

## **Iraqi Board For Medical Specialties**

### **The Academic Curriculum And Training Program For Fellowship Of Clinical Pharmacy**



#### **Introduction**

Clinical Pharmacy is a branch of pharmacy focused on optimizing medication therapy, ensuring patient safety, and promoting rational drug use. Clinical pharmacists collaborate with physicians, nurses, and other healthcare professionals to improve therapeutic outcomes, reduce adverse drug events, and advance evidence-based practice.

#### **Vision**

To be a leading national and regional authority in clinical pharmacy education and training, preparing specialists who advance safe, effective, and patient-centered medication use to improve health outcomes.

#### **Duration**

The curriculum spans 4 years , each year consisting of program training in deferent departments in various hospital specialists

#### **Goals**

1. Clinical Competence – Diagnose and resolve drug therapy problems in various clinical settings.
2. Pharmacotherapy Expertise – Develop evidence-based treatment plans for major disease states (cardiology, oncology, infectious diseases, endocrinology, etc.).
3. Patient-Centered Care – Provide individualized care considering patient-specific factors, adherence, and counseling.

4. Interprofessional Collaboration – Work effectively in healthcare teams.
5. Research and Scholarship – Conduct and contribute to clinical research, quality improvement, and drug utilization evaluation.
6. Professionalism and Leadership – Uphold ethical principles, advocate for rational drug use, and train junior pharmacists.
7. Public Health and Preventive Care – Promote safe medication use, vaccination, and antimicrobial stewardship.

## **Curriculum Highlight**

### **Year 1 (Foundation in Clinical Practice)**

#### **Rotations (3 months each):**

- Internal Medicine
- General Surgery
- Obstetrics & Gynecology
- Pediatrics

#### **Learning Objectives:**

- Understand pathophysiology and pharmacotherapy of common acute/chronic diseases.
- Develop patient-centered pharmaceutical care plans.
- Learn basics of interprofessional communication.
- Identify and prevent common drug-related problems (DRPs).

#### **Teaching Methods:**

- Teaching lectures ( in all pharmacy sciences like pharmacology, clinical pharmacy , communication skills , pharmaceuticals and pharmaceutical chemistry ) , seminars, in five days per week
- Case presentations

#### **Assessment:**

- Primary exam consist of 100 MCQ. Which is an exam at the end of first year. The pass Mark is 70%.
- Logbook evaluation

## **Year 2 (Specialized Clinical Exposure)**

### **Rotations:**

- Hematology (2 mo)
- Oncology (2 mo)
- Cardiac Care Unit (2 mo)
- Dialysis Unit (2 mo)
- Neurology (1 mo)
- Anesthesiology & Pulmonary ICU (1 mo)
- Intensive Care Unit (1 mo)
- Psychiatry (1 mo)

### **Learning Objectives:**

- Apply pharmacotherapy in complex and critical care patients and manage them according to global guidelines .
- Manage oncology and hematology patients with chemotherapy regimens.
- Monitor therapeutic drug levels and adverse drug reactions.
- Address mental health pharmacotherapy.

### **Teaching Methods:**

- Problem-based learning (PBL)
- Therapeutic guideline reviews
- Drug information service training
- Mixing and compounding of chemotherapy medications
- Journal clubs

**Assessment:**

- Mini-CEX (clinical evaluation exercise)
- Clinical case reports
- Logbook evaluation

**Year 3 (Advanced & Subspecialty Rotations)****Rotations:**

- Bone Marrow Transplant (2 mo)
- Therapeutic Drug Monitoring / Clinical Pharmacokinetics (2 mo)
- Gastroenterology (1 mo)
- Pulmonology (1 mo)
- Emergency & Burns (1 mo)
- Endocrinology (1 mo)
- Rheumatology (1 mo)
- ENT Surgery (1 mo)
- Kidney Transplant (1 mo)
- Pediatric Surgery (1 mo)

**Learning Objectives:**

- Demonstrate advanced therapeutic decision-making.
- Perform individualized drug dosing (pharmacokinetic PK/pharmacodynamic PD principles).
- Provide care in transplant and immunosuppression cases.
- Manage drug-drug interactions in polypharmacy.

**Teaching Methods:**

- Multidisciplinary team participation

- Pharmacokinetic case workshops
- Critical appraisal of research articles
- Research proposal submission

**Assessment:**

- Clinical rotation portfolio
- Mid-program research progress defense
- Written exam ( short essay assessment exam )

**Year 4 (Consolidation & Leadership)**

**Rotations:**

- Internal Medicine (3 mo)
- Obstetrics & Gynecology (3 mo)
- General Surgery (2 mo)
- Pediatrics (2 mo)
- Neonatal ICU (1 mo)
- Toxicology (1 mo)

**Learning Objectives:**

- Integrate all clinical knowledge into independent practice.
- Provide pharmaceutical care leadership in multidisciplinary teams.
- Teach and mentor junior residents.
- Develop expertise in toxicology and neonatal pharmacotherapy.

**Teaching Methods:**

- Grand rounds presentations
- Leadership workshops
- Teaching assistantship for junior students

**Assessment:**

- Research thesis defense & publication
- Comprehensive board exam :

#### A- Theory Exam

Paper 1: Written 100 MCQ exam

Paper 2 : Written short essay exam (10 clinical cases )

#### B- Clinical Exam

Objective Structure Clinical Examination ( OSCE)

10 Clinical based slides (OSBE)

Note : Each student is given three attempts to pass either part 1 or part 2 exam . Failure to do so will result in their dismissal from the study .

### **Cross-Cutting Competencies (all years):**

- Ethics & professionalism in clinical pharmacy
- Evidence-based medicine (EBM)
- Pharmacovigilance & drug safety
- Research methodology & biostatistics
- Health economics & pharmacoeconomics
- Communication & counseling skills

### **Recommended Textbooks in the study ( last version )**

- A comprehensive updated in therapeutics .Pharmacotherapy preparatory review and recertification course.
- Applied therapeutics in clinical use of drug : Garoline S. Zeind , Michael G. Carvalho.
- Pharmacotherapy : Joseph T. Dipiro, Vicki L .Ellingrod .
- Lippincott Illustrated Reviews: Pharmacology.
- Katzung's basic and clinical pharmacology.
- MKSAP : General internal medicine :Paul S. Mueller.

