discuss different types of tablets, granules, capsules and suppositories.
		1.1.2	Recognize different Methods of preparation of tablet, suppositories and capsules.
		1.1.3	Describe Tablet coating – sugar, film, and functional coating.
		1.1.4	List processing problems in tablet manufacture
		1.1.5	Recognize General considerations in the design of hard capsules

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
		1.1.6	Classify different types of suppositories.
		1.1.7	Recognize the kinetics of drug decomposition including rate and order of the reaction.
		1.1.8	Determine the half-life, expiry date and shelf-life by different methods.
1.1.3	Integrate knowledge from fundamental sciences to handle, identify, extract, design, prepare, analyze, and assure quality of synthetic/natural pharmaceutical materials/products.	**1.1.9**	Select suitable method of preparation of tablets, granules and capsules and identify challenges in their preparation.
		1.1.10	Review the role of formulation design and additives in modifying the elegancy and appearance of tablets and capsules.
		1.1.11	List quality control test of tablets and capsules.
		1.1.12	Discuss the factors affecting stability of capsules, suppositories and tablets.
DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE 2-2- COMPETENCY		**Upon finishing this course, students will be able to calculate powder flow by measuring angle of repose, carr index and hausner ratio. The student will be also able to formulate and manufacture different tablets, suppositories and granules and participate in systems for dispensing, storage, and distribution of them.** **This competency will be developed via the following key elements:**	
2.2.1	Isolate, design, identify, synthesize, purify, analyze, and standardize synthetic/natural pharmaceutical materials.	**2.2.1**	Formulate and prepare tablets, capsules, and suppositories according to good pharmaceutical practices.
		2.2.2	Perform standard quality control tests (e.g., weight variation, hardness, disintegration, dissolution, uniformity) to ensure product safety and efficacy.
		2.2.3	Design and adjust formulations considering patient needs and therapeutic requirements

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
2.2.2	Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/products considering various incompatibilities.	**2.2.4**	Apply the rules of manufacturing, storage and transportation of tablet, suppositories, granules and capsules.
		2.2.5	Understand General considerations in the design of hard capsules.
		2.2.6	Select the best additives for solving tablet problem.
		2.2.7	Recognize factors affecting flow of solid dosage form and incompatibility problems.
		2.2.8	Demonstrate commitment to professional ethics and safety measures during pharmaceutical preparation.
2.2.3	Recognize the principles of various tools and instruments and select the proper techniques for synthesis and analysis of different materials and production of pharmaceuticals.	**2.2.9**	Recognize different instrument for preparation of tablet, capsules and suppositories.
		2.2.10	Select suitable machine for tablet and capsule coating.
		2.2.11	Assess the quality of tablet, capsules and suppositories.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and biopharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	**2.2.12**	Recognize principles of pharmaceutical calculation for preparation of tablet and determination of powder flow.
		2.2.13	Recognize recent knowledge in pharmaceutical technology to design tablets, capsules and suppositories.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
2-3- COMPETENCY		**Upon finishing this course, students will be able to handle and dispose synthetic/natural pharmaceutical materials used in measuring powder flow and preparation of tablets, suppositories and granules effectively and safely with respect to relevant laws and legislations.** **This competency will be developed via the following key elements:**	
2.3.1	Handle, identify, and dispose biologicals, synthetic/natural materials, biotechnology-based and radio-labeled products, and other materials/products used in pharmaceutical fields.	**2.3.1**	Safely handle different chemicals used in preparation of tablets, capsules, granules and suppositories to avoid harm to the students.
2.3.2	Recognize and adopt ethical, legal, and safety guidelines for handling and disposal of biological, and pharmaceutical materials/products.	**2.3.2**	Recognize and adopt MSDS safety guidelines for safe and appropriate handling and disposal of pharmaceutical chemical materials.
		2.3.3	Demonstrate the safe use and storage of tablets, suppositories and capsules to the patient.
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 individuals and communities.** **This competency will be developed via the following key elements:**	
		4.2.1	Perform presentation on the tablets, granules, capsules and suppositories and their benefits.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	**4.2.2**	Evaluate and apply effective presentation skills through modern technologies and digital media to deliver impactful and engaging experiences. This involves utilizing interactive slides, integrating multimedia elements such as videos, images, and audio, and adopting real-time feedback and collaboration tools.

4. Teaching and Learning Methods

1- Lectures **(√)**

2- E-learning **(√)**

3- Practical training/ laboratory **(√)**

4- Discussion, Brainstorming **(√)**

5- Seminars **(√)**

6- Assignment **(√)**

7- Case study **(√)**

Course Schedule						
Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Theoretical teaching (lectures/ discussion groups/ .....)	**Training (Practical/ Clinical/ .....)**	**Self-learning (Tasks/ Assignments / Projects/ ...)**	**Other (to be determined)**
1	Introduction Tablets Types of tablets	**4**	**2**	**2**	**---------**	**---------**
2	Tablet additives	**4**	**2**	**2**	**---------**	**---------**
3	Methods of tablet manufacture	**4**	**2**	**2**	**---------**	**---------**
4	Methods of tablet manufacture (cont.)	**4**	**2**	**2**	**---------**	**---------**
5	Processing problems in tablet manufacture	**4**	**2**	**2**	**---------**	**---------**
6	Tablet evaluation	**4**	**2**	**2**	**---------**	**---------**
7	**Periodical exam**					
8	Tablet coating – sugar, film, and functional coating	**4**	**2**	**2**	**---------**	**---------**
9	Introduction – granuleation: Types of granules	**4**	**2**	**2**	**---------**	**---------**
10	suppositories: Types and methodsof preperation of **suppositories.**	**4**	**2**	**2**	**---------**	**---------**
11	Introduction to capsules	**4**	**2**	**2**	**---------**	**---------**
12	General considerations in the design of hard capsules.	**4**	**2**	**2**	**---------**	**---------**
13	General considerations in the design of hard capsules and microencapsulation.	**4**	**2**	**2**	**---------**	**---------**

14	Storage and packing of capsules Quality control tests for capsules	**4**	**2**	Practical exam	---------	---------
15	kinetics of drug decomposition including rate and order of the reaction.	**4**	**2**	Practical exam	---------	---------

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks
1	Formative exam	9	Training	----
2	Periodical exam	7	15	15%
3	Final Practical/Clinical/… Exam	14,15	15	15%
4	Final written exam	16,17	50	50%
5	Final Oral Exam	16,17	10	10%
6	Assignments / Project /Portfolio/ Logbook	11,12	10	10%

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.)	**The main (essential) reference for the course**	- Michael E. Aulton, Aulton's Pharmaceutics: The Design and Manufacture of Medicines, Kevin Taylor, Fifth Edition, 2007. - Tovey GD, editor. Specialised pharmaceutical formulation: the science and technology of dosage forms. Cambridge: Royal Society of Chemistry; 2022. - Nayak AK, Sen KK, editors. Dosage forms, formulation developments and regulations: recent and future trends in pharmaceutics. Volume 1. Singapore: Springer; 2023.
	Other References	Notes and Lab manual prepared by the department staff.
	Electronic Sources (Links must be added)	www.pubmed.com www.sciencedirect.com
	Learning Platforms (Links must be added)	https://lms3.kfs.edu.eg/pharm/login/index.php

Supportive facilities & equipment for teaching and learning	**Devices/Instruments**	Laboratory facilities (Equipment of factory).
	Supplies	Water bath, digital balances and other lab instruments
	Electronic Programs	----
	Skill Labs/ Simulators	----
	Virtual Labs	----
	Other (to be mentioned)	Data show, smart board, Unit for distance learning, Computers, Internet and Library.

Course Plan

Matrix of course learning outcomes CLOs – Teaching and Learning Strategy and Student Assessment

Course title: Pharmaceutical Dosage Forms III **Course code: PT 505**

Course Contents		Key elements	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction – Tablets: Types of tablets	1.1.1, 1.1.7, 2.2.1, 2.2.2, 2.2.5, 2.2.6, 2.2.9, 2.2.10, 2.3.2, 4.2.1	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 2	Tablet additives	1.1.8, 2.2.4, 2.3.1, 4.2.2.	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 3	Methods of tablet manufacture	1.1.2, 1.1.7,1.1.8, 2.2.1, 2.2.2, 2.2.5, 2.2.6, 2.2.9, 2.2.10, 2.3.1, 4.2.1.	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 4	Methods of tablet manufacture (cont.)	1.1.2, 1.1.7,1.1.8, 2.2.1, 2.2.2, 2.2.5, 2.2.6, 2.2.9, 2.2.10, 2.3.1, 4.2.1.	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 5	Processing problems in tablet manufacture	1.1.4, 1.1.6, 1.1.9, 2.2.11, 2.2.13, 2.3.2, 4.2.2.	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 6	Tablet evaluation	1.1.10, 1.1.11, 2.2.7, 2.2.8, 2.2.10, 2.2.11, 2.3.2,2.3.3, 4.2.1.	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 7	**Periodical exam**			
Week # 8	Tablet coating – sugar, film, and functional coating	1.1.10.1.1.11, 1.1.12, 1.1.13, 2.2.6, 2.2.7, 2.2.9.	Lectures, E-learning, practical training and class activities	Written, practical and oral exams

Week # 9	Introduction – granuleation: Types of granules	1.1.1,1.1.7, 2.2.1, 2.2.2, 2.3.2,2.3.3, 4.2.1,4.2.2	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 10	suppositories: Types and methodsof preperation of **suppositories.**	1.1.1, 1.1.2, 1.1,6, 1.1.10, 1.1.12, 2.2.1, 2.2.2, 2.2.8, 2.2.10, 2.3.3, 4.2.1, 4.2.2.	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 11	Introduction to capsules	1.1.1, 1.1.2, 1.1.7, 2.2.6, 2.2.7, 2.2.8. 2.2.11.	Lectures, E-learning, practical training and class activities	Written, practical and oral exams
Week # 12	Introduction to capsules	1.1.7, 2.2.6, 2.2.7, 2.2.10, 4.2.1.	Lectures, E-learning, practical training, seminars and class activities	Written, practical and oral exams
Week # 13	General considerations in the design of hard capsules.	1.1.5, 1.1.8, 1.1.13, 2.2.3, 2.2.6, 2.2.7, 2.2.8. 2.2.11, 2.2.12.	Lectures, E-learning, seminars and practical training	Written, practical and oral exams
Week # 14	Storage and packing of capsules Quality control tests for capsules	2.2.1, 2.2.3, 2.2.8, 2.2.11.2.2.13, 2.3.2,2.3.3, 4.2.2	Lectures and E-learning	Written, practical and oral exams
Week # 15	kinetics of drug decomposition including rate and order of the reaction.	1.1.9, 1.1.10 2.3.2, 2.3.3, 2.2.8, 2.2.11.2.2.13.	Lectures and E-learning	Written and oral exams

Name and Signature
Course Coordinator
Prof. Abdelaziz Elsayed
Ass. Prof. Eman Mazyed

Name and Signature
Program Coordinator
Ass. Prof. Ahmed Amin

Course Specification
(2025)

1. Basic Information

Course Title (according to the bylaw)	Phytochemistry I			
Course Code (according to the bylaw)	PG 504			
Department/s participating in delivery of the course	Pharmacognosy department			
Number of credit hours/points of the course (according to the bylaw)	Theoretical	Practical	Other (specify)	Total
	2	1		3
Course Type	compulsory			
Academic level at which the course is taught	Third level, semester1			
Prerequisite	Registration			
Academic Program	Bachelor of Pharmacy (Pharm D) (clinical pharmacy)			
Faculty/Institute	Faculty of Pharmacy			
University/Academy	Kafrelsheikh University			
Name of Course Coordinator	Dr. Abdullah A. Elgazar Dr. Mai H. Elnaggar			
Course Specification Approval Date	9/2025			
Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)	Department council			

2. Course Overview (Brief summary of scientific content)

Based on complementary medicine and Egyptian medicinal plants that can be used as natural extracts, bioactive raw materials and phytochemical standards to serve the pharmaceuticals, cosmetics and food industries in Egypt. The course aims to provide students with the knowledge and skills that enable them to understand, describe and deal with the chemistry of volatile oils, resins, miscellaneous terpenoids, bitters of plant or animal origin, carbohydrates and glycosides of plant or animal origin and different techniques used for their preparation, identification and determination. Also, the students should become aware of different chromatographic methods used for isolation and analysis of different plant constituents and their pharmacological actions and medicinal uses.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
Domain 1 (FUNDAMENTAL KNOWLEDGE) **1-1- COMPETENCY**		**Upon finishing this course, students will be able to integrate knowledge from Complementary medicine and Egyptian medicinal plants that can be used as natural extracts, bioactive raw materials, and phytochemical standards to serve the pharmaceuticals, cosmetics, and food industries in Egypt.** **This competency will be developed via the following key elements:**	
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1	Show understanding of classification of phytochemicals and nutraceutcals such as glycoside, volatile oil and carbohydrates in the context of functional group analysis and organic chemistry.
		1.1.2	Recognize Egyptian medicinal plants containing volatile oils, carbohydrates, glycosides, and bitters principals of plant or animals that can be used as natural extracts.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
	Integrate knowledge from fundamental sciences to handle, identify, extract, design, prepare, analyze, and assure quality of synthetic/natural pharmaceutical materials/products.	**1.1.3**	Identify bioactive raw materials, and phytochemical standards to serve the pharmaceuticals, cosmetics, and food industries in Egypt.
1.1.3		**1.1.4**	Describe the chemistry of volatile oils, glycosides, and bitters principals of plant or animals.
		1.1.5	Discuss qualitative and quantitative analysis of medicinal plants, active constituents as well as the methods of handling, identification, isolation, and purification.
		1.1.6	Summarize the pharmaceutical uses of volatile oils, carbohydrates, glycosides, and bitters principals of plant or animals.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	**1.1.7**	Explain the basics of complementary medicine and relate the phytochemical profile of Egyptian medicinal plants to their therapeutic effects, safety, and potential pharmaceutical applications.
		1.1.8	Identify and describe the chemistry, pharmaceutical uses, and handling procedures of volatile oils, carbohydrates, glycosides, and bitters from plant or animal sources
		1.1.9	Infer appropriate qualitative and quantitative analytical methods for the identification, isolation, purification, and quantification of active constituents from medicinal plants
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems	**1.1.10**	Retrieve and interpret phytochemical and pharmacological data of medicinal plants to address therapeutic need
		1.1.11	Correlate the chemical composition of volatile oils, carbohydrates, glycosides, and bitters with their potential pharmacological effects and safety profile

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
		1.1.12	Apply knowledge of natural products' chemistry and analysis to propose suitable herbal interventions for specific therapeutic problem
1.1.6	**Utilize scientific literature and collect and interpret information to enhance professional decisions.**	**1.1.13**	Apply suitable methods for isolation of different classes of phytochemicals such volatile oils, carbohydrates, glycosides, and bitters principals of plant or animals.
		1.1.14	Carry out different methods of purification of different phytochemicals
		1.1.15	Prepare quantification of volatile oils, carbohydrates, glycosides, and bitters principals of plant or animal
1.1.7	Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care	**1.1.16**	Identify newly emerging trends and challenges in the natural products and herbal medicines sector affecting the pharmaceutical industry
		1.1.17	Analyze the scientific, regulatory, and safety aspects of recent developments in pharmacognosy and phytopharmaceutical product
		1.1.18	Evaluate the potential impact of new technologies in preparation and delivery of phytochemicals on patient health care and public safety
DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE **2-2- COMPETENCY**		Upon finishing this course, students will be able to standardize pharmaceutical materials, and participate in systems for dispensing, storage, and distribution of medicines. This competency will be developed via the following key elements:	
2.2.1	Isolate, design, identify, synthesize, purify, analyze, and standardize synthetic/natural pharmaceutical materials.	**2.2.1**	Conduct isolation and identification of volatile oils, carbohydrates, glycosides, and bitters principals of plant or animals

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
		2.2.2	Carry out synthetic strategies for preparation of glycosides and its aglycone
		2.2.3	Apply different methods of purification of volatile oils and carbohydrates
2.2.2	Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/ products considering various incompatibilities.	**2.2.4**	Address the quality parameters required for raw herbal materials and phytopharmaceutical compounds.
		2.2.5	Implement quality assurance procedures during extraction, processing, and packaging of herbal products.
2.2.3	Recognize the principles of various tools and instruments and select the proper techniques for synthesis and analysis of different materials and production of pharmaceuticals.	**2.2.7**	Identify the operating principles and appropriate applications of analytical tools used in the isolation and characterization of bioactive natural products.
		2.2.8	Select suitable purification techniques to obtain high-purity active constituents from crude natural sources.
		2.2.9	Recognize the quality and standardization of isolated phytochemicals using validated pharmacognostic and instrumental methods.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and biopharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice	**2.2.10**	Apply pharmaceutical calculations and basic biostatistical methods to analyze data related to natural products research and quality control

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
2-3- COMPETENCY		**Upon finishing his course, students will be able to handle synthetic/natural pharmaceutical materials/products effectively and safely with respect to relevant laws and legislations.** **This competency will be developed via the following key elements:**	
2.3.1	Handle, identify, and dispose biologicals, synthetic/natural materials, biotechnology-based and radio-labeled products, and other materials/products used in pharmaceutical fields.	**2.3.1**	Demonstrate safe handling techniques for crude drugs, herbal extracts, and laboratory chemicals used in pharmacognosy.
		2.3.2	Identify hazards and risk factors associated with biological, natural, synthetic, and biotechnology-based materials.
		2.3.3	Apply proper disposal procedures for different pharmaceutical materials in compliance with institutional and environmental regulation
2.3.2	Recognize and adopt ethical, legal, and safety guidelines for handling and disposal of biologicals, and pharmaceutical materials/products.	**2.3.4**	Identify the physicochemical properties and hazard categories of volatile oils, carbohydrates, glycosides, and bitters from plant or animal sources.
		2.3.5	Manipulate chemical, pharmaceutical, and biological materials following ethical, legal, and safety protocols.
		2.3.6	Follow approved Material Safety Data Sheet (MSDS) guidelines for handling, storage, and disposal of pharmaceutical substance
2-5- Competency		**Upon finishing his course, students will be able to contribute to pharmaceutical research studies and clinical trials needed to authorize medicinal products.** **This competency will be developed via the following key elements**	
2-5-1 Fulfill the requirements of the regulatory framework to authorize a medicinal product		2.5.1	Apply compendial regulations in the documentation and approval process for phytopharmaceutical products

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
including quality, safety, and efficacy requirements.		2.5.2	Conduct qualitative and quantitative analytical methods for natural products in compliance with pharmacopoeial and regulatory standards.
		2.5.3	Evaluate the safety, quality, and efficacy profiles of herbal preparations according to national and international guidelines.
2-5-3 Contribute in planning and conducting research studies using appropriate methodologies.		2.5.4	Analyze and interpret research data to draw valid conclusions and propose recommendations for the natural products industry
		2.5.5	Retrieve relevant scientific information from databases and literature to support natural products research.
		2.5.6	Design and conduct experimental or clinical research studies in the field of pharmacognosy using appropriate methodologies.
Domain 3: Pharmaceutical Care **3-2- competency**		**Upon finishing his course, students will be able to provide counseling and education services to patients and communities about safe and rational use of complementary medicine.** **This competency will be developed via the following key elements**	
3-2-3 Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals.		**3.2.1**	Evaluate scientific evidence supporting the use of Carbohydrate, glycoside, Volatile oil-based therapies to ensure safety and efficacy
		3.2.2	Select appropriate over-the-counter preparations containing phytochemicals under the study based on patient symptoms.
		3.2.3	Counsel patients and healthcare professionals on the safe and effective use of aromatherapy, and nutraceuticals.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
3-2-4	Provide information about toxic profiles of drugs and other xenobiotics including sources, identification, symptoms, and management control.	**3.2.4**	Manage and recommend appropriate control measures for toxicity symptoms resulting from exposure to phytochemical under investigations.
		3.2.5	Apply drug information data to predict the toxicity of natural products.
		3.2.6	Identify the source of toxicity and relate it to specific plant constituents or contaminants.
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 individuals and communities.** **This competency will be developed via the following key elements:**	
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	**4.2.1**	Prepare clear and well-structured presentations on pharmacognosy-related topics using recent digital tools
		4.2.2	Demonstrate effective verbal and visual communication skills when presenting scientific content.
		4.2.3	Utilize modern media platforms and presentation software to engage the audience and convey information accurately

4. Teaching and Learning Methods

1- Lectures

3- E-learning

4- Practical training/ laboratory

5- Brain storming

6- Case study

7- Discussion

8- Assignment

9- Presentation

Course Schedule

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	Training (Practical /Clinical/ .....)	Self-learning (Tasks/ Assignments/ Projects/ ...)	Other (to be determined)
1	Volatile extraction	4	2	2		
2	Hydrocarbons	4	2	2		
3	Alcohols	4	2	2		
4	Phenols	4	2	2		
5	Esters	4	2	2		
6	Aldehydes & ketones	4	2	2		
7	**Periodical exam**					
8	N- and S- containing compounds	4	2	2		
9	Carbohydrates:	4	2	2		

	Introduction, classification.					
10	Carbohydrates: Simple natural sugars of medicinal value	**4**	**2**	**2**		

Number of the Week	**Scientific content of the course (Course Topics)**	**Total Weekly Hours**	**Expected number of the Learning Hours**			
			Theoretical teaching (lectures/discussion groups/ .....)	**Training (Practical /Clinical/ .....)**	**Self-learning (Tasks/ Assignments/ Projects/ ...)**	**Other (to be determined)**
11	Carbohydrates: Polysaccharides: starch, cellulose, agar etc.	**4**	**2**	**2**		
12	Bitter principles: phenolic, ether,sesquiterpene lactone, isoflavone, furanochromones and furanocoumarins	**4**	**2**	**2**		
13	Glycosides: Cardiac	**4**	**2**	**2**		
14	Glycosides: Anthraquinone, Flavonoid,	**2**	**2**	**Practical exam**		
15	Glycosides: saponin, cyanogeneticand thioglycosides.	**2**	**2**	**Practical exam**		

5. Methods of students' assessment

No.	**Assessment Methods** *	**Assessment Timing (Week Number)**	**Marks/ Scores**	**Percentage of total course Marks**
1	Formative exam	Week 6 and 14	--	
2	Periodical exam	Week 7	15	
3	Final Written Exam	Week 16 &17	50	
4	Final Practical/Clinical/… Exam	Week 14 & 15	15	
5	Final Oral Exam	Week 16 &17	10	

6	Assignments / Project /Portfolio/ Logbook	All semester	10	

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The main (essential) reference for the course** (must be written in full according to the scientific documentation method)	- Ganora, L. (2021). *Herbal constituents: Foundations of phytochemistry* (2nd ed.). Herbalchem Press. - Rajendran, J. L., & Raman, D. (2022). *Experimental pharmacognosy-I: Pharmacognosy and phytochemistry*. Pharma Publications. - Egbuna, C., Ifemeje, J. C., & others. (2021). *Phytochemistry: Volume 3: Marine sources, industrial applications, and recent advances*. Springer.
	Other References	- E-Notes on phytochemistry prepared in the form of a book authorized by thedepartment staff. Lab Manual of phytochemistry prepared and distributed by the Department
	Electronic Sources (Links must be added)	websites https://apps.who.int/medicinedocs/en/m/abstract/Js14213e/ www.biomedcentral.com www.medscape.com http://www.sciencedirect.com/ http://www.ncbi.nlm.nih.gov/
	Learning Platforms (Links must be added)	https://lms3.kfs.edu.eg/pharm/login/index.php
	Other (to be mentioned)	
Supportive facilities & equipment for	**Devices/Instruments**	Laboratory facilities.
	Supplies	Hot plates, digital balances and other lab instruments
	Electronic Programs	----

teaching and learning *	**Skill Labs/ Simulators**	**----**
	Virtual Labs	**----**
	Other (to be mentioned)	Data show, smart board, Unit for distance learning, Computers, Internet and Library.

Name and Signature **Course Coordinator**	**Name and Signature** **Program Coordinator**

Course Specification

(2025)

Course Title (according to the bylaw)	**Community Pharmacy Practice**			
Course Code (according to the bylaw)	**PP 501**			
Department/s participating in delivery of the course	**Clinical pharmacy department**			
Number of credit hours/points of the course (according to the bylaw)	**Theoretical**	**Practical**	**Other (specify)**	**Total**
	2	**1**	**----**	**3**
Course Type	**Compulsory**			
Academic level at which the course is taught	**Third level**			
Academic Program	**BSc in pharmacy (pharm-D clinical)**			
Faculty/Institute	**Faculty of Pharmacy**			
University/Academy	**Kafrelshiekh University**			
Name of Course Coordinator	**Associate. Prof. Noha Mahmoud El-Khodary**			
Course Specification Approval Date	**31/8/2025**			
Course Specification Approval	**Department Counsil**			

2. Course Overview (Brief summary of scientific content)

This course covers the clinical situations that can be handled by the pharmacist in the community pharmacy (referral or using OTC medications) including upper respiratory tract, gastrointestinal, and musculoskeletal symptoms, skin, eyes, and ears, and childhood symptoms.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
Domain 1 (FUNDAMENTAL KNOWLEDGE) **1-1- COMPETENCY**		**Upon finishing this course, students will be able to:** Integrate knowledge from pharmaceutical, biomedical, and clinical sciences to design and implement patient-centered services in community pharmacy settings, including the selection, recommendation, and safe use of over the counter (OTC) medicines, ensuring effective and ethical care for individuals and the wider community. **This competency will be developed via the following key elements:**	
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	**1.1.1**	Apply multidisciplinary knowledge to provide patient-centered pharmaceutical care in community settings.
		1.1.2	Integrate social, behavioral, and administrative sciences to improve patient engagement and pharmacy services.
		1.1.3	Relate biomedical and clinical sciences to the safe preparation, dispensing, and monitoring of medicines.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their	**1.1.4**	Explain the mechanism of action of medicines to support effective patient counseling and education.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
	appropriateness, effectiveness, and safety in individuals and populations.	**1.1.5**	Assess the appropriateness and safety of medications for diverse patient groups in a community setting.
		1.1.6	Apply pharmacological and therapeutic principles to ensure optimal treatment outcomes.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	**1.1.7**	Search and select relevant drug and disease information from trusted scientific sources.
		1.1.8	Apply retrieved information to address drug-related problems and optimize therapy.
		1.1.9	Adapt scientific knowledge to practical solutions for community pharmacy challenges.
1.1.6	Utilize scientific literature and collect and interpret information to enhance professional decisions.	**1.1.10**	Collect and interpret patient data to guide medicine selection and counseling.
		1.1.11	Incorporate literature findings into daily decision-making in community pharmacy services.
1.1.7	Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care.	**1.1.12**	Monitor trends in medicine supply, regulation, and public health that affect community pharmacy operations.
		1.1.13	Evaluate the impact of new health issues on medication use, safety, and accessibility.
DOMAIN 2: PROFESSIONAL AND ETHICAL PRACTICE **2-1- COMPETENCY**		**Upon finishing this course, students will be able:** 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:**	
2.1.1	Perform responsibilities and authorities in compliance with the legal and professional structure and role of all members of the health care professional team.	**2.1.1**	Apply national pharmacy laws, regulations, and professional standards in all community pharmacy activities.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	**2.1.2**	Maintain patient confidentiality and privacy in all pharmacy transactions.
		2.1.3	Provide equitable pharmaceutical care that respects cultural, social, and personal diversity.
		2.1.4	Uphold ethical principles in medication dispensing, counseling, and decision-making.
2.1.3	Recognize your own personal and professional limitations and accept the conditions of referral to or guidance from other members of the health care team.	**2.1.5**	Identify situations that require referral to a physician or specialist for safe patient management.
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 within the community pharmacy. **This competence will be developed via the following key elements:**	
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and biopharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	**2.2.1**	Apply pharmaceutical calculations to accurately prepare, dispense, and adjust medication doses in community pharmacy practice.
		2.2.2	Utilize bioequivalence concepts and emerging drug delivery technologies to guide generic substitution and patient counseling.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
2-5- COMPETENCY		**Upon finishing this course, students will be able to** contribute to pharmaceutical research studies and clinical trials needed to authorize medicinal products. **This competency will be developed via the following key elements:**	
2.5.1	Fulfill the requirements of the regulatory framework to authorize a medicinal product including quality, safety, and efficacy requirements.	**2.5.1**	Counsel patients on the safe and appropriate use of medicines in accordance with regulatory guidelines.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession	**2.5.2**	Use trusted databases and scientific resources to gather relevant drug and disease information.
		2.5.3	Critically appraise the quality of clinical evidence to support professional decisions in community pharmacy practice.
		2.5.4	Integrate evidence-based findings into patient counseling, medicine selection, and therapeutic problem-solving.
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 within community pharmacy. **This competency will be developed via the following key elements:**	
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	**3.1.1**	Recognize clinical features that guide the selection of the most appropriate OTC products.
		3.1.2	Provide evidence-based counseling on correct OTC product use, expected outcomes, and safety precautions to support effective and responsible self-care.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
3-2- COMPETENCY		**Upon finishing this course, students will be able to** Provide counselling 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:**	
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1	Counsel patients on correct drug use by explaining mechanisms of action, therapeutic uses, and appropriate dosing in accessible language.
		3.2.2	Identify and prevent medication-related problems, including contraindications, adverse reactions, and potential interactions, during dispensing.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.3	Monitor and report adverse drug reactions and medication errors observed in community pharmacy practice.
		3.2.4	Use clinical pharmacology principles to optimize therapy outcomes for walk-in patients and those with chronic conditions.
3.2.3	Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals.	3.2.5	Recognize symptoms of drug toxicity and poisoning that require urgent referral from a community pharmacy setting.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
3.2.4	Provide information about toxic profiles of drugs and other xenobiotics including sources, identification, symptoms, and management control.	3.2.6	Provide first-aid advice and safety information to reduce the risk of exposure to toxic substances.
3.2.5	Educate and counsel patients, other health care professionals, and communities about safe and proper use of medicines including OTC preparations and medical devices.	3.2.7	Provide individualized counselling on prescription and OTC medicines, including correct dosage, administration, and potential side effects.
		3.2.8	Demonstrate proper use and maintenance of common medical devices (e.g., inhalers, glucometers, blood pressure monitors).
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.9	Deliver community health education sessions to promote rational and safe medicine use.
		3.2.10	Educate patients and the public about the risks and consequences of prescription and OTC drug misuse.
		3.2.11	Collaborate with healthcare providers and local authorities to detect, report, and address cases of drug misuse.
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 teamwork, creativity and entrepreneurial skills. **This competency will be developed via the following key elements:**	
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1	Work with classmates to complete projects or assignments on time and to a high standard.
		4.1.2	

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
			Use critical thinking to solve practical problems in case studies or class projects.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.3	Create new ideas for pharmacy services or health awareness projects.
		4.1.4	Present a simple project to classmates, showing creativity and good organization.
4.1.3	Demonstrate creativity and apply entrepreneurial skills within a simulated entrepreneurial activity		
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:**	
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care teams, patients, and communities	4.2.1	Speak clearly and confidently when explaining medicine use to patients or discussing with healthcare professionals.
		4.2.2	Use respectful and professional body language when interacting with others.
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.3	Prepare professional presentations using tools like PowerPoint, Canva, or Prezi.
		4.2.4	Use visuals, videos, or interactive tools to make information more engaging.
4-3- COMPETENCY		**Upon finishing this course, students will be able to** express self-awareness and be a life-long learner for continuous professional improvement. **This competency will be developed via the following key elements:**	
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1	Identify personal strengths and areas for improvement in patient care, communication, and pharmacy practice skills and set specific,

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
			achievable goals to enhance academic and professional abilities.
		4.3.2	Use feedback and self-reflection to make continuous progress throughout the course, ensuring ongoing growth as a future community pharmacist.
4.3.2	Practice independent learning is needed for continuous professional development.	4.3.3	Search for and study new information about medicines, diseases, and pharmacy practice on your own by using online courses, books, and research articles to stay updated on the profession.

4. Teaching and Learning Methods

.1- **Lectures** (√)

2- **E-learning** (√)

3- **Practical training** (√)

4- **Discussion** (√)

5- **Brainstorming** (√)

6- **Assignments** (√)

7- **Case study** (√)

8- **Seminars** (√)

Course Schedule

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	Training (Practical/Clinical/ .....)	Self-learning (Tasks/ Assignments/ Projects/ ...)	Other (to be determined)
1	Introduction to Community Pharmacy & Steps of Patient Counseling	**4**	**2**	**2**	---	---
2	Mouth Ulcers	**4**	**2**	**2**	---	---
3	Heartburn & Dyspepsia	**4**	**2**	**2**	---	---
4	Nausea & Vomiting	**4**	**2**	**2**	---	---
5	Diarrhea	**4**	**2**	**2**	---	---
6	Constipation	**4**	**2**	**2**	---	---
7	**Periodical exam**					
8	Hemorrhoids	**4**	**2**	**2**	---	---
9	Intestinal Gas	**4**	**2**	**2**	---	---
10	Colds & Allergic Rhinitis	**4**	**2**	**2**	---	---
11	Cough	**4**	**2**	**2**	---	---
12	Musculoskeletal Pain	**4**	**2**	**2**	---	---
13	Diaper rash	**4**	**2**	**2**	---	---
14	Skin Hyperpigmentation	**2**	**2**	**Practical exam**		
15	Minor Burns & Sunburn	**2**	**2**	**Practical exam**		

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks
1	Periodical exam	**Week 7**	**10 marks**	**10%**

2	Quizzes / formative exam	**Week 4. 8.12**	**5 marks**	**5%**
3	Final Practical Exam	**Week 14,15**	**15 marks**	**15%**
4	Assignments / Project / Logbook	**All semester long**	**10 marks**	**10%**
5	Final Written Exam	**Week 16,17**	**50 marks**	**50%**
6	Final Oral Exam	**Week 16,17**	**10 marks**	**10%**

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The main (essential) reference for the course**	DiPiro, J. T., Yee, G. C., Haines, S. T., Nolin, T. D., Ellingrod, V., & Posey, L. M. (Eds.). (2023). *Pharmacotherapy: A pathophysiologic approach* (12th ed.). McGraw-Hill Education. Blenkinsopp, A., Duerden, M., & Blenkinsopp, J. (2025). *Symptoms in the pharmacy: A guide to the management of common illnesses and disease prevention* (10th ed.). Wiley.
	Other References	**Lecture notes** on community pharmacy practice prepared by department of clinical pharmacy. **Practical notes** on community pharmacy practice prepared by department of clinical pharmacy.
	Electronic Sources	www.biomedcentral.com www.medscape.com http://www.sciencedirect.com/ http://www.ncbi.nlm.nih.gov/ http://www.FDA.gov
	Learning Platforms	https://lms3.kfs.edu.eg/pharm/login/index.php
	Other	Koda-Kimble, M. A., & Young, L. Y. (Eds.). (2024). *Applied therapeutics: The clinical use of drugs* (12th ed.). Wolters Kluwer. Krinsky, D. L., Ferreri, S. P., Hemstreet, B. A., Hume, A. L., Rollins, C. J., & Tietze, K. J. (Eds.). (2021). *Handbook of Nonprescription Drugs: An Interactive*

		Approach to Self-Care (20th ed.). American Pharmacists Association.
Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	**- Data show.** **- Computers.** **–Library.** **–Internet.** **-Interactive boards.**
	Supplies	**Classrooms.** **Educational pharmacy**
	Electronic Programs	**/https://www.mdcalc.com**
	Skill Labs/ Simulators	**Educational pharmacy**

Course Plan

Matrix of course learning outcomes CLOs – Teaching and Learning Strategy and Student Assessment

Course title: Community Pharmacy Practice

Course code: PP501

Week	Topic	Key Elements	Teaching & Learning Methods	Student Assessment Methods
1	Introduction to Community Pharmacy & Steps of Patient Counseling	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 1.1.11, 1.1.12, 1.1.13, 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 4.2.1	Lectures, E-learning, discussion, and brain storming	Written, and oral exams
2	Mouth Ulcers	3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11, 2.5.1, 2.5.2, 2.5.3, 2.5.4, 4.1.1, 4.1.2, 4.2.3, 4.2.4, 4.3.1, 4.3.3	Lectures, E-learning, practical and seminar presentation	Written, practical and oral exams
3	Heartburn & Dyspepsia	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.5, 3.2.6,	Lectures, E-learning, practical and seminar presentation	Written, practical and oral exams

		3.2.7, 3.2.8, 3.2.9, 3.2.10		
4	Nausea & Vomiting	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.10, 1.1.11, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.7, 3.2.8, 3.2.9, 3.2.10	Lectures, E-learning, practical and seminar presentation	Written, practical and oral exams
5	Diarrhea	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11	Lectures, E-learning, discussion, and brain storming	Written, practical and oral exams
6	Constipation	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.9, 1.1.10, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11, 4.1.2	Lectures, E-learning, practical and seminar presentation	Written, practical and oral exams
7	**Periodical exam**			
8	Hemorrhoids	4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.3.1, 4.3.2, 4.3.3, 1.1.7, 1.1.8, 2.5.2, 2.5.3, 2.5.4, 3.2.9, 3.2.10, 3.2.11	Lectures, E-learning, practical and seminar presentation	Written, practical and oral exams

9	Intestinal Gas	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.9, 1.1.10, 1.1.11, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.5, 3.2.7, 3.2.8, 3.2.9, 3.2.10	Lectures, E-learning**,** practical and seminar presentation	Written, practical and oral exams
10	Colds & Allergic Rhinitis	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11	Lectures, E-learning**,** practical and seminar presentation	Written, practical and oral exams
11	Cough	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11, 4.2.1	Lectures, E-learning**,** discussion and brain storming	Written, practical and oral exams
12	Musculoskeletal Pain	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11, 4.1.2	Lectures, E-learning**,** practical and seminar presentation	Written, practical and oral exams
13	Diaper rash	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 3.1.1, 3.1.2,	Lectures, E-learning**,** discussion, and brain storming	Written, practical and oral exams

		3.2.1, 3.2.2, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11, 4.3.1		
14	Skin Hyperpigmentation	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11, 4.1.3	Lectures, E-learning, practical and seminar presentation	Written, and oral exams
15	Minor Burns & Sunburn	1.1.1, 1.1.3, 1.1.4, 1.1.5, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.5, 3.2.6, 3.2.7, 3.2.8, 3.2.9, 3.2.10	Lectures, E-learning, discussion and brain storming	Written, and oral exams

Name and Signature
Course Coordinator
Associate. Prof. Noha Mahmoud El-Khodary

Name and Signature
Program Coordinator
Associate. Prof. Ahmed Amin Ali