MD RADIOLOGY CURRICULUM

FULL DETAILED DEPARTMENTAL CURRICULUM

Aligned with UHS & PMDC Standards

This curriculum document outlines the complete structure, content, training pathways, assessment framework, research program, professionalism standards, and leadership competencies required for MD Radiology residents training in a tertiary care teaching hospital. It is fully aligned with UHS curriculum requirements and PMDC accreditation standards, and tailored for high-volume public sector hospitals.

1. PROGRAM OVERVIEW

Degree Title: MD Radiology Duration: 4 Years Training Center: Department of Radiology, Tertiary Care Teaching Hospital

2. PROGRAM AIMS

To develop highly competent radiologists capable of independent reporting, safe procedural practice, clinical consultation, academic teaching, and leadership roles within radiology departments.

3. PROGRAM OBJECTIVES

• Deliver structured, competency-based radiology training • Produce clinically safe, ethical and professional radiologists • Develop research, audit, and academic teaching capacity • Promote multidisciplinary collaboration • Ensure radiation safety and medico-legal compliance

4. LEARNING OUTCOMES

A. Clinical Competence Residents shall demonstrate expertise in: • Conventional radiography • Ultrasonography and Doppler • Computed Tomography • Magnetic Resonance Imaging • Fluoroscopy • Emergency Radiology • Pediatric Imaging • Neuroimaging • Breast Imaging • Oncology Imaging

B. Procedural Skills Residents shall independently perform: • Ultrasound-guided FNAC • Core biopsies • Drainage procedures • Doppler studies • Contrast fluoroscopic procedures • CT-guided interventions

C. Academic & Research Skills • Research design • Data collection and analysis • Thesis writing • Journal club presentation • Teaching junior residents and students

D. Professionalism & Ethics • Patient-centered care • Informed consent • Confidentiality • Radiation safety • Medico-legal compliance

5. TRAINING STRUCTURE

YEAR 1 – FOUNDATION PHASE

6 months Radiology Induction: • Department orientation • Radiation protection • PACS training • Basic imaging interpretation • Ultrasound scanning basics

3 months Internal Medicine: • Emergency medicine • ICU imaging correlation • Medical case management

3 months General Surgery: • Trauma imaging • Surgical emergencies • Pre- and post-operative imaging

Abridged Examination at end of Year 1

YEAR 2 – CORE RADIOLOGY

• Ultrasonography & Doppler – 4 months • CT Imaging – 4 months • General Radiography & Fluoroscopy – 4 months

Core competencies: • Independent ultrasound scanning • Doppler vascular assessment • CT protocol planning • Emergency CT reporting

YEAR 3 – ADVANCED IMAGING

• MRI – 3 months • Neuro-radiology – 3 months • Pediatric Radiology – 3 months • Breast & Women Imaging – 3 months

Core competencies: • Neuro CT & MRI interpretation • Pediatric imaging • Mammography and breast ultrasound • Pelvic MRI

YEAR 4 – CONSOLIDATION

• Interventional Radiology – 4 months • Oncology Imaging & MDT – 4 months • Elective (Cardiac / MSK / Research) – 4 months

Core competencies: • Image-guided biopsies • Oncology staging • MDT presentation • Independent reporting

6. RESEARCH & THESIS PROGRAM

Total protected research time: 1 year equivalent.

Timeline: • Topic selection: 6 months • Synopsis submission: End of Year 2 • Data collection: Year 2–3 • Analysis and writing: Year 3–4 • Thesis submission: ≥6 months before final exam

Research Outputs: • One conference presentation mandatory • One manuscript submission mandatory

7. TEACHING & ACADEMIC ACTIVITIES

• Daily film reading sessions • Weekly journal clubs • Weekly MDT meetings • Monthly research review meetings • Quarterly clinical audits

8. ASSESSMENT FRAMEWORK

Formative: • Continuous clinical assessment • Mini-CEX • DOPS • Logbook verification

Summative: • Abridged exam (Year 1) • Final exam (Year 4)

9. LOGBOOK REQUIREMENTS

• X-ray ≥ 10,000 • Ultrasound ≥ 1,500 • CT ≥ 1,200 • MRI ≥ 800 • FNAC ≥ 50 • Biopsies ≥ 30 • Drainages ≥ 30

10. PROFESSIONALISM & ETHICS

• Radiation safety training • Informed consent • Patient confidentiality • Medico-legal documentation • Ethical clinical practice

11. LEADERSHIP & MANAGEMENT

• PACS administration • Workflow optimization • Quality assurance • Departmental audits • Resource management

This curriculum fulfills UHS statutory requirements and PMDC accreditation standards and ensures production of safe, competent, academically strong radiologists for Pakistan’s healthcare system.