



Mansoura University  
Faculty of Pharmacy  
Clinical Pharmacy Pharm D Program  
2025- 2026



توصيف دورات التدريب الإجبارى ( سنة الإمتياز )  
برنامج بكالوريوس الصيدلة ( فارم دى - PharmD )  
صيدلة إكلينيكية



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Pharmacy Based Rotation (Community Pharmacy)</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Compulsory</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The community-based advanced pharmacy practice experience is committed to providing trainees with a variety of patient care experiences including technical and clinical services to enhance their skills to become exemplary community pharmacists. During this rotation, the trainee will be exposed to all the important aspects of contemporary community pharmacy practice by working with and under the direction of a registered pharmacist preceptor. The preceptor should evaluate the trainee’s experience in community pharmacy and establish goals for the rotation which complement and build on the trainee’s experience and future plans.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to real-life community pharmacy situations, including patient counseling and medication handling.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate pharmaceutical terminology, abbreviations, and symbols consistently in prescription processing and patient communication.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs’ actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret medication mechanisms and assess drug selection, safety, and appropriateness during patient counseling and dispensing processes.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and pharmacy resources to address medication-related problems and answer inquiries effectively.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based resources to support informed clinical decisions in community pharmacy practice.

## Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Adhere to legal and professional regulations in all community pharmacy tasks while collaborating respectfully with healthcare team members.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences during daily pharmacy interactions.
2.1.3	Recognize own personal and professional limitations and accept the conditions of referral to or guidance from other members of the health care team.	2.1.3.1	Identify situations requiring referral and seek appropriate guidance from senior pharmacists or other healthcare professionals when needed.
2.2.2	Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/products considering various incompatibilities.	2.2.2.1	Apply principles of proper storage, handling, and dispensing to maintain medication quality and avoid incompatibilities in the pharmacy.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform accurate pharmaceutical calculations needed for dosing, compounding, and dispensing in the community pharmacy setting.
2.3.2	Recognize and adopt ethical, legal, and safety guidelines for handling and disposal of biologicals, and pharmaceutical materials/products.	2.3.2.1	Follow safety protocols and disposal regulations for expired, hazardous, or biological pharmaceutical products in the community pharmacy.
2.4.1	Ensure safe handling/use of poisons to avoid their harm to individuals and communities.	2.4.1.1	Handle controlled substances and potentially harmful agents safely and responsibly to prevent risks to patients and the community.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Recognize emergency situations and provide basic first aid or appropriate referral when necessary in the pharmacy setting.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify medication-related issues and take appropriate steps to resolve them through counseling or referral.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible pharmacy references to verify medication information and support decision-making when advising patients.
2.6.1	Apply the principles of business administration and management to ensure rational use of financial and human resources.	2.6.1.1	Apply basic pharmacy management principles such as inventory control, stock rotation, and efficient workflow organization in the community pharmacy.

### Domain 3: Pharmaceutical Care

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.1.1	Apply the principles of body function and basis of genomics in health and disease states to manage different diseases.	3.1.1.1	Adjust medication dosage and therapy decisions based on the patient's physiological status and potential genetic or immunological variations.
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Use knowledge of disease causes, spread, pathology, and diagnostic findings to guide appropriate preventive measures and therapeutic recommendations in community pharmacy settings.
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate drug actions, indications, dosing, side effects, and interactions to ensure safe and effective medication use for pharmacy patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in the community pharmacy.
3.2.3	Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals. 3	3.2.3.1	Offer patients reliable, evidence-based advice on the safe and appropriate use of herbal remedies, nutritional supplements, and other complementary therapies.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
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.	3.2.5.1	Counsel patients effectively on correct medication use, including OTC products and medical devices, ensuring understanding of dosing, precautions, and storage.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promote awareness among patients and the community about the dangers of medication misuse and substance abuse, encouraging safe and responsible drug use.

#### **Domain 4: Personal Practice**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks, provide constructive feedback to peers, and manage time efficiently during pharmacy rotation activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and evaluate relevant pharmacy information, solve medication-related problems, and contribute effectively both independently and as a team member.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with patients, colleagues, and the community using verbal, written, and non-verbal methods to convey accurate pharmacy information.
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize modern digital tools and media to present information clearly and professionally in patient counseling or team discussions.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance to identify strengths and areas for improvement, enhancing professional growth and competencies in pharmacy practice.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Skills & abilities		Midpoint evaluation				Final Evaluation	
		1	2	3	4	5	NA
<b>A. Technical, Administrative and Clinical Services (40%)</b>							
<b>I. Demonstrates and provides the appropriate administrative services according to professional standards laws and regulations</b>							
<b>Procurement and storage</b>							
1.	Describes procedures for determining inventory needs						
2.	Describes procedure for obtaining inventory from suppliers, including related documentation. <ul style="list-style-type: none"> <li>• including cycle counts and audits,</li> <li>• physical inventory, turnover rate,</li> <li>• handling return of merchandise,</li> <li>• drug recalls</li> <li>• determine impact of the pharmaceutical return process.</li> </ul>						
3.	Adheres to coding, billing, and reimbursement regulations.						
4.	Identifies system errors prior to an event.						
<b>II. Demonstrates and provides the appropriate pharmaceutical, technical services according to professional standards, laws and regulations</b>							
<b>Preparation/dispensing of prescription products</b>							
5.	Selects correct products/finished dosage forms from the inventory						
6.	Prepares and dispenses medications using appropriate technique						
<b>Compounding</b>							

7.	Compounds non-sterile products and extemporaneous preparation according to the physician order and national and international standards  <ul style="list-style-type: none"> <li>• Uses appropriate techniques.</li> <li>• Uses appropriate ingredients.</li> <li>• Makes accurate calculations.</li> <li>• Makes accurate measurements.</li> <li>• Accurately labels the product</li> </ul>		
<b>Controlled Substances: Describes and complies with established procedures</b>			
8.	Properly handles and dispensing of narcotics and psychotropic medications according to laws and regulations]		
9.	Appropriately counsels patients regarding use of narcotics and psychotropic agents		
<b>III. Demonstrates and provides the appropriate clinical services according to professional standards, laws and regulations</b>			
<b>Processing Prescriptions</b>			
10.	Receives, evaluates prescriptions, and obtains all required information for its processing in terms of  <ul style="list-style-type: none"> <li>• Completeness</li> <li>• Legal requirements</li> <li>• Appropriate indication</li> <li>• Appropriate dosing and route of administration</li> <li>• Allergies</li> </ul>		
<b>Identification of drug related problem(s) (DRPs) and adverse drug reactions (ADRs); accurately identifies and prioritizes patient and drug-related problems needed to assess goals of therapy</b>			
11.	Consistently and accurately identifies and prioritizes medication related problems needed to assess goals of therapy including:  <ul style="list-style-type: none"> <li>- adverse drug events/reactions</li> <li>- interactions with other drug therapy or disease states</li> <li>- therapy duplication</li> <li>- dose related problems</li> <li>- prescription errors</li> </ul>		
12.	Suggests intervention to solve identified DRPs		
<b>Drug information skills and resources</b>			
13.	Identifies and utilizes appropriate drug information resources to be able to conduct an effective and thorough literature search		
14.	Identifies and clarifies drug information questions to be able to respond proficiently to drug information request.		
<b>Development and implementation of pharmaceutical care services</b>			



15.	Reviews and retrieves patients information from different sources (patient interview, patient chart, electronic system)		
16.	Identifies patients need and responds according to patient's symptoms and refer patients for other healthcare services when needed.		
17.	Selects the most appropriate over the counter medication (OTC) according to the case evaluation.		
18.	Calculates and adjusts doses of different medications and select the appropriate dosage form based on a patient's condition including pediatrics		
19.	Conducts appropriate point of care testing, if applicable		
20.	Conducts medication reconciliation and drug use evaluation accurately in a timely manner.		
21.	Describes procedures for reporting significant adverse drug events to national bodies.		
<b>B. Communication and counseling Skills (10%)</b>			
1.	Communicates effectively (verbally and written) with patients and caregivers professionals.		
2.	Provides effective medication counseling (Prescription/OTC medications) and patient education showing empathy.		
3.	Participates in disease screening or health promotion activities or education of a group of patients, community groups or school trainees on disease/medication use.		
<b>C. Professionalism and Ethics (10%)</b>			
1.	Complies with ethics, laws and regulations, and respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.		
2.	Shows punctuality, communicates tardiness and absence effectively.		
3.	Demonstrates enthusiasm, able to undertake tasks, complete assignments, fulfills responsibilities in a timely manner, appropriately prioritize and organize tasks independently or in groups.		
4.	Demonstrates confidence and overall problem -solving abilities.		

D. Graded clinical pharmacy activities and assignments (40%)			
1.	Graded assignments and activities (Table below) (30%).		
2.	Graded written counseling and education materials (Table below) (10%).		

**Minimum expectation of required activities for the Community Pharmacy based rotation**

Required Activities	Minimum Number of Trials for Each Activity	Grade
Preparing prescriptions for dispensing	20	10
Recommending OTC medications	10	5
Detection of medication error or ADR	6	3
Searching a drug information request	4	2
Develop a drug list for 20 of the commonly used drugs with the Egyptian trade names, strength, dosage, and indication.	20 (medications)	10
<b>Graded written counseling and education materials</b>		10
<b>Total</b>		<b>40 Marks</b>

**Field training will be assessed by:**

- **Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)**
- **Academic supervisor using a summative written report about the trainees.**

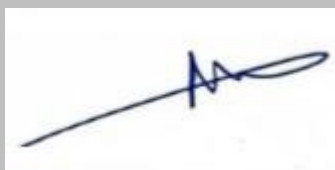
**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

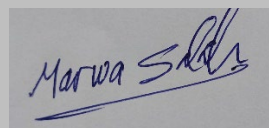
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Pharmacy Based Rotation (Institutional/Hospital Pharmacy)</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Compulsory</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

In this rotation, the trainee is expected to apply knowledge and advanced experience in the processes and functions carried within the hospital pharmacy services. The main aim of this rotation is to introduce the trainee and develop their knowledge and skills in hospital pharmacy operations and services (e.g., outpatient pharmacy, inpatient pharmacy, supply chain unit, pharmacy administration...etc.). These activities will allow the trainees to recognize the pharmacist's technical and administrative services in the hospital. including basic and special drug therapy management in addition to direct patient care activities. The hands-on exposure of the trainees to all the important aspects of contemporary hospital pharmacy practice is achieved by working with and under the direction of a registered pharmacist preceptor and other pharmacy personnel. The preceptor should evaluate the trainee's experience in hospital pharmacy and establish goals for the rotation which complement and build on the trainee's experience and future plans.

## 3. Rotation Learning Outcomes CLOs

### Matrix of rotation learning outcomes CLOs with program outcomes POs (NARS/ARS) Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to real-life hospital pharmacy situations, including medication preparation, storage, and participation in patient-care activities.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate pharmaceutical and medical terminology, abbreviations, and symbols consistently in interpreting medication orders and communicating with healthcare professionals.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret medication mechanisms and assess drug selection, dosing, safety, and appropriateness during order verification and clinical pharmacy activities.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address medication-related problems such as interactions, duplications, and dose adjustments for hospitalized patients.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based resources to support informed clinical decisions in areas such as pharmacotherapy management, antimicrobial stewardship, and medication safety within the hospital setting.

### Domain 2: Professional and Ethical Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
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.	2.1.1.1	Adhere to legal and professional regulations in all hospital pharmacy tasks while collaborating effectively and respectfully with multidisciplinary healthcare team members.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural diversity during interactions within the hospital environment.
2.1.3	Recognize own personal and professional limitations and accept the conditions of referral to or guidance from other members of the health care team.	2.1.3.1	Identify situations requiring clinical referral and seek appropriate guidance from senior pharmacists or other healthcare professionals in patient-care settings.
2.2.2	Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/products considering various incompatibilities.	2.2.2.1	Apply proper storage, handling, and distribution procedures to ensure medication quality and prevent incompatibilities in hospital pharmacy services.
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.	2.2.3.1	Recognize commonly used hospital pharmacy equipment and apply appropriate techniques in medication preparation, compounding, or sterile product handling when required.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform accurate pharmaceutical calculations required for dosing, IV preparation, compounding, and adjustments based on pharmacokinetic parameters in hospitalized patients.
2.3.2	Recognize and adopt ethical, legal, and safety guidelines for handling and disposal of biologicals, and pharmaceutical materials/products.	2.3.2.1	Follow safety protocols and hospital regulations for handling and proper disposal of hazardous, cytotoxic, biological, and expired medications.
2.4.1	Ensure safe handling/use of poisons to avoid their harm to individuals and communities.	2.4.1.1	Handle controlled substances and high-alert/poisonous medications safely and responsibly following hospital policies to minimize risk to patients and staff.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Retrieve and evaluate evidence-based drug information to support clinical decision-making, medication order verification, and patient-care services.
2.6.1	Apply the principles of business administration and management to ensure rational use of financial and human resources.	2.6.1.1	Apply basic hospital pharmacy management principles such as inventory control, formulary management, and efficient workflow within the inpatient pharmacy setting.

### Domain 3: Pharmaceutical Care

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.1.1	Apply the principles of body function and basis of genomics in health and disease states to manage different diseases.	3.1.1.1	Adjust medication dosage and therapeutic decisions based on patients' physiological status and possible genetic, immunologic, or organ-function variations commonly seen in hospitalized patients.
3.1.2	Apply the principles of public health and pharmaceutical microbiology to select and assess proper methods of infection control.	3.1.2.1	Apply infection-control and antimicrobial-stewardship principles within the hospital setting, including proper aseptic techniques, isolation precautions, and prevention of healthcare-associated infections.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate drug actions, dosing, indications, contraindications, side effects, and interactions to ensure safe and effective medication therapy for hospitalized patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance concepts to detect, document, and prevent medication-related problems and adverse events in hospital pharmacy practice.
3.2.3	Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals. 3	3.2.3.1	Provide evidence-based recommendations regarding the safe use of herbal products, supplements, and complementary therapies and their potential interactions with hospital medications.
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.	3.2.5.1	Counsel hospitalized patients and their families on proper medication use, transitions of care, discharge medications, and correct handling of medical devices.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promote patient and staff awareness regarding the risks of medication misuse, controlled substances, and high-alert medications within the hospital setting.

#### **Domain 4: Personal Practice**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for shared tasks in the hospital pharmacy, provide respectful and constructive feedback to peers, and manage time efficiently during inpatient and outpatient workflow.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Retrieve and analyze hospital-related medication information, solve medication-related problems, and contribute effectively both independently and within the multidisciplinary healthcare team.



<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly and professionally with healthcare providers, patients, and caregivers using verbal, written, and non-verbal communication to ensure accurate transfer of medication information.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance during hospital rotation activities, identifying strengths and areas for improvement to enhance clinical and professional competencies.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Skills & abilities		Midpoint evaluation				Final Evaluation	
A. Technical, Administrative and Clinical Services (50%)		1	2	3	4	5	NA
<b>I. Demonstrate and provide the appropriate administrative services related to the Institutional/Hospital Pharmacy practice according to professional standards, laws, and regulations</b>							
<b>Managing Pharmacy Operations</b>							
1.	Participates in institutional-based activities (e.g., pharmacy and therapeutics committee, drug information services, and formulary management)						
2**	<ul style="list-style-type: none"> <li>Assists in stock control within the pharmacies and coordinates with warehouse, clinics, nurse stations and physicians to prepare and dispense medications whenever appropriate.</li> </ul>						
3.	Understands the different medication distribution systems within the hospital.						
4**	Describes procedure for determining and obtaining inventory from suppliers, including: <ul style="list-style-type: none"> <li>related documentation.</li> <li>cycle counts and audits,</li> <li>physical inventory, and turnover rate,</li> <li>handling return of merchandise,</li> <li>drug recalls and days-on-hand and impact of the pharmaceutical return process.</li> </ul>						
5.	Adheres to appropriate safety and quality assurance practices and promotes culture of safety.						
6.	Identifies system errors prior to an event.						
<b>II. Demonstrate and provide the appropriate pharmaceutical, technical services according to professional standards, laws and regulations (Covers a minimum of 2 items from 8-14).</b>							
<b>Demonstrates and provides appropriate technical services related to the sterile compounding (e.g., intravenous</b>							
7.	Demonstrates familiarity and basic understanding of aseptic compounding techniques according to the national and/or international standards (e.g., USP <797/800>standards).						
8.	Demonstrates 100% accurate aseptic technique. <ul style="list-style-type: none"> <li>Handwashing</li> <li>Proper gowning and sterile gloving technique</li> </ul>						

	<ul style="list-style-type: none"> <li>• Proper hood or barrier isolator cleaning technique (when applicable).</li> <li>• Proper powder vial reconstitution technique</li> </ul> Proper liquid vial and ampule technique		
9.	Compounds sterile products according to the physician order, using appropriate techniques: <ul style="list-style-type: none"> <li>• Using appropriate ingredients.</li> <li>• Performing accurate calculations.</li> <li>• Making accurate measurements for reconstitution.</li> <li>• Using correct procedures and techniques to prepare the product.</li> </ul> Following procedures for accurate labeling and documentation.		
10.	Practices intravenous (IV) admixture preparation, and IV compatibility checking.		
<b>Cytotoxic or hazardous products/Chemotherapy preparations</b>			
11.	Handles, prepares, and dispenses cytotoxic medications, and hazardous substance using appropriate precautions to maintain safe and sterile environment.		
12.	Performs cleaning procedures and sterilization techniques, using appropriate personal protective equipment and procedures for the disposal of cytotoxic materials and supplies used in dealing with them.		
<b>Narcotics and Psychotropic Medications- Describes and complies with established procedures</b>			
13**	<ul style="list-style-type: none"> <li>• Accurately verifies, dispenses, and documents dispensed narcotics and psychotropic medications and determines if modifications are needed to improve their security</li> </ul>		
14.	Appropriately counsels patients regarding use of narcotics and psychotropic medications		
<b>III. Demonstrates and provides the appropriate clinical services according to professional standards, laws and regulations</b>			
<b>Processing Prescriptions</b>			
15**	Receives, reviews, and evaluates prescriptions/physician order and obtains all required information for its processing in terms of. <ul style="list-style-type: none"> <li>• Completeness</li> <li>• Legal requirements</li> <li>• Appropriate indication</li> <li>• Appropriate dosing and route of administration</li> </ul> Allergies		

<b>Identification of drug related problem(s) (DRPs); consistently and accurately identifies and prioritizes patient and drug-related problems needed to assess goals of therapy</b>			
<b>Processing Prescriptions</b>			
16**	Identifies and documents prescription problems to determine if any DRPs exist including: <ul style="list-style-type: none"> <li>- Adverse drug reactions and allergies</li> <li>- Drug interactions with other drug therapy or disease states,</li> <li>- Duplication</li> <li>- Dosing problems</li> </ul> Prescription/Order errors		
17.	Resolves prescription problems; Effectively communicates disease/therapy-related problems and suggests intervention(s).		
18.	Describes procedures for reporting significant adverse drug events to Egyptian Pharmacovigilance center		
<b>Drug information skills and resources</b>			
19**	Identifies and utilizes appropriate drug information resources to be able to conduct an effective and thorough literature search to be able to respond proficiently to drug information requests from available resources		
<b>Development and Implementation of Pharmaceutical Care Plan(s)</b>			
20**	Reviews and retrieves patient's information from different sources (patient interview, patient chart/records).		
21.	Identifies patient's need(s) and responds accordingly.		
22**	Recognize names and indications of commonly prescribed medications and shows proficiency in filling orders by selecting the correct medication and dosage form		
23**	Provides appropriate substitution to generic products and demonstrates familiarity with the formulary system		
24**	Performs pharmaceutical calculations related to medication orders, based on a patient's condition including pediatric medications doses adjusts doses of different medications and select the appropriate dosage form based on available information.		

<b>B. Communication and counseling Skills (5%)</b>			
1.	Communicates effectively (verbally and written) with patients and healthcare providers		
2.	Provides effective medication counseling (Prescription/ OTC) and patient education showing empathy.		
3.	Works effectively as a team member in an efficient and interactive way to perform the required tasks.		
<b>C. Professionalism and Ethics (5%)</b>			
1.	Complies with ethics, laws and regulations, and respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene		
2.	Shows punctuality, communicates tardiness and absence effectively		
3.	Demonstrates enthusiasm, able to undertake tasks, completes assignments, fulfills responsibilities in a timely manner, appropriately prioritizes and organizes tasks independently or in groups.		
4.	Conducts self-assessment to identify strengths and weaknesses, accepting constructive criticism for personal and professional development, responding to feedback to modify behaviors		
5.	Demonstrates confidence and overall problem-solving abilities		
<b>D. Graded clinical pharmacy activities and assignments (40%)</b>			
1.	Graded assignments and activities (Table below) ( 35%)		
2.	Graded written counseling and education materials ( 5%)		

\* Minimum score for passing rotation is 60%.

\*\* The student is requested to pass with a minimum score of 3 in each of the 10 mandatory activities (items number A.I.2, A.I.4, A.II.13, A.III.15, A.III.16, A.III.19, A.III.20, A.III.22, A.III.23, and A.III.24), and complete other activities to achieve the minimum passing score Minimum expectation of required activities for the Community Pharmacy based rotation.

<b>Required Activities</b>	<b>Minimum Number of Trials for Each Activity</b>	<b>Grade</b>
Receiving and processing medication orders for dispensing	15	15
Detection of medication error or ADR	5	5
Searching and responding to drug information request	5	5
Develop drug monograph for 5 of the commonly used drugs with the Egyptian trade names, strength, dosage, and indication.	5 (medications)	10
<b>Graded written counseling and education materials (minimum of 3 activities)</b>		5
<b>Total</b>		<b>40 Marks</b>

**Field training will be assessed by:**

- **Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)**
- **Academic supervisor using a summative written report about the trainees.**

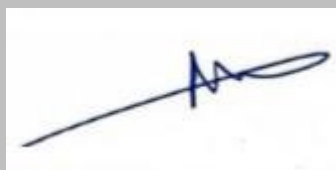
**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

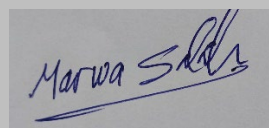
Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Name and Signature  
Coordinator



**Dr. Mahmoud Samaha**

Name and Signature  
Program Director



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Pharmacy Based Rotation (Intravenous admixing preparation)</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Compulsory</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>



## 2. Rotation Overview (Brief summary of scientific content)

This rotation will prepare the trainee on the preparation of sterile compounds, hazardous/radiopharmaceutical medications, and all aspects of handling from receiving materials to final examination or disposal.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Perform duties in compliance with pharmacy laws, regulations, and professional standards within the context of IV admixture preparation in the hospital pharmacy.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Apply healthcare ethics and pharmacy professional principles, respecting patients' rights, confidentiality, and cultural diversity during IV admixture preparation.
2.1.3	Recognize own personal and professional limitations and accept the conditions of referral to or guidance from other members of the health care team.	2.1.3.1	Identify situations requiring referral or guidance and seek appropriate supervision from senior pharmacists or clinical staff during IV admixture preparation.
2.2.2	Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/products considering various incompatibilities.	2.2.2.1	Implement quality assurance principles (GLP, GCP, GDP, GVP) to ensure safe, accurate, and sterile IV admixture 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.	2.2.3.1	Select and use appropriate aseptic techniques, laminar flow hoods, and IV preparation equipment according to standard hospital procedures.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification,	2.2.4.1	Perform accurate calculations for IV doses, infusion rates, and admixture concentrations to ensure correct patient therapy.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
	bioequivalence studies, and pharmacy practice.		
<b>2.3.1</b>	Handle, identify, and dispose biologicals, synthetic/natural materials, biotechnology-based and radio-labeled products, and other materials/products used in pharmaceutical field.	<b>2.3.1.1</b>	Handle, identify, and properly dispose of hazardous, cytotoxic, or sterile IV products according to hospital safety and infection-control protocols.
<b>2.3.2</b>	Recognize and adopt ethical, legal, and safety guidelines for handling and disposal of biologicals, and pharmaceutical materials/products.	<b>2.3.2.1</b>	Follow ethical, legal, and safety guidelines for handling, storing, and disposing of hazardous, biological, and sterile IV admixtures.

### **Domain 3: Pharmaceutical Care**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
<b>3.2.1</b>	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	<b>3.2.1.1</b>	Evaluate drug actions, indications, dosing, side effects, and interactions specifically for IV therapy, ensuring safe and effective medication use in hospitalized patients.
<b>3.2.2</b>	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	<b>3.2.2.1</b>	Apply clinical pharmacology and pharmacovigilance principles to identify, report, and prevent IV therapy-related medication errors, adverse events, and risks in hospital pharmacy practice.

### Domain 4: Personal Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in IV admixture preparation, provide constructive feedback to peers, and manage time efficiently during sterile compounding and workflow activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and evaluate relevant medication and IV preparation information, solve preparation-related problems, and contribute effectively both independently and as part of the sterile compounding team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly and accurately with pharmacists, nurses, and other healthcare staff regarding IV orders, preparation instructions, and medication safety using verbal, written, and non-verbal methods.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Skills & abilities		Midpoint evaluation				Final Evaluation	
A. Technical, Administrative and Clinical Services (50%)		1	2	3	4	5	NA
<b>I. Demonstrate and provide the appropriate administrative services related to the Institutional/Hospital Pharmacy practice according to professional standards, laws, and regulations</b>							
<b>Managing Pharmacy Operations</b>							
1.	Participates in institutional-based activities (e.g., pharmacy and therapeutics committee, drug information services, and formulary management)						
2**	<ul style="list-style-type: none"> <li>Assists in stock control within the pharmacies and coordinates with warehouse, clinics, nurse stations and physicians to prepare and dispense medications whenever appropriate.</li> </ul>						
3.	Understands the different medication distribution systems within the hospital.						
4**	Describes procedure for determining and obtaining inventory from suppliers, including: <ul style="list-style-type: none"> <li>related documentation.</li> <li>cycle counts and audits,</li> <li>physical inventory, and turnover rate,</li> <li>handling return of merchandise,</li> <li>drug recalls and days-on-hand and impact of the pharmaceutical return process.</li> </ul>						
5.	Adheres to appropriate safety and quality assurance practices and promotes culture of safety.						
6.	Identifies system errors prior to an event.						
<b>II. Demonstrate and provide the appropriate pharmaceutical, technical services according to professional standards, laws and regulations (Covers a minimum of 2 items from 8-14).</b>							
<b>Demonstrates and provides appropriate technical services related to the sterile compounding (e.g., intravenous</b>							
7.	Demonstrates familiarity and basic understanding of aseptic compounding techniques according to the national and/or international standards (e.g., USP <797/800> standards).						
8.	Demonstrates 100% accurate aseptic technique. <ul style="list-style-type: none"> <li>Handwashing</li> <li>Proper gowning and sterile gloving technique</li> <li>Proper hood or barrier isolator cleaning technique (when applicable).</li> <li>Proper powder vial reconstitution technique</li> </ul> Proper liquid vial and ampule technique						

9.	Compounds sterile products according to the physician order, using appropriate techniques: <ul style="list-style-type: none"> <li>• Using appropriate ingredients.</li> <li>• Performing accurate calculations.</li> <li>• Making accurate measurements for reconstitution.</li> <li>• Using correct procedures and techniques to prepare the product.</li> </ul> Following procedures for accurate labeling and documentation.		
10.	Practices intravenous (IV) admixture preparation, and IV compatibility checking.		
<b>Cytotoxic or hazardous products/Chemotherapy preparations</b>			
11.	Handles, prepares, and dispenses cytotoxic medications, and hazardous substance using appropriate precautions to maintain safe and sterile environment.		
12.	Performs cleaning procedures and sterilization techniques, using appropriate personal protective equipment and procedures for the disposal of cytotoxic materials and supplies used in dealing with them.		
<b>Narcotics and Psychotropic Medications- Describes and complies with established procedures</b>			
13**	<ul style="list-style-type: none"> <li>• Accurately verifies, dispenses, and documents dispensed narcotics and psychotropic medications and determines if modifications are needed to improve their security</li> </ul>		
14.	Appropriately counsels patients regarding use of narcotics and psychotropic medications		
<b>III. Demonstrates and provides the appropriate clinical services according to professional standards, laws and regulations</b>			
<b>Processing Prescriptions</b>			
15**	Receives, reviews, and evaluates prescriptions/physician order and obtains all required information for its processing in terms of. <ul style="list-style-type: none"> <li>• Completeness</li> <li>• Legal requirements</li> <li>• Appropriate indication</li> <li>• Appropriate dosing and route of administration</li> </ul> Allergies		
<b>Identification of drug related problem(s) (DRPs); consistently and accurately identifies and prioritizes patient and drug-related problems needed to assess goals of therapy</b>			
<b>Processing Prescriptions</b>			
16**	Identifies and documents prescription problems to determine if any DRPs exist including: <ul style="list-style-type: none"> <li>- Adverse drug reactions and allergies</li> <li>- Drug interactions with other drug therapy or disease states,</li> </ul>		

	<ul style="list-style-type: none"> <li>- Duplication</li> <li>- Dosing problems</li> </ul> Prescription/Order errors		
17.	Resolves prescription problems; Effectively communicates disease/therapy-related problems and suggests intervention(s).		
18.	Describes procedures for reporting significant adverse drug events to Egyptian Pharmacovigilance center		
<b>Drug information skills and resources</b>			
19**	Identifies and utilizes appropriate drug information resources to be able to conduct an effective and thorough literature search to be able to respond proficiently to drug information requests from available resources		
<b>Development and Implementation of Pharmaceutical Care Plan(s)</b>			
20**	Reviews and retrieves patient's information from different sources (patient interview, patient chart/records).		
21.	Identifies patient's need(s) and responds accordingly.		
22**	Recognize names and indications of commonly prescribed medications and shows proficiency in filling orders by selecting the correct medication and dosage form		
23**	Provides appropriate substitution to generic products and demonstrates familiarity with the formulary system		
24**	Performs pharmaceutical calculations related to medication orders, based on a patient's condition including pediatric medications doses adjusts doses of different medications and select the appropriate dosage form based on available information.		
<b>B. Communication and counseling Skills (5%)</b>			
1.	Communicates effectively (verbally and written) with patients and healthcare providers		
2.	Provides effective medication counseling (Prescription/ OTC) and patient education showing empathy.		
3.	Works effectively as a team member in an efficient and interactive way to perform the required tasks.		
<b>C. Professionalism and Ethics (5%)</b>			

1.	Complies with ethics, laws and regulations, and respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene		
2.	Shows punctuality, communicates tardiness and absence effectively		
3.	Demonstrates enthusiasm, able to undertake tasks, completes assignments, fulfills responsibilities in a timely manner, appropriately prioritizes and organizes tasks independently or in groups.		
4.	Conducts self-assessment to identify strengths and weaknesses, accepting constructive criticism for personal and professional development, responding to feedback to modify behaviors		
5.	Demonstrates confidence and overall problem-solving abilities		
<b>D. Graded clinical pharmacy activities and assignments (40%)</b>			
1.	Graded assignments and activities (Table below) ( 35%)		
2.	Graded written counseling and education materials ( 5%)		

\* **Minimum score for passing rotation is 60%.**

**\*\* The student is requested to pass with a minimum score of 3 in each of the 10 mandatory activities (items number A.I.2, A.I.4, A.II.13, A.III.15, A.III.16, A.III.19, A.III.20, A.III.22, A.III.23, and A.III.24), and complete other activities to achieve the minimum passing score Minimum expectation of required activities for the Community Pharmacy based rotation**

<b>Required Activities</b>	<b>Minimum Number of Trials for Each Activity</b>	<b>Grade</b>
Receiving and processing medication orders for dispensing	15	15
Detection of medication error or ADR	5	5
Searching and responding to drug information request	5	5
Develop drug monograph for 5 of the commonly used drugs with the Egyptian trade names, strength, dosage, and indication.	5 (medications)	10
<b>Graded written counseling and education materials (minimum of 3 activities)</b>		5
<b>Total</b>		<b>40 Marks</b>

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

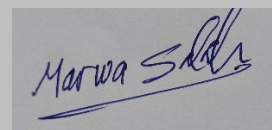
Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Name and Signature  
Coordinator



**Dr. Mahmoud Samaha**

Name and Signature  
Program Director



**Prof. Dr. Marwa Salah El-Dahan**





**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Clinical pharmacy rotation in adult general medicine</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Compulsory</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The purpose of this rotation is to develop the trainees' knowledge-based competencies and clinical skills required to deal professionally with a wide range of general medicine-related diseases endocrine (e.g., endocrine disorders, gastrointestinal disorders, renal disorders, cardiovascular disorders, and other chronic conditions) and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at any adult general medicine rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess, monitor, and optimize medication therapy for adult inpatients.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate pharmaceutical terminology, abbreviations, and symbols consistently when documenting clinical interventions and communicating with healthcare professionals.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret drug mechanisms, evaluate therapeutic appropriateness, effectiveness, and safety for adult patients, and apply this knowledge in clinical decision-making.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to identify and resolve medication-related problems in adult general medicine patients.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based literature to support clinical recommendations and informed medication management decisions for adult inpatients.

## Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Adhere to hospital pharmacy regulations and professional standards while collaborating effectively with multidisciplinary healthcare team members.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural diversity during clinical pharmacy activities.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform accurate calculations for adult inpatient dosing, IV infusions, dose adjustments for organ impairment, and therapeutic monitoring.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Apply basic life support and emergency response measures appropriately in clinical pharmacy settings when needed.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify, intervene, and resolve medication-related problems and optimize pharmacotherapy for adult inpatients in collaboration with the healthcare team.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible clinical and pharmacy references to support therapeutic decisions, resolve medication issues, and provide evidence-based recommendations.

## Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.4	Apply the principles of body function and basis of genomics in health and disease states to manage different diseases.	3.1.4.1	Adjust medication dosage and therapy decisions based on patients' physiological status, laboratory results, and potential genetic or immunological variations.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate drug actions, indications, dosing, side effects, and interactions to ensure safe and effective medication use for pharmacy patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance principles to identify, report, and prevent medication-related risks in hospitalized adult patients.
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.	3.2.5.1	Counsel adult patients and caregivers effectively on correct medication use, including prescription and OTC medications, and medical devices, ensuring understanding of dosing, precautions, and storage.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promote awareness among patients, caregivers, and staff about the dangers of medication misuse, substance abuse, and encourage safe and responsible medication practices.

#### **Domain 4: Personal Practice**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative clinical tasks, provide constructive feedback to peers, and manage time efficiently during ward rounds and patient care activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and evaluate relevant clinical and pharmacy information, solve medication-related problems, and contribute effectively both independently and as a member of the multidisciplinary healthcare team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly and professionally with patients, caregivers, and healthcare staff using verbal, written, and non-verbal methods to ensure accurate and safe medication therapy.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and contemporary technologies to present clinical findings, recommendations, or case discussions effectively to the healthcare team.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance during clinical rotation to identify strengths and areas for improvement, enhancing professional competencies in patient care.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Engage in self-directed learning to update knowledge, acquire new skills, and support continuous professional development in clinical pharmacy practice.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Skills & abilities		Midpoint evaluation				Final Evaluation	
A. Knowledge and clinical skills (40%)		1	2	3	4	5	NA
<b>I. Knowledge of Problem and Disease State Clinical Decision Making</b>							
1.	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making						
2.	<u>Data collection:</u> Reviews and retrieves information from different sources (patient interview, patient chart, electronic • system)						
<b>II. Assessment of patient medical and medication history including active problems, Past Medical History(PMH), pertinent Physical Examination (PE), laboratory data and hospital course in database, if available</b>							
3.	Assesses patient medical history including active problems, PMH, laboratory data, physical assessment and diagnostic measures.						
4.	Performs and completes patient medication history and updates medication profiles						
5.	Conducts medication reconciliation and drug use evaluation accurately and in a timely manner.						
<b>III. Identification of drug related problem(s) (DRPs); consistently and accurately identifies and prioritizes patient and drug-related problems needed to assess goals of therapy.</b>							
6.	Consistently and continuously, identifies, prioritizes the problem list depending on significance and assessment of severity providing recommendation of an appropriate course of action, and documents DRPs including:  <ul style="list-style-type: none"> <li>- adverse drug events with treatment and allergies</li> <li>- potential interactions with other drug therapy or disease states</li> <li>- duplicate therapy</li> </ul> recognizing medication errors						
<b>IV. Drug information skills and resources</b>							
7.	<ul style="list-style-type: none"> <li>• Identifies and utilizes appropriate drug information resources to be able to conduct an effective and thorough literature search</li> </ul>						
8.	Identifies and clarifies drug information questions to be able to respond proficiently to drug information requests from available resources.						
<b>V. Development and Implementation of Pharmaceutical Care Plan(s) Monitors and Evaluates Drug Therapy: Initial and Ongoing Processing Prescriptions</b>							

9.	Demonstrates the ability to develop and implement a pharmaceutical care plan including: a. Determination of the therapeutic goals b. therapeutic endpoints c. appropriate drug therapy (dose, duration, route, etc.) parameters to monitor efficacy and safety		
10.	Evaluates and adjusts doses of different medications and select the appropriate dosage form based on a patient's condition.		
11.	Performs pharmaceutical calculations related to medication orders, including pediatric and renal patient orders, if applicable (IBW, Cr Cl using reliable drug information resources).		
	➤ Calculates creatinine clearance (Cr Cl) for adult and pediatric using appropriate formula and recommends appropriate dose adjustment for medications		
	➤ Calculates and adjust the doses for pediatric, neonatal medications and adults according to body weight, body surface area (BSA), or ideal body weight (IBW) (when applicable)		
	➤ Performs therapeutic drug monitoring (TDM) and dose adjustment for narrow therapeutic index medications (e.g., vancomycin, aminoglycoside, phenytoin...) when applicable.		
12.	Interprets laboratory values and adjusts medications accordingly		
<b>VI. Follow Up Plan(s)</b>			
13.	Determines appropriate time(s) to re-evaluate patient and assess efficacy and safety		
14.	Identifies and documents adverse drug reactions, drug interactions, and contraindications of prescribed drugs.		
15.	Presents patient cases and therapeutic care plans to preceptors and peers.		
<b>B. Communication and counseling Skills (10%)</b>			
1.	Communicates effectively (verbally & written) with patients and other healthcare professionals		
2.	Provides effective medication counseling (Prescription/OTC) and patient education showing empathy		
3.	Works effectively as a team member in an efficient and interactive way to perform the required tasks.		
4.	Participates in institutional-based activities (e.g., pharmacy and therapeutics committee) when applicable		

<b>C. Professionalism and Ethics (10%)</b>			
1.	Complies with ethics, laws and regulations, respects patients' Confidential and adheres to dress code, well groomed; maintains good personal hygiene		
2.	Shows Punctuality, and communicates tardiness and absence		
3.	Demonstrates enthusiasm, able to undertake tasks, complete assignments, fulfills responsibilities in a timely manner, appropriately prioritize and organize tasks independently or in groups.		
4.	Conducts self -assessment to identify the strengths and weaknesses, accepting constructive criticism for personal and professional development, responding to feedback to modify behaviors.		
5.	Demonstrates confidence and overall problem -solving abilities information.		
<b>D. Graded clinical pharmacy activities and assignments (40%)</b>			
1.	Graded assignments and activities (Table below) ( 35%)		
2.	Graded written counseling and education materials (5%).		

Specific Activities Pertaining to Clinical Pharmacy Rotation in Adult General Medicine

#	(SP) = Trainee performed once (OB) = Trainee observed	(SP+) = Trainee performed multiple times (None) = Trainee did not perform or observe this activity					Signed by
			SP+	SP	OB	None	
1.	Vital signs assessment (specify) <ul style="list-style-type: none"> <li>• HR</li> <li>• BP</li> <li>• RR</li> </ul>						
2.	Pulmonary function test interpretation						
3.	Patient counselling on discharge						
4.	Chest X-ray tracing interpretation (pneumonia, etc.)(specify) CT scan interpretation (specify) Others (specify)						



5.	Calculate disease related scores. <ul style="list-style-type: none"> <li>• <i>Severity assessment:</i> (1. CHADSVASC, 2. pooled cohort equation, 3. Others.) (specify)</li> <li>• <i>Staging assessment:</i> (1. COPD/asthma/others).</li> </ul>					
6.	Calculate and adjust medication doses for renal and hepatic functions, body weight, and therapeutics outcomes of the medications (e.g., insulin, antiepileptics, antidiabetics, aminoglycoside, vancomycin, etc....).					
7.	Nutrition management (calculation of caloric needs) specify					
8.	Others					

Required Activities	Minimum Number of Trials for Each Activity	Grade
<sup>§</sup> Topic discussion	1-2	13
Case presentation	1	12
Journal club	5	5
<sup>#</sup> DIR and Medication error	5 (medications)	5
<b>Graded written counseling and education materials (minimum of 3 activities)</b>		5
<b>Total</b>		<b>40 Marks</b>

<sup>§</sup>One OR Two topic discussion (with average mark of the 2 recorded); <sup>#</sup>each DIR or medications error is for 1 mark, a total of 5 should be submitted to get (5).

\* Minimum score for passing rotation is 60%.

**Field training will be assessed by:**

- **Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)**
- **Academic supervisor using a summative written report about the trainees.**

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

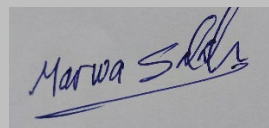
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Drug tour registration to market rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Compulsory</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

Drug tour registration to market rotation enables the trainees to over view the various stages of pharmaceutical industry. Trainees will be exposed to the regulatory requirements for registration. Multiple stages to product life cycle will be covered.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to understand drug development, registration, and market authorization processes.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate pharmaceutical terminology, abbreviations, and symbols consistently when preparing regulatory documents, dossiers, and communications with authorities.
1.1.3.	Integrate knowledge from fundamental sciences to handle, identify, extract, design, prepare, analyze, and assure quality of synthetic/natural pharmaceutical materials/products.	1.1.3.1	Apply knowledge of drug formulation, quality control, and analytical methods to evaluate data for registration and marketing approval.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Assess pharmacological and clinical data to ensure drug safety, efficacy, and appropriateness during the registration and post-marketing phases.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific literature and regulatory guidelines to address questions related to drug registration, safety, and market release.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based resources and regulatory reports to support informed decisions in drug approval and marketing processes.
1.1.7	Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care.	1.1.7.1	Identify and analyze emerging trends, regulatory changes, and safety concerns impacting drug development, approval, and market strategies.

## Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Adhere to regulatory and professional standards while collaborating with regulatory authorities, pharmaceutical companies, and multidisciplinary teams during drug registration and market authorization.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting confidentiality, intellectual property, and professional responsibilities in all regulatory and market-related activities.
2.1.3	Recognize own personal and professional limitations and accept the conditions of referral to or guidance from other members of the health care team.	2.1.3.1	Identify situations requiring guidance from senior regulatory pharmacists or authorities and seek appropriate supervision during drug registration and approval processes.
2.2.1	Isolate, design, identify, synthesize, purify, analyze, and standardize synthetic/natural pharmaceutical materials.	2.2.1.1	Apply knowledge of pharmaceutical formulation and analytical techniques to evaluate product dossiers and ensure compliance with quality standards.
2.2.2	Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/products considering various incompatibilities.	2.2.2.1	Apply principles of GMP, GLP, and quality assurance to review manufacturing, storage, and distribution data for drug registration.
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.	2.2.3.1	Evaluate analytical methods and instrumentation used for product quality assessment in registration dossiers.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform calculations and interpret clinical trial and bioequivalence data to assess safety, efficacy, and dosage recommendations.
2.3.1	Handle, identify, and dispose biologicals, synthetic/natural materials, biotechnology-based and radio-labeled products, and other materials/products used in pharmaceutical field.	2.3.1.1	Follow proper handling, storage, and disposal procedures for investigational and registered pharmaceutical products.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
2.3.2	Recognize and adopt ethical, legal, and safety guidelines for handling and disposal of biologicals, and pharmaceutical materials/products.	2.3.2.1	Follow ethical, legal, and safety protocols for handling investigational and marketed products in compliance with regulatory standards.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify regulatory or safety issues in drug dossiers or post-marketing data and recommend appropriate corrective actions.
2.5.1	Fulfill the requirements of the regulatory framework to authorize a medicinal product including quality, safety, and efficacy requirements.	2.5.1.1	Review and assess registration dossiers to ensure compliance with regulatory requirements for quality, safety, and efficacy.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible regulatory, clinical, and scientific references to support approval decisions and market authorization.
2.5.3	Contribute in planning and conducting research studies using appropriate methodologies.	2.5.3.1	Participate in post-marketing surveillance, pharmacovigilance, or regulatory research studies to ensure ongoing drug safety.
2.6.1	Apply the principles of business administration and management to ensure rational use of financial and human resources.	2.6.1.1	Apply management principles in coordinating regulatory submissions, resource allocation, and workflow for drug registration and market approval.
2.6.2	Utilize the principles of drug promotion, sales, marketing, accounting, and pharmacoeconomic analysis.	2.6.2.1	Understand regulatory and ethical guidelines in drug promotion, marketing authorization, and pharmacoeconomic evaluation to support safe market introduction.

### Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.1	Apply the principles of body function and basis of genomics in health and disease states to manage different diseases.	3.1.1.1	Interpret pharmacogenomic and physiological data to evaluate drug dosing, efficacy, and safety in target patient populations during registration and post-marketing assessment.
3.1.2	Apply the principles of public health and pharmaceutical microbiology to select and assess proper methods of infection control.	3.1.2.1	Assess microbiological data and infection control measures to ensure pharmaceutical products comply with safety and sterility requirements.
3.1.3	Monitor and control microbial growth and carry out laboratory tests for identification of infections/diseases.	3.1.3.1	Review microbiological quality control reports of pharmaceutical products to confirm compliance with regulatory standards.
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Use knowledge of disease mechanisms and clinical data to evaluate the safety, efficacy, and labeling information of drugs under review.
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate pharmacological properties, indications, dosage, adverse reactions, and drug interactions to support drug registration and post-marketing safety monitoring.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply pharmacology and pharmacovigilance concepts to identify, report, and prevent safety risks associated with registered or investigational drugs.
3.2.3	Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals. 3	3.2.3.1	Review evidence-based data on complementary and herbal products to ensure regulatory compliance and safe market use.
3.2.4	Provide information about toxic profiles of drugs and other xenobiotics including sources, identification, symptoms, and management control.	3.2.4.1	Assess toxicological reports and risk management plans to support regulatory decisions and ensure patient safety.
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.	3.2.5.1	Provide regulatory and scientific guidance to healthcare professionals and stakeholders regarding safe drug use, labeling, and marketing information.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Evaluate and communicate potential risks of misuse, abuse, or off-label use of pharmaceutical products to support regulatory safety measures.

### Domain 4: Personal Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in regulatory and market activities, provide constructive feedback to peers, and manage time efficiently during dossier review and registration processes.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and evaluate regulatory, clinical, and pharmaceutical information, solve registration and market-related issues, and contribute effectively both independently and as part of a multidisciplinary team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with regulatory authorities, pharmaceutical companies, and healthcare professionals using verbal, written, and electronic methods to convey accurate and compliant information.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).



## 5. Methods of assessment of Trainee

Performance Evaluation Elements		Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA*
<b>PILLAR 1: Regulatory overview on the registered pharmaceutical and biological products</b>						
1	Define different pharmaceutical products with their different forms (human, veterinary, herbal and cosmetics).					
2	Define biological products and their derivatives.					
3	Understand how to register pharmaceutical products according to international guidelines.					
4	Comprehend how to prepare registration files of pharmaceutical products according to EDA regulatory guidelines.					
5	Know how to register biological products according to the international guidelines.					
6	Comprehend how to prepare registration files of biological products according to EDA regulatory guidelines.					
7	Know the components of the unified technical file (Common Technical Document – CTD & eCTD files).					
8	Identify international institutions regulating the registration and trading of pharmaceutical products such as (WHO, EMA, FDA).					
<b>PILLAR 2: Regulation overview of the registration of Medical Devices and in-vitro diagnostic medical devices (IVDs)</b>						
9	Define the medical device.					
10	Identify medical devices classification.					
11	Recognize how to register the medical device and <i>in-vitro</i> diagnostic medical devices (IVDs) in accordance with international guidelines.					
12	Know how to prepare registration files and the current regulatory decrees					
<b>PILLAR 3: Overview on bioavailability and bioequivalence studies</b>						
13	Identify the importance of Bioequivalence in drug registration.					
14	Recognize a brief introduction about bioequivalence study.					
15	Recognize a brief introduction about <i>in-vitro</i> dissolution study.					
16	Understand the Egyptian Guidelines for Conducting Bioequivalence Studies.					
17	Know the licensing process of bioequivalence and bioavailability centers approved by EDA.					
<b>PILLAR 4: Overview on Good Manufacturing Practice (GMP)</b>						
18	Identify basic principles of Good Manufacturing Practices.					
19	Recognize the guidelines of assurance system for good cleaning and public health (Cleaning Validation).					
20	Understand systems for the qualification and verification of equipment and devices.					
21	Identify raw material management systems, good storage, and warehouses, ensuring and applying safety measures in every step, and good storage conditions of warehouses.					

22	Recognize Good documentation system (How to control and validate data integrity from regulatory point of view).					
23	Understand Good documentation system (Manufacturing point of view).					
<b>PILLAR 5: Pharmaceutical inspection and knowledge of the application of pharmacy laws and inspection tasks</b>						
24	Identify licensing procedures for the stores, ware houses, and distribution companies of pharmaceutical and biological products.					
25	Identify narcotic drugs usage laws and how to apply in market.					
26	Recognize pharmaceutical inspection laws and regulations.					
27	Understand the controlling method on licensed pharmaceutical entities.					
28	Recognize the control over pharmaceutical establishments (factories - stores - pharmacies ...).					
29	Practice reports writing for tests and checklists.					
30	Prepare regulatory inspection reports, warning letters and recalls.					
<b>PILLAR 6: Quality Control of Pharmaceutical Products in EDA Labs</b>						
31	Identify the basic concepts of Total Quality Management (TQM) and Quality Management System (QMS).					
32	Perform the physicochemical analysis of Pharmaceutical Products (Basics).					
33	Execute the microbiological analysis of pharmaceutical products (Basics).					
34	Recognize good laboratory and inspection practices (Basics).					
<b>PILLAR 7: Over- The-Counter Marketing of drugs, Application, Approaches and Principals</b>						
35	Define a pharmaceutical product as an OTC.					
36	Recognize the approved national list of OTC drugs.					
37	Know EDA regulations for the registration of OTC products.					
38	Identify the role of outpatient (community) Pharmacist in reporting emergency and medical errors.					
39	Understand the restrictions on dispensing antimicrobial agents on the OTC.					
40	Realize pharmacy outpatient role in patient counseling on the OTC usage.					
<b>PILLAR 8: How to Regulate Insert Leaflet and Promotional material</b>						
41	Define promotional materials and learn how to prepare and control them.					
42	Identify SmPC and PIL: pillars of information.					
43	Recognize the most important pharmacological and drug references.					
44	Discern drug information resources and search approaches.					
45	State drug regulatory authorities in reference countries.					
46	Navigate through pharmaceutical references <i>via</i> practical training.					
47	Determine pharmacy informatics application.					
<b>PILLAR 9: Regulatory Overview on Pharmacovigilance Practice</b>						
48	Understand the importance of Pharmacovigilance regulation system for pharmaceutical companies and the impact on drug registration.					
49	Know the importance of Pharmacovigilance regulation to hospitals and health institutes.					
50	Recognize Pharmacovigilance regulatory system channels of reporting for the public.					

51	Tracking data of Pharmaceutical Products globally (new warnings or precautions).					
52	Identify Risk Management Plan (RMP).					
53	Recognize emerging safety issues (ESI) / Safety information.					
54	Fulfill causality assessment of individual case safety reports (ICSRs).					
55	Execute practical training on reporting to national database.					
<b>GENERAL</b>						
56	Demonstrate responsibility, cooperate, and integrate effectively with teamwork members.					
57	Demonstrate effective communication skills verbally, non-verbally with teamwork members.					
<b>Total Marks</b>						

\*NA, Not Applicable

**Field training will be assessed by:**

- **Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)**
- **Academic supervisor using a summative written report about the trainees.**

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

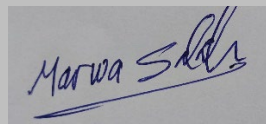
Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Applied Research Project</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Compulsory</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

This Applied Research Project round in the pharmacy internship program aims to equip trainees with the competencies required to perform applied research in pharmaceutical sciences. It ensures they develop a comprehensive set of skills and knowledge, including ethical practice, pharmaceutical product development, disease management, pharmacology, effective teamwork, problem-solving, and ongoing professional growth.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge in planning, conducting, and interpreting tasks within an applied research project.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific principles and research resources to define research problems, guide data analysis, and support project objectives.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Critically appraise and synthesize scientific literature to support decision-making throughout the stages of the applied research project.
1.1.7	Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care.	1.1.7.1	Analyze emerging trends or issues in pharmaceutical sciences or pharmacy practice to propose evidence-based solutions.

#### Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
2.5.3	Contribute in planning and conducting research studies using appropriate methodologies	2.5.3.1	Participate in designing and executing research studies using appropriate scientific methodologies.

### Domain 4: Personal Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for shared research tasks, provide constructive peer feedback, and manage time effectively throughout the research project stage
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically analyze research-relevant information, address project-related challenges, and work efficiently both independently and within the research team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate research ideas, methodologies, and findings clearly using appropriate verbal, non-verbal, and written formats suitable for academic and professional audiences.
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize modern digital tools and presentation platforms to deliver research proposals, progress updates, and project findings effectively.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Engage in self-directed learning to support ongoing professional development.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Aim of the project is clearly demonstrated					
2	Well defined research design					
3	Adequately collected data					
4	Proper analysis and interpretation of the collected data					
5	The idea shows creativity and innovation					
6	Handling the idea shows the problem-solving & critical-thinking skills of the team					
7	Overall impact of the project on the pharmaceutical industry/healthcare system					
8	Feasibility of applying the studied project approaches to practice					
9	Adequately addressing all ethical considerations					
10	Teamwork is clearly shown among the members					
11	Structure (content, language, figures)					
12	Flow of information					
13	Handling questions					
<b>Total Marks</b>						

26

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.



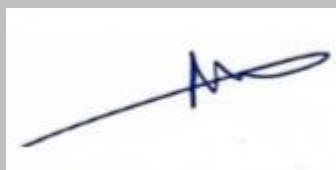
**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

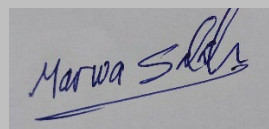
Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Cardiology and Cardiovascular Clinical Pharmacy Rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Elective</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of cardiology and cardiovascular diseases cases (e.g., hypertension, ischemic heart disease, atrial fibrillation, dyslipidemia, heart failure, coronary artery diseases and acute critical care cardiology cases) and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at a cardiovascular rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess cardiovascular conditions and support clinical decision-making in cardiology practice.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate cardiovascular-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of cardiovascular medications and evaluate their appropriateness, effectiveness, and safety for cardiac patients.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address cardiovascular therapeutic problems and guide evidence-based recommendations.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based cardiovascular guidelines and literature to support informed clinical decisions in cardiology and cardiovascular pharmacotherapy.

## Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in cardiology clinical practice.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing cardiovascular patients.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform accurate pharmaceutical and cardiovascular-specific dose calculations, pharmacokinetic adjustments, and therapeutic monitoring.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Recognize cardiac emergencies and provide immediate basic life support or refer appropriately in clinical settings.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify cardiovascular medication-related issues and implement evidence-based interventions, counseling, or referrals.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible cardiovascular and pharmacy references to interpret, verify, and support clinical decision-making in patient care.

## Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of	3.1.4.1	Apply knowledge of cardiovascular disease causes, pathophysiology, diagnostic findings, and epidemiology to guide preventive measures and therapeutic interventions.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
	infections/diseases and their pharmacotherapeutic approaches.		
<b>3.2.1</b>	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	<b>3.2.1.1</b>	Evaluate cardiovascular drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for cardiac patients.
<b>3.2.2</b>	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	<b>3.2.2.1</b>	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in the community pharmacy.
<b>3.2.5</b>	Educate and counsel patients, other health care professionals, and communities about safe and proper use of medicines including OTC preparations and medical devices.	<b>3.2.5.1</b>	Provide counseling to cardiac patients and healthcare team members on correct use of medications, including OTC cardiovascular agents and relevant devices, ensuring comprehension of dosing and precautions.
<b>3.2.6</b>	Maintain public awareness on social health hazards of drug misuse and abuse.	<b>3.2.6.1</b>	Promote awareness among patients and the community about the risks of misuse of cardiovascular medications and other substances, encouraging safe and responsible use.

#### **Domain 4: Personal Practice**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
<b>4.1.1</b>	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	<b>4.1.1.1</b>	Take responsibility for collaborative tasks in cardiology practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
<b>4.1.2</b>	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	<b>4.1.2.1</b>	Collect and critically evaluate cardiovascular clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.
<b>4.2.1</b>	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	<b>4.2.1.1</b>	Communicate clearly with cardiac patients, colleagues, and the healthcare team using verbal, written, and non-verbal methods to convey accurate clinical information.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and multimedia to present cardiovascular patient cases, research findings, or educational materials professionally.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the cardiology rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Pursue independent learning to enhance continuous professional development.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					
7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

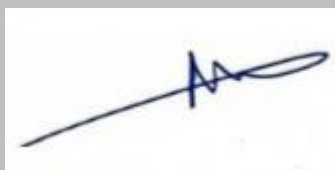
**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

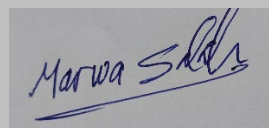
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**





**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Gastroenterology and Hepatology Clinical Pharmacy Rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Elective</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of gastrointestinal related cases (e.g., peptic ulcer, inflammatory bowel disease, motility disorders, pancreatic-biliary diseases, hepatic diseases including viral infections, and patients) and cases for clinical nutrition support need and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at gastroenterology rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess gastrointestinal and liver conditions and support clinical decision-making.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate gastroenterology- and hepatology-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of gastrointestinal and hepatic medications and evaluate their appropriateness, effectiveness, and safety for patients.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address gastroenterology and hepatology therapeutic problems and guide evidence-based recommendations.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based gastroenterology and hepatology guidelines and literature to support informed clinical decisions.

## Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in gastroenterology and hepatology clinical practice.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing patients with gastrointestinal or hepatic conditions.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform accurate pharmaceutical and GI/hepatology-specific dose calculations, pharmacokinetic adjustments, and therapeutic monitoring.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Recognize gastrointestinal or hepatic emergencies and provide immediate basic life support or refer appropriately in clinical settings.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify medication-related issues in gastroenterology and hepatology patients and implement evidence-based interventions, counseling, or referrals.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible gastroenterology, hepatology, and pharmacy references to interpret, verify, and support clinical decision-making in patient care.

## Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Apply knowledge of gastrointestinal and hepatic disease causes, pathophysiology, diagnostic findings, and epidemiology to guide preventive measures and therapeutic interventions.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate gastrointestinal and hepatic drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in gastroenterology and hepatology practice.
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.	3.2.5.1	Provide counseling to patients and healthcare team members on correct use of medications, including OTC gastrointestinal/hepatic agents and relevant devices, ensuring understanding of dosing and precautions.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promote awareness among patients and the community about the risks of misuse of gastrointestinal/hepatic medications and other substances, encouraging safe and responsible use.

#### **Domain 4: Personal Practice**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in gastroenterology and hepatology practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically evaluate gastrointestinal and hepatic clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with patients, colleagues, and the healthcare team using verbal, written, and non-verbal methods to convey accurate clinical information in gastroenterology and hepatology practice.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and multimedia to present gastrointestinal and hepatic patient cases, research findings, or educational materials professionally.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the gastroenterology and hepatology rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Engage in self-directed learning to enhance knowledge and skills in gastroenterology and hepatology, supporting continuous professional development.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					
7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

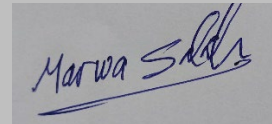
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Nephrology and Urology Clinical Pharmacy Rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Elective</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>



## 2. Rotation Overview (Brief summary of scientific content)

The purpose of this rotation is to develop the trainees' knowledge-based competencies and clinical skills required to deal professionally with a wide range of general medicine-related diseases (endocrine (e.g., endocrine disorders, gastrointestinal disorders, renal disorders, cardiovascular disorders, and other chronic conditions) and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at any adult general medicine rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess renal and urological conditions and support clinical decision-making.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate nephrology- and urology-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of renal and urological medications and evaluate their appropriateness, effectiveness, and safety for patients.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address nephrology- and urology-related therapeutic problems and guide evidence-based recommendations.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based nephrology and urology guidelines and literature to support informed clinical decisions in renal and urological pharmacotherapy.

## Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in nephrology and urology clinical practice.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing renal and urological patients.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform accurate pharmaceutical and nephrology/urology-specific dose calculations, pharmacokinetic adjustments, and therapeutic monitoring.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Recognize renal or urological emergencies and provide immediate basic life support or refer appropriately in clinical settings.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify nephrology- and urology-related medication issues and implement evidence-based interventions, counseling, or referrals.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible nephrology, urology, and pharmacy references to interpret, verify, and support clinical decision-making in patient care.

## Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Apply knowledge of renal and urological disease causes, pathophysiology, diagnostic findings, and epidemiology to guide preventive measures and therapeutic interventions.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate nephrology and urology drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in nephrology and urology practice.
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.	3.2.5.1	Provide counseling to renal and urological patients and healthcare team members on correct use of medications, including OTC nephrology/urology agents and relevant devices, ensuring understanding of dosing and precautions.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promote awareness among patients and the community about the risks of misuse of nephrology/urology medications and other substances, encouraging safe and responsible use.

#### **Domain 4: Personal Practice**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in nephrology and urology practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically evaluate nephrology and urology clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with renal and urological patients, colleagues, and the healthcare team using verbal, written, and non-verbal methods to convey accurate clinical information.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and multimedia to present nephrology and urology patient cases, research findings, or educational materials professionally.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the nephrology and urology rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Engage in self-directed learning to enhance knowledge and skills in nephrology and urology, supporting continuous professional development.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					
7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

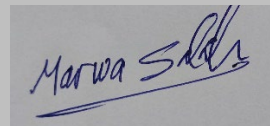
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Infectious Diseases Clinical Pharmacy Rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Elective</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

This rotation is designed to provide the trainee with an opportunity to develop his/her skills in management of simple and complex infectious diseases (bacterial, viral, fungal, and protozoal infections), being an active member of team of health professionals, and taking part in therapeutic decision making, its application and monitoring. It is expected that trainees will be exposed to a broad range of major syndromes including community and hospital-acquired infections like pneumonia, infective endocarditis, skin and soft tissue, gastrointestinal, bloodstream infections, urinary tract infections and the evaluation of fever. During this course, the trainee will spend time working closely with the Antimicrobial Stewardship team. During this rotation, trainees will work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess infectious disease conditions and support clinical decision-making in infectious disease management.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate infectious disease-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of antimicrobial medications and evaluate their appropriateness, effectiveness, and safety for patients with infectious diseases.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address infectious disease-related therapeutic problems and guide evidence-based antimicrobial therapy.



<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based infectious disease guidelines and literature to support informed clinical decisions in antimicrobial pharmacotherapy.

## Domain 2: Professional and Ethical Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in infectious disease clinical practice.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing patients with infectious diseases.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform accurate antimicrobial dose calculations, pharmacokinetic adjustments, and therapeutic monitoring for infectious disease patients.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Recognize infectious disease emergencies (e.g., sepsis, severe drug reactions) and provide immediate appropriate interventions or referrals.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify medication-related issues in infectious disease patients and implement evidence-based interventions, counseling, or referrals.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible infectious disease and pharmacy references to interpret, verify, and support clinical decision-making in patient care.

### Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Apply knowledge of infectious disease causes, epidemiology, pathophysiology, and diagnostic findings to guide preventive measures and therapeutic interventions.
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate antimicrobial drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance principles to identify, report, and prevent medication-related risks in infectious disease management.
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.	3.2.5.1	Provide counseling to infectious disease patients and healthcare team members on correct use of medications, including OTC antimicrobials and relevant devices, ensuring understanding of dosing and precautions.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promote awareness among patients and the community about the risks of antimicrobial misuse and resistance, encouraging safe and responsible use.

### Domain 4: Personal Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in infectious disease practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically evaluate infectious disease clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with infectious disease patients, colleagues, and the healthcare team using verbal, written, and non-verbal methods to convey accurate clinical information.
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and multimedia to present infectious disease patient cases, research findings, or educational materials professionally.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the infectious disease rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Engage in self-directed learning to enhance knowledge and skills in infectious disease pharmacotherapy, supporting continuous professional development.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					
7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

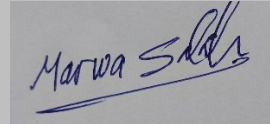
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Pediatrics and Neonates Clinical Pharmacy Rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Elective</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The purpose of this rotation is to provide trainees with experience and competencies in the pharmaceutical care of pediatric patients in general and neonatal in specific. This will include building the trainee's knowledge of pediatric/neonatal disorders, related treatments, and sources of pediatric medication information. In addition, the trainee will develop patients' problem-solving skills through a variety of patient care experiences. The trainee will work with and participate in daily work rounds. During this rotation, trainees will spend 6 weeks at pediatrics/neonates rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess pediatric and neonatal conditions and support clinical decision-making in pediatric pharmacotherapy.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate pediatric and neonatal-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of pediatric and neonatal medications and evaluate their appropriateness, effectiveness, and safety for children and infants.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address pediatric and neonatal therapeutic problems and guide evidence-based recommendations.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based pediatric and neonatal guidelines and literature to support informed clinical decisions in pediatric pharmacotherapy.

## Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in pediatric and neonatal clinical practice.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing pediatric and neonatal patients.
2.2.4	Adopt the principles of pharmaceutical calculations, biostatistical analysis, bioinformatics, pharmacokinetics, and bio-pharmaceutics and their applications in new drug delivery systems, dose modification, bioequivalence studies, and pharmacy practice.	2.2.4.1	Perform accurate pediatric- and neonatal-specific dose calculations, pharmacokinetic adjustments, and therapeutic monitoring.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Recognize pediatric and neonatal emergencies and provide immediate age-appropriate interventions or refer appropriately in clinical settings.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify pediatric and neonatal medication-related issues and implement evidence-based interventions, counseling, or referrals.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible pediatric and neonatal pharmacotherapy references to interpret, verify, and support clinical decision-making in patient care.

## Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Apply knowledge of pediatric and neonatal disease causes, epidemiology, pathophysiology, and diagnostic findings to guide preventive measures and therapeutic interventions.



<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate pediatric and neonatal drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for children and infants.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in pediatric and neonatal patients.
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.	3.2.5.1	Provide counseling to parents, caregivers, and healthcare team members on correct use of medications, including OTC pediatric formulations and relevant devices, ensuring comprehension of dosing and precautions.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promote awareness among families and the community about the risks of pediatric medication misuse, encouraging safe and responsible drug use.

#### **Domain 4: Personal Practice**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in pediatric and neonatal practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically evaluate pediatric and neonatal clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with pediatric patients, their families, and healthcare team members using verbal, written, and non-verbal methods to convey accurate clinical information.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and multimedia to present pediatric and neonatal patient cases, research findings, or educational materials professionally.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the pediatric and neonatal rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Engage in self-directed learning to enhance knowledge and skills in pediatric and neonatal pharmacotherapy, supporting continuous professional development.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					
7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

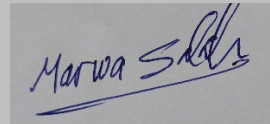
Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Name and Signature  
Coordinator



**Dr. Mahmoud Samaha**

Name and Signature  
Program Director



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Geriatrics (Elderly) Clinical Pharmacy Rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Elective</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

This rotation is based on preparing a pharmacist who can describe the physiological changes that occur as a result of aging and discuss how these changes affect the pharmacokinetics of drugs in the elderly patient. This rotation aims to prepare a pharmacist who can describe the pathophysiology, therapeutic interventions, and control criteria for common diseases faced by the elderly including ischemic heart diseases, bowel/bladder incontinence, common anemias, congestive heart failure, dementia, depression, insomnia, diabetes, and hypertension, arrhythmia, osteoporosis, Parkinson's disease, peptic ulcer disease, pneumonia, pressure sores, urinary tract infections, epileptic seizures. The trainee is also given the ability to communicate relevant information related to drug therapy to patients and health care providers. During this rotation, trainees will spend 6 weeks at geriatrics rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences to provide safe and effective pharmacy care for elderly patient.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate pharmaceutical and medical terminology, abbreviations, and symbols appropriate for health care of geriatric patient when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	understand mechanisms of action of drugs related to geriatric patients care and evaluate their appropriateness, effectiveness, and safety for elderly patients.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Use principles from fundamental sciences to evaluate and solve therapeutic problems encountered in the care of geriatric patients.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Uses scientific literature and interprets relevant clinical information to support sound professional decision-making in geriatric patient care.

## Domain 2: Professional and Ethical Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
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.	2.1.1.1	Performs responsibilities and exercises authority in accordance with the legal and professional roles of all members of the health care team involved in geriatric patient care.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrates the ethical principles of health care and the pharmacy profession while respecting geriatric patients' rights and valuing diversity.
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.	2.2.4.1	Demonstrates the application of pharmaceutical calculations, pharmacokinetics, biostatistics, bioinformatics, and biopharmaceutics in designing drug delivery systems, modifying doses, evaluating bioequivalence, and providing evidence-based pharmacy care for older adults.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Applies knowledge of first aid interventions to respond effectively in life-threatening situations involving older adults.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Implements interventions to address and manage drug therapy and pharmaceutical care issues in older adults.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Applies critical appraisal skills to analyze and interpret evidence-based information relevant to the care of older adults.

### Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Integrates disease etiology, clinical features, and diagnostics to inform pharmacotherapy for geriatric patients.
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Utilizes knowledge of drug mechanisms, indications, dosing, contraindications, adverse effects, and interactions to guide safe and effective pharmacotherapy for older adults.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Implements clinical pharmacology and pharmacovigilance knowledge to promote safe, effective, and rational therapy for older adults.
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.	3.2.5.1	Provides guidance and education to older adults, health care team members, and the community regarding proper use of medications and medical devices.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promotes public awareness of the social and health risks associated with drug misuse and abuse, with attention to older adults.

### Domain 4: Personal Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Takes accountability for health care team outcomes, evaluates peers constructively, and manages time efficiently in geriatric patient care activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Applies critical thinking to evaluate information, solve therapeutic issues, and function effectively both autonomously and within a health care team for older adults.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Applies strong communication skills to interact effectively with older adults, health care professionals, and community members.
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Uses modern technological tools and media to communicate information clearly and effectively in presentations for older adult care.



<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Engages in reflective practice to enhance skills, knowledge, and professional development for older adult care.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Practices self-directed learning to maintain and advance competencies for the care of older adults.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					
7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

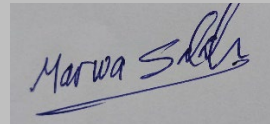
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

Rotation Title (according to the bylaw)	<b>Neuropsychiatric Clinical Pharmacy Rotation</b>
Rotation Code (according to the bylaw)	-
Department/s participating in delivery of the Rotation	-
Number of hours	<b>Total 180 actual hours</b>
Rotation Type	<b>Elective</b>
Academic level at which the rotation is taught	<b>Compulsory Training Program (Internship) for Pharmacists</b>
Academic Program	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
Faculty/Institute	<b>Faculty of Pharmacy</b>
University/Academy	<b>Mansoura University</b>
Name of Coordinator	<b>Prof. Dr. Rania El-Shaheny</b>
Rotation specification Approval Date	<b>10/21/2025</b>
Rotation specification Approval	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The goal of this rotation in neuropsychiatry is to give the trainee an understanding of the recognition, diagnosis, and treatment of neuropsychiatric disorders and monitoring the safe and effective use of psychotropic medications. Trainees in this rotation will learn concepts of pain physiology, assessment, and management. The trainee is also given the ability to communicate relevant information related to drug therapy to patients and health care providers. During this rotation, trainee will spend 6 weeks at rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess Neuropsychiatric conditions and support clinical decision-making in Neuropsychiatric practice.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate Neuropsychiatric-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of Neuropsychiatric medications and evaluate their appropriateness, effectiveness, and safety for Neuropsychiatric patients.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address Neuropsychiatric therapeutic problems and guide evidence-based recommendations.
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based Neuropsychiatric guidelines and literature to support informed clinical decisions in Neuropsychiatric pharmacotherapy.

#### Domain 2: Professional and Ethical Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in Neuropsychiatric clinical practice.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing Neuropsychiatric patients.
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.	2.2.4.1	Perform accurate pharmaceutical and Neuropsychiatric-specific dose calculations, pharmacokinetic adjustments, and therapeutic monitoring.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Recognize Neuropsychiatric emergencies and provide immediate basic life support or refer appropriately in clinical settings.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify Neuropsychiatric medication-related issues and implement evidence-

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
			based interventions, counseling, or referrals.
<b>2.5.2</b>	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	<b>2.5.2.1</b>	Use credible Neuropsychiatric and pharmacy references to interpret, verify, and support clinical decision-making in patient care.

### Domain 3: Pharmaceutical Care

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
<b>3.1.4</b>	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	<b>3.1.4.1</b>	Apply knowledge of Neuropsychiatric disease causes, pathophysiology, diagnostic findings, and epidemiology to guide preventive measures and therapeutic interventions.
<b>3.2.1</b>	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	<b>3.2.1.1</b>	Evaluate Neurologic drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for Neuropsychiatric patients.
<b>3.2.2</b>	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	<b>3.2.2.1</b>	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in the community pharmacy.
<b>3.2.5</b>	Educate and counsel patients, other health care professionals, and communities about safe and proper use of medicines including OTC preparations and medical devices.	<b>3.2.5.1</b>	Provide counseling to Neuropsychiatric patients and healthcare team members on correct use of medications, including OTC Neuropsychiatric agents and relevant devices, ensuring comprehension of dosing and precautions.
<b>3.2.6</b>	Maintain public awareness on social health hazards of drug misuse and abuse.	<b>3.2.6.1</b>	Promote awareness among patients and the community about the risks of misuse of

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
			Neuropsychiatric medications and other substances, encouraging safe and responsible use.

#### Domain 4: Personal Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in Neurology practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically evaluate Neuropsychiatric clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with Neuropsychiatric patients, colleagues, and the healthcare team using verbal, written, and non-verbal methods to convey accurate clinical information.
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and multimedia to present Neuropsychiatric patient cases, research findings, or educational materials professionally.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the Neuropsychiatric rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Pursue independent learning to enhance continuous professional development.



#### 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

#### 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					

7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

**\*Rating**

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

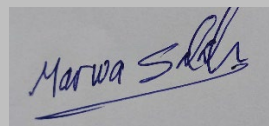
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

Rotation Title (according to the bylaw)	<b>Obstetrics and Gynecology Clinical Pharmacy Rotation</b>
Rotation Code (according to the bylaw)	-
Department/s participating in delivery of the Rotation	-
Number of hours	<b>Total 180 actual hours</b>
Rotation Type	<b>Elective</b>
Academic level at which the rotation is taught	<b>Compulsory Training Program (Internship) for Pharmacists</b>
Academic Program	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
Faculty/Institute	<b>Faculty of Pharmacy</b>
University/Academy	<b>Mansoura University</b>
Name of Coordinator	<b>Prof. Dr. Rania El-Shaheny</b>
Rotation specification Approval Date	<b>10/21/2025</b>
Rotation specification Approval	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

This rotation qualifies trainees to deal with patients before and after childbirth, as the trainee will gain experience in maternal complications: preeclampsia, obstructed labor, sepsis, and postpartum hemorrhage. During this rotation, trainees will spend 6 weeks at rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess obstetric conditions and support clinical decision-making in obstetrics and gynecology practice.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate obstetric -related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of obstetric medications and evaluate their appropriateness, effectiveness, and safety for obstetric patients.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address obstetric therapeutic problems and guide evidence-based recommendations.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based obstetric guidelines and literature to support informed clinical decisions in obstetric pharmacotherapy.

### Domain 2: Professional and Ethical Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in obstetric clinical practice.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing obstetric patients.
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.	2.2.4.1	Perform accurate pharmaceutical and obstetric-specific dose calculations, pharmacokinetic adjustments, and therapeutic monitoring.
2.4.2	Demonstrate understanding of the first aid measures needed to save patient's life.	2.4.2.1	Recognize obstetric emergencies and provide immediate basic life support or refer appropriately in clinical settings.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify Neuropsychiatric medication-related issues and implement evidence-based interventions, counseling, or referrals.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible obstetric and pharmacy references to interpret, verify, and support clinical decision-making in patient care.

**Domain 3: Pharmaceutical Care**

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
<b>3.1.4</b>	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	<b>3.1.4.1</b>	Apply knowledge of obstetric disease causes, pathophysiology, diagnostic findings, and epidemiology to guide preventive measures and therapeutic interventions.
<b>3.2.1</b>	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	<b>3.2.1.1</b>	Evaluate obstetric drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for obstetric patients.
<b>3.2.2</b>	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	<b>3.2.2.1</b>	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in the community pharmacy.
<b>3.2.5</b>	Educate and counsel patients, other health care professionals, and communities about safe and proper use of medicines including OTC preparations and medical devices.	<b>3.2.5.1</b>	Provide counseling to obstetric patients and healthcare team members on correct use of medications, including OTC obstetric agents and relevant devices, ensuring comprehension of dosing and precautions.
<b>3.2.6</b>	Maintain public awareness on social health hazards of drug misuse and abuse.	<b>3.2.6.1</b>	Promote awareness among patients and the community about the risks of misuse of obstetric medications and other substances, encouraging safe and responsible use.

#### Domain 4: Personal Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in obstetric practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically evaluate obstetric clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with obstetric patients, colleagues, and the healthcare team using verbal, written, and non-verbal methods to convey accurate clinical information.
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and multimedia to present obstetric patient cases, research findings, or educational materials professionally.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the Obstetrics and Gynecology rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Pursue independent learning to enhance continuous professional development.

## 4. Teaching and Learning Methods

### 1. Practical Field Training Learning



2. Self-Directed and Lifelong Learning (Research and Presentation).

5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					
7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

**\*Rating**

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

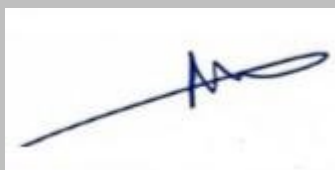
**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

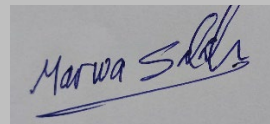
*N.B.: The minimum score for passing this rotation is 60%.*

Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Name and Signature  
Coordinator



Name and Signature  
Program Director



**Prof. Dr. Marwa Salah El-Dahan**

**Dr. Mahmoud Samaha**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

Rotation Title (according to the bylaw)	<b>Critical Care Clinical Pharmacy Rotation</b>
Rotation Code (according to the bylaw)	-
Department/s participating in delivery of the Rotation	-
Number of hours	<b>Total 180 actual hours</b>
Rotation Type	<b>Elective</b>
Academic level at which the rotation is taught	<b>Compulsory Training Program (Internship) for Pharmacists</b>
Academic Program	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
Faculty/Institute	<b>Faculty of Pharmacy</b>
University/Academy	<b>Mansoura University</b>
Name of Coordinator	<b>Prof. Dr. Rania El-Shaheny</b>
Rotation specification Approval Date	<b>10/21/2025</b>
Rotation specification Approval	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The purpose of this rotation is to develop the trainees' knowledge base competencies and clinical skills required to deal professionally with a wide range of critically ill patients and provide the required pharmaceutical care for patients in different critical care areas including intensive care units (ICU) including medical and surgical ICU, coronary care units (CCU), neuro-intensive care units (NICU), etc., During this rotation, trainee will spend 6 weeks at a critical care rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess critical care conditions and support clinical decision-making in critical care practice.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate critical care-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of critical care medications and evaluate their appropriateness, effectiveness, and safety for critical care patients.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address critical care therapeutic problems

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
			and guide evidence-based recommendations.
<b>1.1.6</b>	Utilize scientific literature, and collect and interpret information to enhance professional decision.	<b>1.1.6.1</b>	Evaluate evidence-based critical care guidelines and literature to support informed clinical decisions in obstetric pharmacotherapy.
<b>1.1.7</b>	Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care.	<b>1.1.7.1</b>	Apply advanced critical-thinking skills to recognize and analyze new challenges influencing drug therapy and patient outcomes in critical care practice.

## Domain 2: Professional and Ethical Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
<b>2.1.1</b>	Perform responsibilities and authorities in compliance with the legal and professional structure and role of all members of the health care professional team.	<b>2.1.1.1</b>	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in critical care clinical practice.
<b>2.1.2</b>	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	<b>2.1.2.1</b>	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing critical care patients.
<b>2.2.4</b>	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.	<b>2.2.4.1</b>	Perform accurate pharmaceutical and critical care-specific dose calculations, pharmacokinetic adjustments, and therapeutic monitoring.
<b>2.4.2</b>	Demonstrate understanding of the first aid measures needed to save patient's life.	<b>2.4.2.1</b>	Recognize critical care emergencies and provide immediate basic life support or refer appropriately in clinical settings.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify critical care medication-related issues and implement evidence-based interventions, counseling, or referrals.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible critical care and pharmacy references to interpret, verify, and support clinical decision-making in patient care.

### Domain 3: Pharmaceutical Care

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Apply knowledge of critical care disease causes, pathophysiology, diagnostic findings, and epidemiology to guide preventive measures and therapeutic interventions.
3.1.3	Monitor and control microbial growth and carry out laboratory tests for identification of infections/diseases.	3.1.3.1	Monitor and optimize antimicrobial therapy and utilize laboratory diagnostics to identify and manage infections in critical care patients.
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate obstetric drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for critical care patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in the community pharmacy.
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.	3.2.5.1	Provide counseling to critical care patients and healthcare team members on correct use of medications, including OTC critical care agents and relevant devices, ensuring comprehension of dosing and precautions.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
<b>3.2.6</b>	Maintain public awareness on social health hazards of drug misuse and abuse.	<b>3.2.6.1</b>	Promote awareness among patients and the community about the risks of misuse of critical care medications and other substances, encouraging safe and responsible use.

#### Domain 4: Personal Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
<b>4.1.1</b>	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	<b>4.1.1.1</b>	Take responsibility for collaborative tasks in critical care practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
<b>4.1.2</b>	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	<b>4.1.2.1</b>	Collect and critically evaluate critical care clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.
<b>4.2.2</b>	Use contemporary technologies and media to demonstrate effective presentation skills.	<b>4.2.2.1</b>	Utilize digital tools and multimedia to present critical care patient cases, research findings, or educational materials professionally.
<b>4.3.1</b>	Perform self-assessment to enhance professional and personal competencies.	<b>4.3.1.1</b>	Reflect on personal performance in the critical care clinical pharmacy rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
<b>4.3.2</b>	Practice independent learning needed for continuous professional development.	<b>4.3.2.1</b>	Pursue independent learning to enhance continuous professional development.



#### 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

#### 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					

7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

**\*Rating**

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

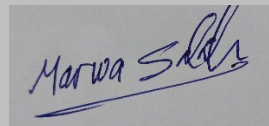
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Oncology and Hematology Clinical Pharmacy Rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Elective</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The purpose of this rotation is to develop the trainees' knowledge-based competencies and clinical skills required to deal professionally with a wide range of solid tumors related cases (e.g., breast cancer, lung cancer, gastric cancer, colon cancer and genitourinary tract cancer) as well as hematologic malignancies (e.g., Leukemias, Hodgkin's and Non-Hodgkin's lymphoma and Multiple myeloma), hematologic diseases, including disorders of red blood cells (anemia), white blood cells and platelets (thrombocytopenia), and coagulation factors and bleeding disorders. This rotation also addresses cases for clinical nutrition support and pain management needs and provide the required pharmaceutical care for these patients. During this rotation, trainees will spend 6 weeks at an oncology and or hematology rotation site and work closely with their preceptor and the training will be a dynamic experience to ensure the necessary skills are developed.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess oncology and hematology conditions and support clinical decision-making in oncology and hematology practice.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate oncology and hematology-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of medications of oncology and hematology and evaluate their appropriateness, effectiveness, and safety for obstetric patients.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address oncology and hematology therapeutic problems and guide evidence-based recommendations.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
1.1.6	Utilize scientific literature, and collect and interpret information to enhance professional decision.	1.1.6.1	Evaluate evidence-based guidelines of oncology and hematology and literature to support informed clinical decisions in obstetric pharmacotherapy.
1.1.7	Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care.	1.1.7.1	Apply advanced critical-thinking skills to recognize and analyze new challenges influencing drug therapy and oncology and hematology patient health care.

### Domain 2: Professional and Ethical Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in clinical practice related to oncology and hematology.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing obstetric patients.
2.2.2	Apply the basic requirements of quality management system in developing, manufacturing, analyzing, storing, and distributing pharmaceutical materials/products considering various incompatibilities.	2.2.2.1	Implement core principles of quality management systems in the preparation, handling, analysis, storage, and dispensing of oncology and hematology medications, while accounting for drug interactions and incompatibilities.
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.	2.2.4.1	Perform accurate pharmaceutical and specific dose calculations for oncology and hematology patients, pharmacokinetic adjustments, and therapeutic monitoring.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify oncology and hematology medication-related issues and implement evidence-based interventions, counseling, or referrals.
2.5.2	Retrieve, interpret, and critically evaluate evidence-based information needed in pharmacy profession.	2.5.2.1	Use credible obstetric and pharmacy references to interpret, verify, and support clinical decision-making in patient care.

### Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.1	Apply the principles of body function and basis of genomics in health and disease states to manage different diseases.	3.1.1.1	Apply knowledge of human physiology and genomics to understand disease mechanisms and optimize the management of oncologic and hematologic conditions.
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Apply knowledge of oncology and hematology disease causes, pathophysiology, diagnostic findings, and epidemiology to guide preventive measures and therapeutic interventions.
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate oncology and hematology drug actions, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for oncology and hematology patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent medication-related risks in the community pharmacy.
3.2.3	Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals.	3.2.3.1	Deliver evidence-based guidance on the safe and effective use of complementary therapies, including phytotherapy, aromatherapy, and nutraceuticals, in oncology and hematology patients.
3.2.4	Provide information about toxic profiles of drugs and other xenobiotics including sources, identification, symptoms, and management control.	3.2.4.1	Provide evidence-based information on the toxicological profiles of drugs and other xenobiotics, including their sources, identification, clinical manifestations, and strategies for prevention and management in oncology and hematology patients.
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.	3.2.5.1	Provide counseling to oncology and hematology patients and healthcare team members on correct use of medications, including OTC agents for oncology and hematology and relevant devices, ensuring comprehension of dosing and precautions.

### Domain 4: Personal Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically evaluate oncology and hematology clinical information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.3	Demonstrate creativity and apply entrepreneurial skills within a simulated entrepreneurial activity.	4.1.3.1	Demonstrate innovative thinking and apply entrepreneurial skills in simulated pharmacy-based initiatives or projects.
4.2.1	Demonstrate effective communication skills verbally, non-verbally, and in writing with professional health care team, patients, and communities.	4.2.1.1	Communicate clearly with oncology and hematology patients, colleagues, and the healthcare team using verbal, written, and non-verbal methods to convey accurate clinical information.
4.2.2	Use contemporary technologies and media to demonstrate effective presentation skills.	4.2.2.1	Utilize digital tools and multimedia to present obstetric patient cases, research findings, or educational materials professionally.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the oncology and hematology rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Pursue independent learning to enhance continuous professional development.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).



## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state and drug therapy for clinical decision making.					
2	Assesses patient medical and medication history.					
3	Identifies drug related problem(s) ( <b>at least 5 medication error reporting</b> ).					
4	Responds to and fills out <b>at least 5 drug information requests</b> during the rotation.					
5	Demonstrates the ability to develop and implement a pharmaceutical care plan, evaluates, and adjusts doses of different medications, performs pharmaceutical calculations related to medication orders, and interprets laboratory values and adjusts medications accordingly.					
6	Communicates (verbally) effectively with patients and other healthcare professionals and provides effective medication counseling and patient education (if applicable).					
7	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
8	Performs <b>at least one case presentation</b> that should be performed at the end of the rotation.					
9	Performs <b>topic discussion</b> that addresses various topics including disease state, guideline comparison and update, or drug class comparison in a disease state ( <b>two - three topic discussions</b> ).					
10	Performs <b>one journal club</b> at the end of the rotation.					
11	Graded written counseling and education materials ( <b>minimum of 3-5 activities</b> )					
12	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
[2] Satisfactory	Displays attributes consistent with readiness to enter general practice
[1] Poor	Often perform at a level below the expected level
[NA] Not applicable	Not performed during this rotation

Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
- Academic supervisor using a summative written report about the trainees.

**Scoring:**

$$\text{Rotation Score (\%)} = \frac{\text{Total marks scored by the trainee (... ..)} \times 100}{\text{Number of Evaluation Elements (... ..)} \times 4}$$

*N.B.: The minimum score for passing this rotation is 60%.*

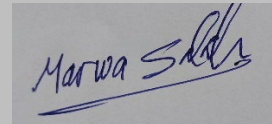
<b>Final Evaluation</b>	<b>Result</b>
<b>The trainee has successfully passed the training rotation (..... %).</b>	
<b>The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).</b>	
<b>The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).</b>	

**Name and Signature  
Coordinator**



**Dr. Mahmoud Samaha**

**Name and Signature  
Program Director**



**Prof. Dr. Marwa Salah El-Dahan**



**Mansoura University  
Faculty of Pharmacy  
Bachelor of Pharmacy (Pharm D) Clinical Pharmacy  
Program**

**Academic Year**

**2025 / 2026**

**1. Basic Information**

<b>Rotation Title (according to the bylaw)</b>	<b>Clinical Nutrition Support Rotation</b>
<b>Rotation Code (according to the bylaw)</b>	-
<b>Department/s participating in delivery of the Rotation</b>	-
<b>Number of hours</b>	<b>Total 180 actual hours</b>
<b>Rotation Type</b>	<b>Elective</b>
<b>Academic level at which the rotation is taught</b>	<b>Compulsory Training Program (Internship) for Pharmacists</b>
<b>Academic Program</b>	<b>Bachelor of Pharmacy (Pharm D) clinical pharmacy program</b>
<b>Faculty/Institute</b>	<b>Faculty of Pharmacy</b>
<b>University/Academy</b>	<b>Mansoura University</b>
<b>Name of Coordinator</b>	<b>Prof. Dr. Rania El-Shaheny</b>
<b>Rotation specification Approval Date</b>	<b>10/21/2025</b>
<b>Rotation specification Approval</b>	<a href="#"><u>Link</u></a>

## 2. Rotation Overview (Brief summary of scientific content)

The goals for this rotation are to provide the trainee with a general understanding of issues related to specialized nutrition support and the influence of disease state and pathogenesis on nutritional status of patient and nutrient requirements. This rotation will give the trainee the opportunity to develop skills in patient assessment, patient monitoring, enteral and parenteral nutrition formulation, and formula adjustment and diet fortification. The trainee should also increase their proficiency in communication techniques so as to facilitate interaction with other health care professionals and patients. The rotation will be tailored to the trainee's strengths and weaknesses, especially as related to basic topics such as fluid and electrolyte balance, interpretation of blood gas values and laboratory tests, and effects of medications on fluid balance, electrolytes, and laboratory tests.

## 3. Rotation Learning Outcomes CLOs

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

#### Domain 1: Fundamental Knowledge

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
1.1.1	Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1.1.1.1	Apply foundational pharmaceutical and biomedical knowledge to assess nutritional status and support clinical decision-making in patient nutrition care.
1.1.2	Utilize the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice.	1.1.2.1	Use accurate nutrition care-related pharmaceutical and medical terminology, abbreviations, and symbols when documenting and communicating clinical nutrition information.
1.1.4	Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1.1.4.1	Interpret mechanisms of action of clinical nutrition medications and evaluate their appropriateness, effectiveness, and safety for patients.
1.1.5	Retrieve information from fundamental sciences to solve therapeutic problems.	1.1.5.1	Utilize scientific and clinical resources to address clinical nutrition therapeutic problems and guide evidence-based recommendations.
1.1.7	Identify and critically analyze newly emerging issues influencing pharmaceutical industry and patient health care.	1.1.7.1	Apply advanced critical-thinking skills to recognize and analyze new challenges influencing drug therapy and patient outcomes in clinical nutrition practice.

## Domain 2: Professional and Ethical Practice

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
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.	2.1.1.1	Adhere to legal and professional regulations while collaborating effectively with healthcare team members in clinical nutrition practice.
2.1.2	Adopt ethics of health care and pharmacy profession respecting patients' rights and valuing people diversity.	2.1.2.1	Demonstrate ethical behavior by respecting patient confidentiality, rights, and cultural differences when managing clinical nutrition cases.
2.1.3	Recognize own personal and professional limitations and accept the conditions of referral to or guidance from other members of the health care team.	2.1.3.1	Identify personal and professional limitations and appropriately seek guidance or refer patients to other healthcare team members for optimal nutrition care.
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.	2.2.4.1	Perform accurate pharmaceutical and specific nutritional dose calculations, pharmacokinetic adjustments, and therapeutic monitoring.
2.4.3	Take actions to solve any identified medicine-related and pharmaceutical care problems.	2.4.3.1	Identify issues related to medications and nutritional supplements, and implement evidence-based interventions, counseling, or referrals.

## Domain 3: Pharmaceutical Care

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Rotation Learning Outcomes Upon completion of the rotation, the student will be able to:	
Code	Text	Code	Text
3.1.1	Apply the principles of body function and basis of genomics in health and disease states to manage different diseases.	3.1.4.1	Apply knowledge of causes of disease related to nutritional disorders, pathophysiology, diagnostic findings, and epidemiology to guide preventive measures and therapeutic interventions.
3.1.4	Relate etiology, epidemiology, pathophysiology, laboratory diagnosis, and clinical features of infections/diseases and their pharmacotherapeutic approaches.	3.1.4.1	Find the correlation between the disease and nutrition, pathophysiology, diagnostic findings, and epidemiology to guide preventive nutritional measures.
3.2.1	Integrate the pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, adverse drug reactions and drug interactions.	3.2.1.1	Evaluate the actions of nutritional supplements, indications, dosing, contraindications, side effects, and interactions to ensure safe and effective therapy for patients.
3.2.2	Apply the principles of clinical pharmacology and pharmacovigilance for the rational use of medicines and medical devices.	3.2.2.1	Apply clinical pharmacology and pharmacovigilance concepts to identify, report, and prevent nutritional supplements-related risks in the community pharmacy.

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
3.2.3	Provide evidence-based information about safe use of complementary medicine including phytotherapy, aromatherapy, and nutraceuticals.	3.2.3.1	Deliver evidence-based guidance on the safe and effective use of complementary therapies, including phytotherapy, aromatherapy, and nutraceuticals in patients with nutritional disorders.
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.	3.2.5.1	Provide nutritional counseling to patients and healthcare team members on correct use of medications, including OTC supplements and relevant devices, ensuring comprehension of dosing and precautions.
3.2.6	Maintain public awareness on social health hazards of drug misuse and abuse.	3.2.6.1	Promote awareness among patients and the community about the risks of misuse of nutritional supplements and other substances, encouraging safe and responsible use.

#### Domain 4: Personal Practice

<b>Program Outcomes (NARS/ARS)</b> (according to the matrix in the program specs)		<b>Rotation Learning Outcomes</b> Upon completion of the rotation, the student will be able to:	
<b>Code</b>	<b>Text</b>	<b>Code</b>	<b>Text</b>
4.1.1	Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4.1.1.1	Take responsibility for collaborative tasks in clinical nutrition practice, provide constructive feedback to peers, and manage time effectively during rotation activities.
4.1.2	Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4.1.2.1	Collect and critically evaluate clinical nutrition information, solve patient-related therapeutic problems, and contribute effectively both independently and within the clinical team.
4.3.1	Perform self-assessment to enhance professional and personal competencies.	4.3.1.1	Reflect on personal performance in the clinical nutrition support rotation to identify strengths and areas for improvement, enhancing clinical and professional competencies.
4.3.2	Practice independent learning needed for continuous professional development.	4.3.2.1	Pursue independent learning to enhance continuous professional development.

## 4. Teaching and Learning Methods

1. Practical Field Training Learning
2. Self-Directed and Lifelong Learning (Research and Presentation).

## 5. Methods of assessment of Trainee

Performance Evaluation Elements		*Rating (Max = 4)				
No	Please rate the trainee's performance according to the mentioned activity	1	2	3	4	NA
1	Demonstrates appropriate understanding of specific disease state for clinical nutrition decision making.					
2	Assesses patient medical history including active problems, PMH, laboratory data, physical assessment, and diagnostic measures.					
3	Assesses the nutritional risk of the patient using validated tools including dietary, anthropometric, clinical, biochemical, and sociologic assessment. <b>(minimum of 3 activities)</b> .					
4	Recognizes differences between adult and pediatric enteral/parenteral nutrition guidelines and requirements in different disease states; cardiovascular, hepatic, renal and oncologic diseases.					
5	Estimates caloric and protein requirements for a patient and formulates a parenteral nutrition plan to meet these requirements.					
6	Recognizes different types of specialized formulas available for use in parenteral & enteral nutrition formulations & when these formulas might be recommended.					
7	Reviews and verifies enteral/parenteral nutrition protocols including recognizing their purposes, goals of therapy and contraindication based on the comorbid chronic disease state and recommends relevant parameters to monitor efficacy and safety as well as needed plan modifications <b>(minimum of five enteral/parenteral order verification activities)</b> .					
8	Performs <b>at least two aseptic technique review and PN aseptic compounding activities</b>					
9	Graded written counseling and education materials at discharge <b>(minimum of 2 activities)</b>					
10	Performs <b>at least one case and nutritional care plan presentation</b> to preceptors and peers at the end of the rotation.					
11	Consistently and continuously, identifies, recognizes, documents and reports ADRs form as directed by the preceptor.					
12	Communicates (verbally) effectively with patients and caregivers professionals regarding the nutritional formula.					
13	Complies with ethics, laws and regulations, respects patients' confidentiality and adheres to dress code, well groomed; maintains good personal hygiene.					
14	Any additional activity assigned by the preceptor.					
<b>Total Marks</b>						

### \*Rating

[4] Excellent	Consistently performs above the expected level
[3] Very Good	Often performs at expected level
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[1] Poor	Often perform at a level below the expected level
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Field training will be assessed by:

- Workplace supervisor using a quantitative questionnaire regarding the different qualities of the trainee (Evaluation sheets)
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*N.B.: The minimum score for passing this rotation is 60%.*

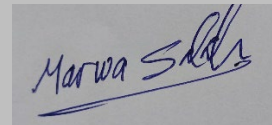
Final Evaluation	Result
The trainee has successfully passed the training rotation (..... %).	
The trainee has to repeat the training rotation (unexcused absence of more than 25% of the training days (..... .. absence days/hours equivalent to ..... % of the training days).	
The trainee has to repeat the training rotation (did not obtain the minimum level to pass the training round; 60%).	

Name and Signature  
Coordinator



**Dr. Mahmoud Samaha**

Name and Signature  
Program Director



**Prof. Dr. Marwa Salah El-Dahan**