2026

MBBS

Study Guide

Nephrology: 4th Year MBBS

Department of Medical Education

Rawalpindi Medical University

Department of Nephrology

RMU 12 Integrated Modular Curriculum
4th year MBBS

	Rawalpindi Medical University			
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Department of Nephrology	Curriculum Committee	Vice Chancellor

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Author(s)	Date	Version	Description
Dr Asmara Israr Assistant Professor Nephrology	2023-2024	1st	Developed fourth year study guide for MBBS The content for LGIS and learning content for teaching schedule was included
Dr Mudassar Murtaza Cheema Assistant Professor Nephrology	2025-2026	2nd	Developed fourth year study guide for MBBS The content for LGIS was included. The learning content for the ward teaching has been incorporated.

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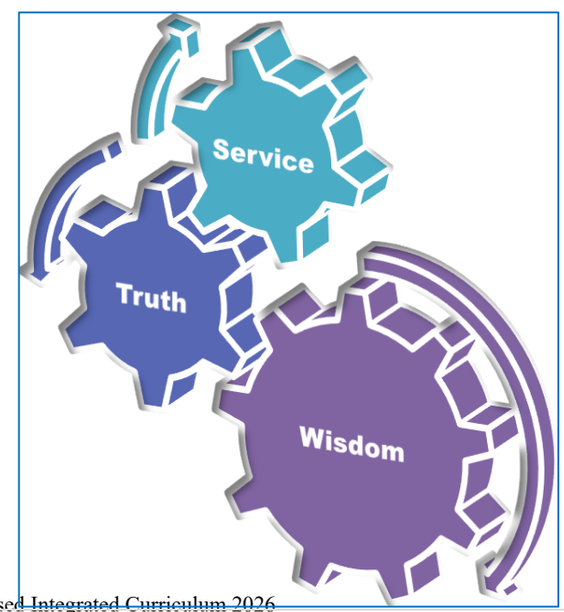
Table of Contents

RMU
Motto



Curriculum Mission and Vision

Mission Statement

To impart evidence-based research-oriented health professional education to provide best possible patient care and inculcate the values of mutual respect, ethical practice of healthcare and social accountability.

Vision and Values

Highly recognized and accredited center of excellence in Medical Education, using evidence-based training techniques for development of highly competent health professionals, who are lifelong experiential learner and are socially accountable.

Goals of the Undergraduate Integrated Modular Curriculum

The Undergraduate Integrated Learning Program is geared to provide you with quality medical education in an environment designed to:

- Provide thorough grounding in the basic theoretical concepts underpinning the practice of medicine.
- Develop and polish the skills required for providing medical services at all levels of the health care delivery system.
- Help you attain and maintain the highest possible levels of ethical and professional conduct in your future life.
- Kindle a spirit of inquiry and acquisition of knowledge to help you attain personal and professional growth & excellence.

RMU – 12 Integrated Modular MBBS Curriculum 2026

Isolation to Beyond Boundaries

Figure 1

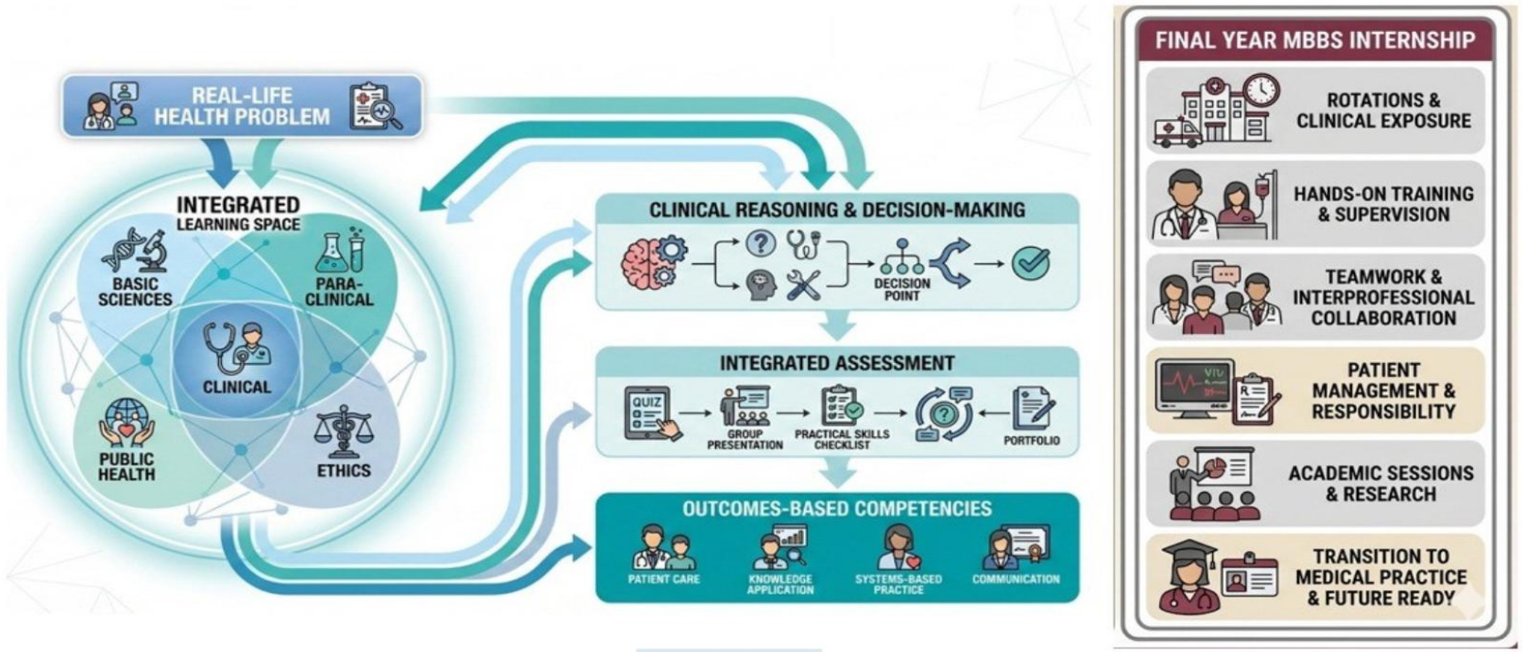
References

Harden RM. The integration ladder: a tool for curriculum planning and evaluation. Medical education. 2000 Jul 1;34(7).

Ten Cate O. Nuts and bolts of entrustable professional activities. Journal of graduate medical education. 2013 Mar 1;5(1):157-8.

Pakistan Medical & Dental Council Guidelines for Undergraduate Medical Education (MBBS) Curriculum – 2024

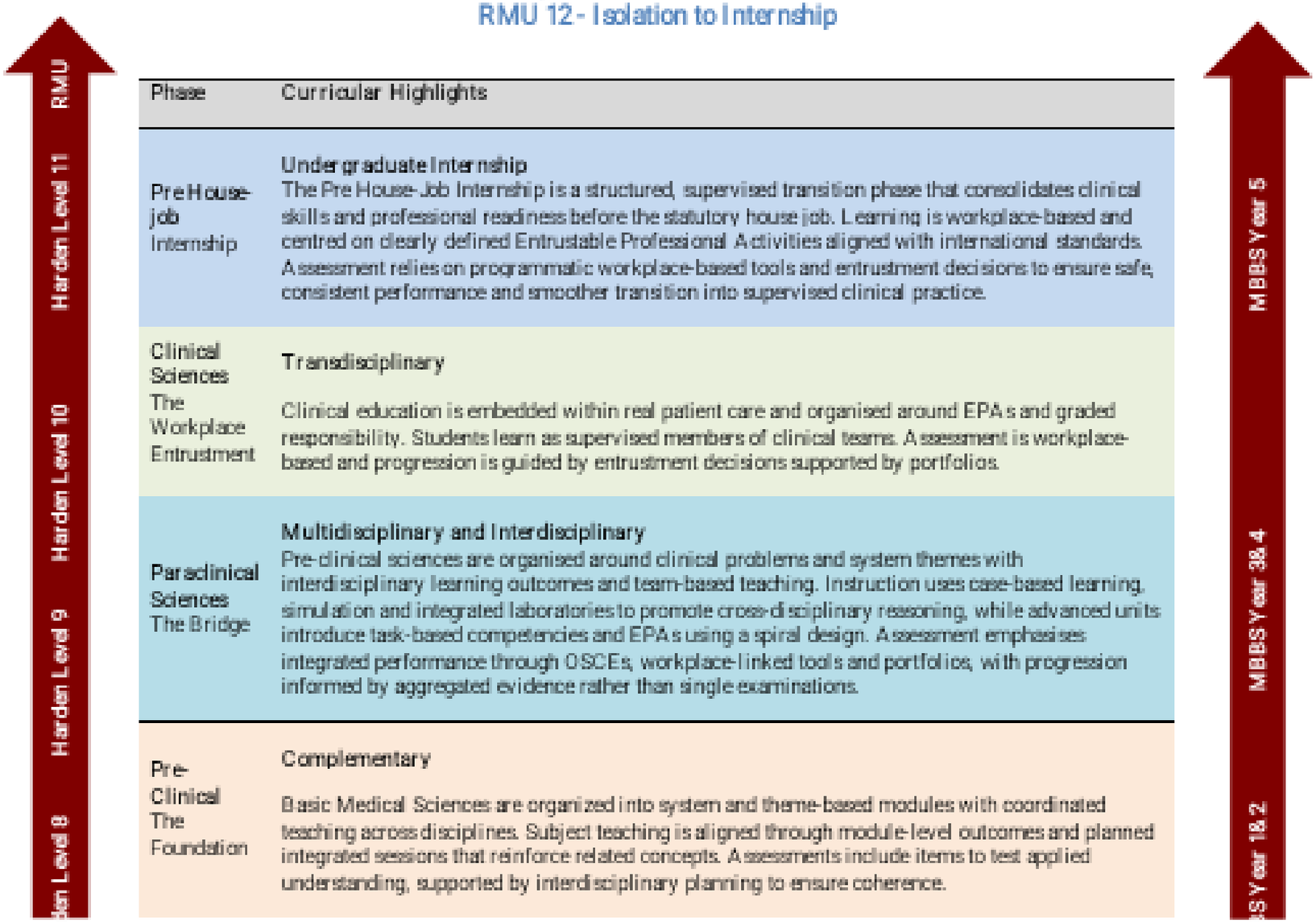
Structured Framework of RMU – 12 Integrated Modular MBBS Curriculum 2026
Isolation to Beyond Boundaries



Founadion	The Bridge	The Workplace Entrustment	Embeded Internship
• Pre-clinical sciences • Harden Level 8 (Complementary) MBBS Year (1 & 2)	• Para-clinical sciences • Harden Level 9,10 (Multidiciplinary & Interdiciplinary) MBBS Year (3 & 4)	• Clinical sciences • Harden Level 11 (Transdiciplinary) MBBS Year 5	

Figure 2

Structured Framework of Clinically Oriented Integrated Modular MBBS Curriculum 2026
RMU 12 - Isolation to Internship



Phase	Curricular Highlights
Pre House-job Internship	**Undergraduate Internship** The Pre House-Job Internship is a structured, supervised transition phase that consolidates clinical skills and professional readiness before the statutory house job. Learning is workplace-based and centred on clearly defined Entrustable Professional Activities aligned with international standards. Assessment relies on programmatic workplace-based tools and entrustment decisions to ensure safe, consistent performance and smoother transition into supervised clinical practice.
Clinical Sciences The Workplace Entrustment	**Transdisciplinary** Clinical education is embedded within real patient care and organised around EPAs and graded responsibility. Students learn as supervised members of clinical teams. Assessment is workplace-based and progression is guided by entrustment decisions supported by portfolios.
Paraclinical Sciences The Bridge	**Multidisciplinary and Interdisciplinary** Pre-clinical sciences are organised around clinical problems and system themes with interdisciplinary learning outcomes and team-based teaching. Instruction uses case-based learning, simulation and integrated laboratories to promote cross-disciplinary reasoning, while advanced units introduce task-based competencies and EPAs using a spiral design. Assessment emphasises integrated performance through OSCEs, workplace-linked tools and portfolios, with progression informed by aggregated evidence rather than single examinations.
Pre-Clinical The Foundation	**Complementary** Basic Medical Sciences are organized into system and theme-based modules with coordinated teaching across disciplines. Subject teaching is aligned through module-level outcomes and planned integrated sessions that reinforce related concepts. Assessments include items to test applied understanding, supported by interdisciplinary planning to ensure coherence.

Rawalpindi Medical University has adopted a staged curricular framework that reflects a progressive movement along Harden's integration ladder, culminating in going beyond the ladder to RMU Integration level 12. The curriculum is designed to ensure that knowledge acquired in the early years is not isolated or terminal, but is progressively contextualized, applied and transformed into professional competence. This progression is achieved by aligning curricular structure, teaching approaches and assessment strategies so that students move from conceptual understanding to integrated reasoning and finally to authentic clinical performance with graded responsibility.

Phase 1- The Foundation

In the early phase, basic sciences are organised using a complementary approach. The curriculum is structured into system- and theme-based modules rather than isolated subject courses, allowing Anatomy, Physiology, Biochemistry and related disciplines to retain their academic identity while contributing in a coordinated and mutually reinforcing manner. Learning outcomes are written at the module level and are intentionally framed to reflect conceptual understanding of systems rather than discipline-specific factual recall alone. Teaching is primarily discipline-led, but content delivery is carefully sequenced so that related concepts across subjects are taught in close temporal proximity. This sequencing is reinforced through planned integrated multidisciplinary activities such as problem-based learning, case-based learning and joint sessions that require students to draw connections across disciplines. Teaching methods extend beyond lectures to include small-group discussions with structured clinical problem triggers that encourage early application of knowledge. Assessment in this phase is knowledge-focused, but incorporates integrated items and short clinical vignettes to test applied understanding (C4 level) across disciplines. These integrated assessment elements are deliberately introduced to prepare students for more complex synthesis (C6 level) in later phases, while maintaining the reliability. Regular interdisciplinary planning meetings and module coordination ensure coherence, avoid unnecessary duplication and maintain alignment between teaching and assessment.

Phase 2- The Bridge

As students enter the pre-clinical phase, the curriculum transitions into a multidisciplinary and subsequently interdisciplinary design. At this stage, curricular organisation shifts more clearly towards clinical systems and patient presentations, and learning outcomes emphasise the integration of knowledge, skills and reasoning across disciplines. Rather than subjects contributing independently, departments collaborate in the design and delivery of modules, and students encounter learning experiences that require simultaneous application of concepts from multiple domains. Teaching is increasingly delivered through team-based and co-facilitated sessions, with clinicians and basic scientists jointly guiding learning activities. Case-based learning, integrated practical sessions and simulation-based teaching become central modalities, allowing students to engage with clinically meaningful problems while still grounded in scientific principles. The curiculum adopts a spiral structure in which key concepts are revisited at increasing levels of complexity, enabling deeper

understanding and clinical relevance. In advanced pre-clinical components, the curriculum becomes explicitly task-oriented, focusing on common clinical presentations and professional activities rather than disciplinary content. At this stage, portfolios are introduced to support longitudinal documentation of learning, and early forms of workplace-linked assessment and

Entrustable activities are incorporated to familiarize students with performance-based expectations. Assessment strategies emphasize synthesis and reasoning, using integrated written examinations, complex case vignettes, OSCEs and structured simulation assessments. Decisions about student progress increasingly rely on aggregated evidence from multiple assessment tools and research projects.

Phase 3- The Workplace Entrustment

In the clinical phase, the curriculum becomes fully transdisciplinary, with learning embedded within authentic patient care and professional practice. Educational activities are organised around real clinical tasks, patient care pathways and Entrustable Professional Activities that reflect the core responsibilities of a graduating doctor. Students are integrated into clinical teams and participate in patient care under supervision, progressively assuming greater responsibility as competence is demonstrated. Teaching is predominantly workplace- based, supported by bedside teaching, coaching, reflective practice and targeted simulation for complex or high-risk activities. The distinction between disciplines becomes secondary to the holistic management of patients, as students are expected to integrate biomedical knowledge, clinical skills, communication, professionalism and teamwork in real settings. Assessment is programmatic and centered on performance in the workplace, using tools such as mini-CEX, DOPS, case-based discussions and multisource feedback. Evidence from these assessments is collected longitudinally within portfolios and reviewed by entrustment or competence committees to make informed decisions about progression and readiness for practice. Summative judgment is therefore based on sustained performance over time. Faculty roles evolve from subject teachers to supervisors, assessors and coaches, with explicit responsibility for observation, feedback and entrustment decisions. Diverse clinical exposure in tertiary public sector hospitals and community settings ensure adequate exposure, supervision and assessment opportunities, while quality assurance processes focus on the validity and consistency of entrustment decisions and learning experiences.

Phase 4- The Undergraduate Internship

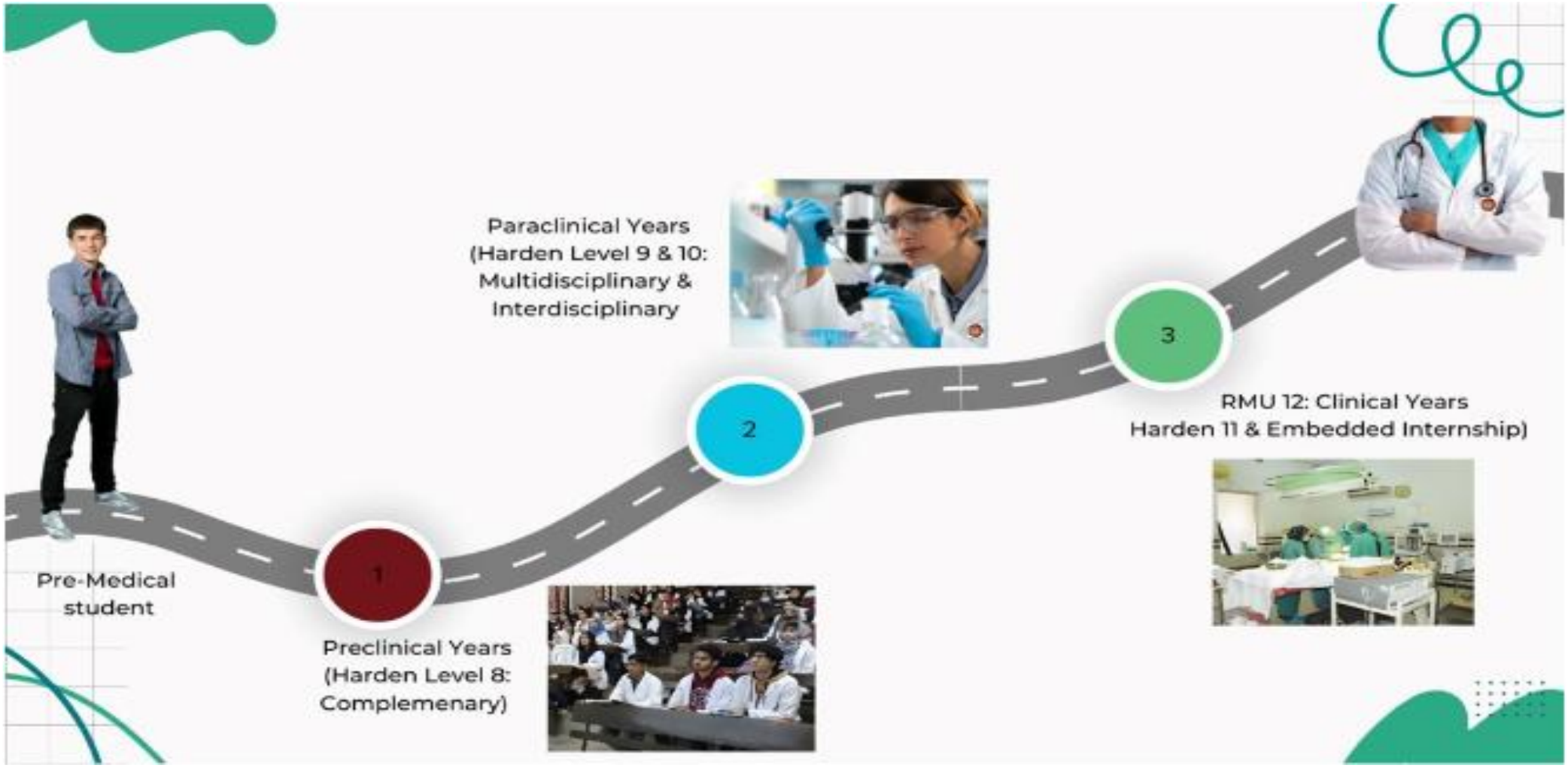
The Undergraduate Internship is a structured, supervised transition phase designed to consolidate clinical competence and ensure readiness for the statutory house job. It provides learners with protected, workplace-based exposure focused on authentic patient care tasks, guided by clearly defined Entrustable Professional Activities aligned with international standards. Teaching emphasizes supervised clinical practice, simulation for high-risk scenarios, and interprofessional teamwork, while assessment uses programmatic workplace-based tools, portfolios and entrustment decisions to judge safe, consistent performance. This level

strengthens patient safety, reduces transition shock, and ensures that graduates enter the house job with demonstrable, documented readiness for independent supervised practice.

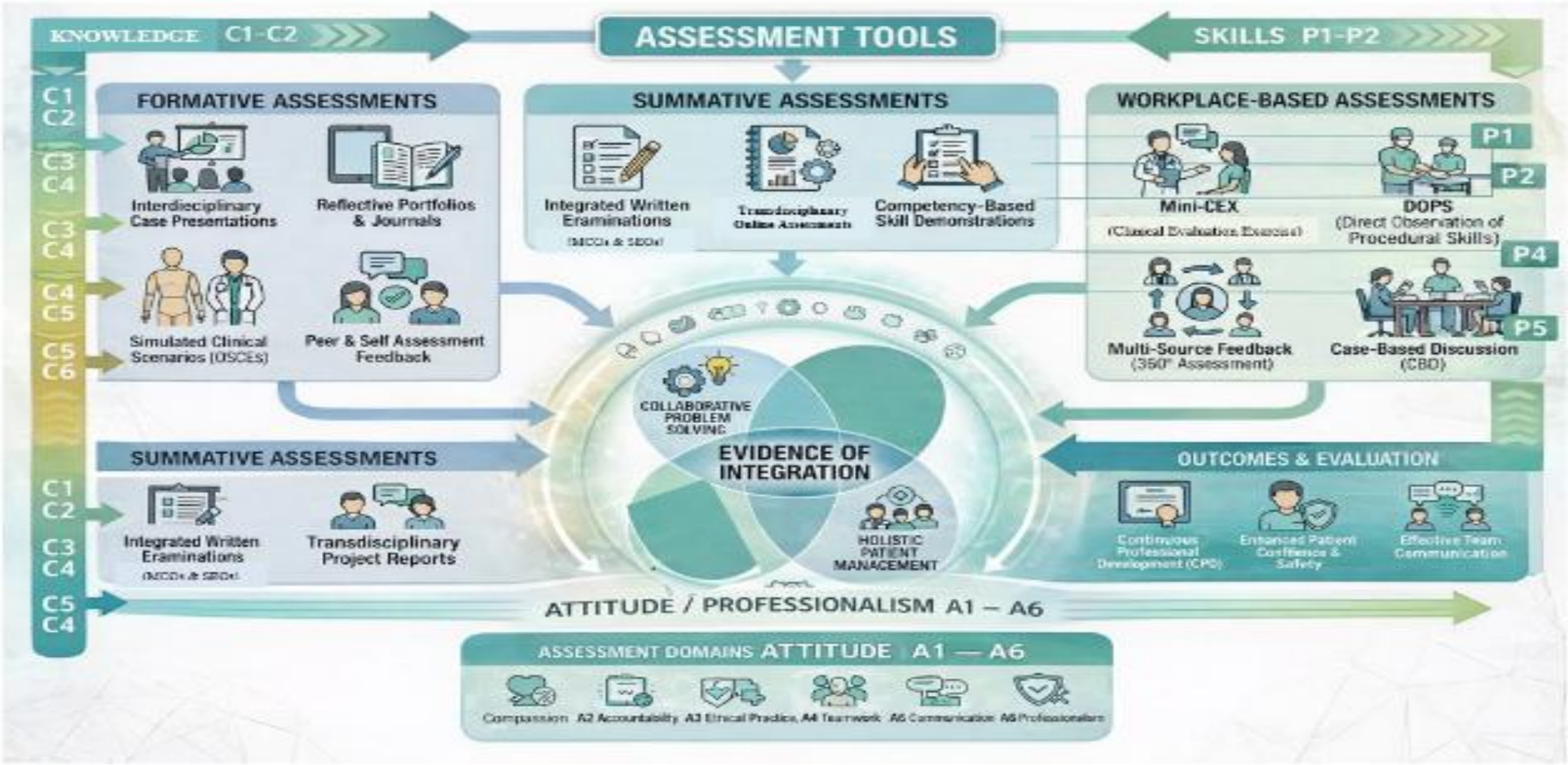
Across all phases, the curriculum is underpinned by faculty development and continuous quality assurance. The staged movement from complementary through multidisciplinary and interdisciplinary learning to transdisciplinary clinical practice ensures that graduates are not only knowledgeable, but also capable of applying their learning effectively and safely in real clinical environments. This integrated and progressive design reflects contemporary best practices in medical education and aligns the educational experience with the expectations of modern healthcare systems.

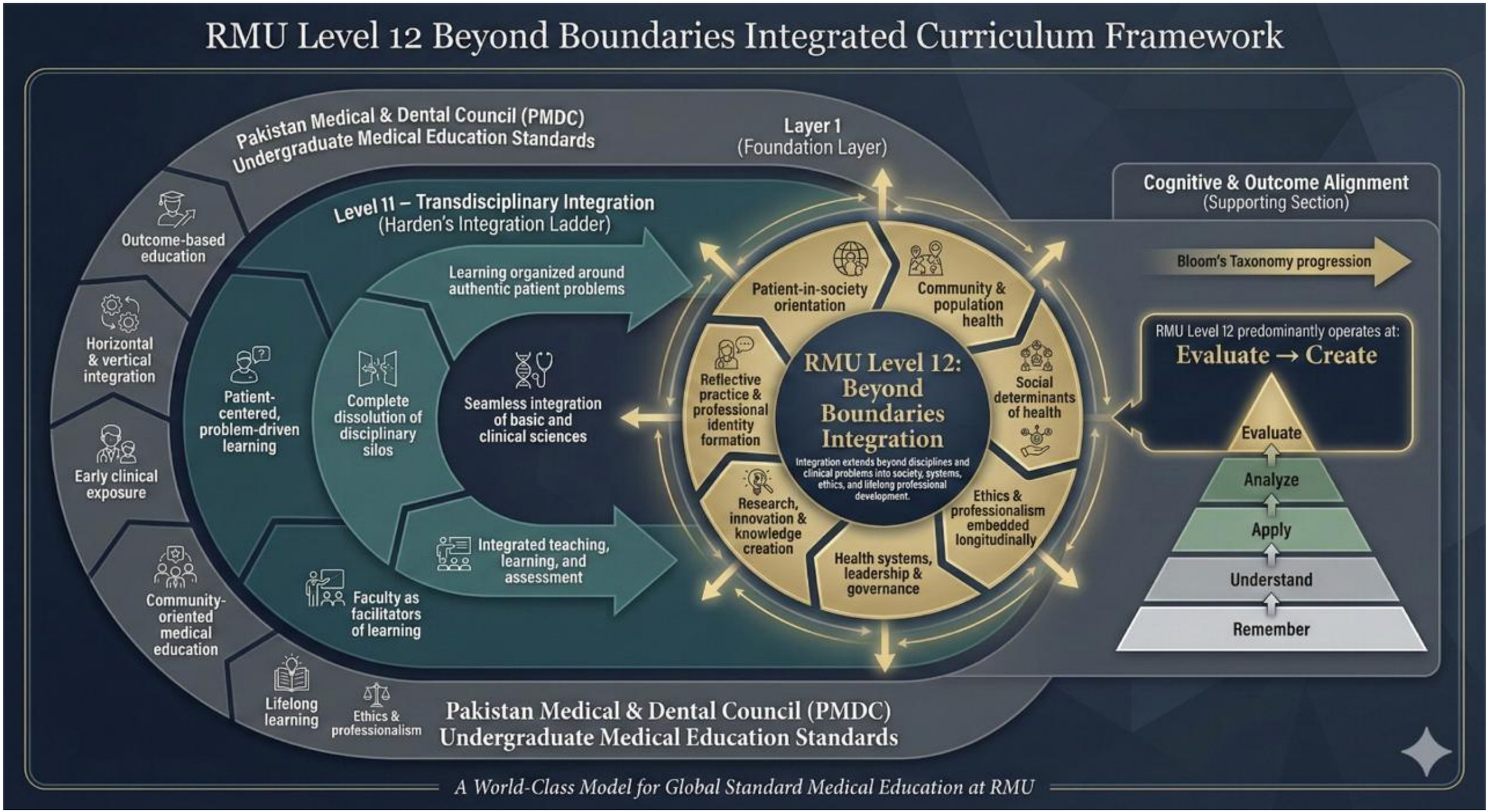
Structured Framework of RMU – 12 Integrated Modular MBBS Curriculum 2026

Isolation to Beyond Boundaries



Assessment Framework of RMU – 12 Integrated Modular MBBS Curriculum 2026 Isolation to Beyond Boundaries


KNOWLEDGE C1-C2
ASSESSMENT TOOLS
SKILLS P1-P2
C1
C2
C3
C4
C3
C4
C4
C5
C5
C6
FORMATIVE ASSESSMENTS
Interdieciplinary Case Presentations
Reflective Portfolios & Journals
Simulated Clinical Scenarios (OSCES)
Peer & Self Assessment Feedback
SUMMATIVE ASSESSMENTS
Integrated Written Eraminations
Competency-Based Skill Demonstrations
WORKPLACE-BASED ASSESSMENTS
P1
P2
Mini-CEX
DOPS
(Direct Observation of Procedural Skills)
P4
Multi-Source Feedback
(360° Assessment)
Case-Based Discussion
(CBD)
P5
COLLABORATIVE PROBLEM SOLVING
EVIDENCE OF INTEGRATION
HOLISTIC PATIENT MANAGEMENT
SUMMATIVE ASSESSMENTS
C1
C2
C3
C4
C5
C4
Integrated Written Eraminations
Transdisciplinary Project Reports
OUTCOMES & EVALUATION
Continuous Professional Development (CPD)
Enhanced Patient Confidence & Safety
Effective Team Communication
ATTITUDE / PROFESSIONALISM A1 – A6
ASSESSMENT DOMAINS ATTITUDE A1 — A6
Compassion
A2 Accountability
A3 Ethical Practice
A4 Teamwork
A5 Communication
A6 Professionalism


RMU Level 12 Beyond Boundaries Integrated Curriculum Framework
Pakistan Medical & Dental Council (PMDC)
Undergraduate Medical Education Standards
Outcome-based education
Horizontal & vertical integration
Early clinical exposure
Community-oriented medical education
Lifelong learning
Ethics & professionalism
Level 11 – Transdisciplinary Integration
(Harden's Integration Ladder)
Patient-centered, problem-driven learning
Complete dissolution of disciplinary silos
Learning organized around authentic patient problems
Seamless integration of basic and clinical sciences
Integrated teaching, learning, and assessment
Faculty as facilitators of learning
Layer 1
(Foundation Layer)
Patient-in-society orientation
Community & population health
Social determinants of health
Ethics & professionalism embedded longitudinally
Health systems, leadership & governance
Research, innovation & knowledge creation
Reflective practice & professional identity formation
RMU Level 12: Beyond Boundaries Integration
Integration extends beyond disciplines and clinical problems into society, systems, ethics, and lifelong professional development.
Cognitive & Outcome Alignment
(Supporting Section)
Bloom's Taxonomy progression
RMU Level 12 predominantly operates at:
Evaluate → Create
Evaluate
Analyze
Apply
Understand
Remember
Pakistan Medical & Dental Council (PMDC)
Undergraduate Medical Education Standards
A World-Class Model for Global Standard Medical Education at RMU

RMU Level 12 Trans-Contextual Integration Framework

Introduction

Modern medical education emphasizes integration as a cornerstone for producing competent, reflective, and patient-centered physicians. Harden's Integration Ladder provides a structured framework to assess the degree of integration within a medical curriculum, ranging from isolated teaching (Level 1) to full transdisciplinary integration (Level 11). Rawalpindi Medical University (RMU), through its MBBS curriculum design, teaching strategies, and assessment framework, demonstrates clear alignment with PMDC's undergraduate medical education standards and fulfills the criteria for Level 11 on Harden's Integration Ladder and even beyond boundaries corresponding to ***RMU Level 12 Integration***. Furthermore, RMU's curriculum promotes higher-order thinking skills as defined by Bloom's Taxonomy, thereby extending beyond mere integration to the development of competent, reflective, and adaptive physicians.

Rawalpindi Medical University in the Context of Harden's Integration Ladder: Level 11 and Beyond Boundaries

Rawalpindi Medical University (RMU), through its undergraduate MBBS curriculum and evolving educational strategies, demonstrates characteristics that place it at Level 11 of Harden's Ladder and, in several aspects, even beyond that RMU Level 12(beyond boundaries/internship). This is evident in RMU's holistic curriculum design, clinical immersion, problem-based learning, community-oriented education, and outcome-driven assessment strategies.

Key Highlights

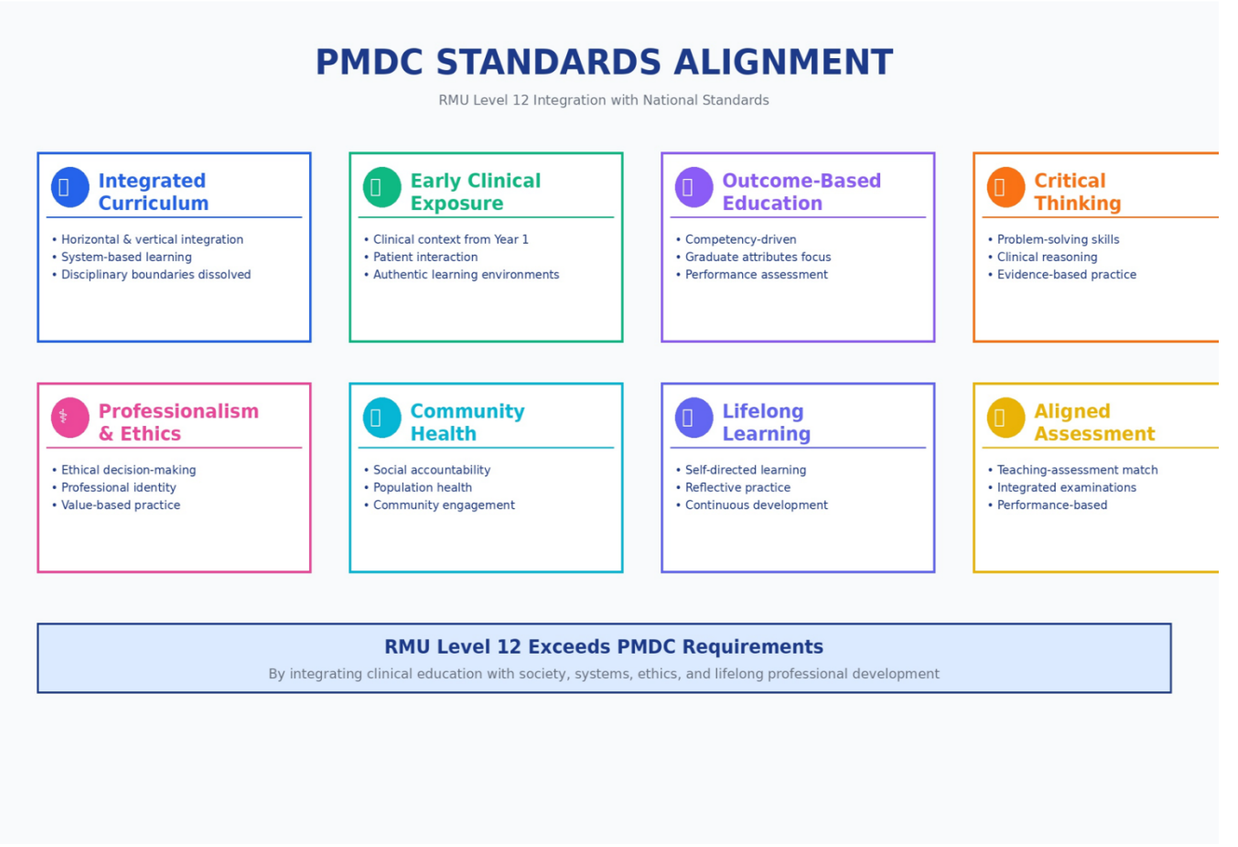
- Transcends Harden's Level 11 through integration with society, systems, ethics, and lifelong learning
- Fully aligned with PMDC undergraduate medical education standards
- Emphasizes higher-order thinking: Analysis, Evaluation, and Creation (Bloom's Taxonomy)
- Produces socially accountable, adaptive physicians prepared for 21st-century healthcare challenges

1. Foundations of Integration

1.1 PMDC Standards for Medical Education

The Pakistan Medical and Dental Council mandates a transformative approach to undergraduate medical education characterized by:

- **Integrated Curriculum:** Horizontal integration (across disciplines) and vertical integration (across years)
- **Early Clinical Relevance:** Clinical context introduced from initial years
- **Outcome-Based Education:** Focus on graduate competencies rather than content coverage
- **Critical Thinking & Problem-Solving:** Development of analytical and evaluative skills
- **Professionalism & Ethics:** Embedded throughout the curriculum, not as isolated modules
- **Alignment of Teaching, Learning, and Assessment:** Constructive alignment with graduate outcomes



1.2 Harden's Integration Ladder: Overview

Harden's Integration Ladder provides a systematic framework for evaluating curricular integration, progressing through 11 levels:

HARDEN'S INTEGRATION LADDER → RMU BEYOND BOUNDARIES

2. RMU Level 12—Beyond Boundaries

2.1 Conceptual Definition

RMU Level 12: Beyond Boundaries Integration

A curriculum in which learning is organized not merely around disciplines or clinical problems, but around real-world health systems, societal needs, ethical complexity, population health challenges, and professional identity formation—producing graduates who can adapt, lead, and innovate across contexts.

2.2 Why Level 12 Exists

While Harden's Integration Ladder culminates at Level 11 (Transdisciplinary Integration), contemporary medical education—particularly as mandated by PMDC—requires graduates who can function beyond the clinical encounter. RMU operates beyond transdisciplinary clinical integration by:

- Shifting the unit of integration from the patient alone to the patient embedded within society, systems, ethics, and professional identity
- Addressing health systems, governance, and resource allocation as integral learning domains
- Embedding knowledge creation and research literacy, not just knowledge synthesis
- Structuring lifelong learning and adaptive professionalism as explicit outcomes

2.3 Five Pillars of Level 12 Integration

A. Societal Integration: Patient-in-Society Problems

Level 11: Patient-centered clinical problems

RMU Level 12: Patient-in-society problems

RMU Implementation:

- Community-based medical education

- Analysis of social determinants of health
- Preventive and promotive healthcare strategies
- Health equity considerations in clinical decision-making

Students don't merely diagnose disease—they analyze population patterns and design interventions, requiring evaluation and creation (Bloom's highest levels).

B. Value-Based Integration: Contextual Ethics

Level 11: Ethics integrated within cases

RMU Level 12: Ethics embedded longitudinally in real decisions

RMU Implementation:

- Ethical dilemmas arising from real patient encounters, not hypothetical scenarios
- Continuous professional identity formation throughout the curriculum
- Assessment of reflective practice and ethical reasoning

Students must weigh competing values, manage uncertainty, and justify actions—hallmarks of evaluation-level cognition.

C. System-Level Integration: Healthcare Systems & Leadership

Level 11: Focus on individual patient care

RMU Level 12: Focus on healthcare systems and governance

RMU Implementation:

- Exposure to health systems functioning and policy implications
- Understanding resource allocation realities

- Leadership and teamwork competencies

Students evaluate trade-offs between individual benefit and population good—something no single discipline or clinical problem can teach.

D. Knowledge Creation: Beyond Synthesis

Level 11: Knowledge synthesis

RMU Level 12: Knowledge generation

RMU Implementation:

- Research literacy and critical appraisal skills
- Clinical audits and community health projects
- Evidence-based practice and innovation

Students formulate research questions, design solutions, and create outputs—aligning with the creation level of Bloom's Taxonomy.

E. Temporal Integration: Lifelong Professional Identity

Level 11: Competent graduate

RMU Level 12: Adaptive professional

RMU Implementation:

- Reflective portfolios documenting professional growth
- Self-directed learning plans
- Feedback-driven continuous improvement

Graduates leave with the ability to identify learning needs and adapt to new contexts—temporal integration across undergraduate education and professional life.

3. Alignment with PMDC Standards

The following table demonstrates explicit mapping between PMDC graduate competencies, RMU curriculum implementation, and justification for Level 12 integration:

PMDC Competency	RMU Implementation	Level 12 Justification
Medical Knowledge	Integrated system-based modules combining anatomy, physiology, pathology, pharmacology, radiology, and clinical medicine	Knowledge constructed through real patient problems; subject boundaries dissolved
Clinical Skills & Patient Care	Early clinical exposure, bedside teaching, skills labs, OSCEs	Skills and knowledge learned simultaneously in authentic clinical contexts
Clinical Reasoning	Case-based learning, problem-based tutorials, integrated examinations	Learning organized around clinical problems requiring synthesis beyond single disciplines
Communication Skills	Longitudinal communication training embedded in OSCEs and ward teaching	Communication competencies embedded within patient encounters, not isolated modules
Professionalism & Ethics	Longitudinal professionalism themes, ethics discussions during clinical rotations	**Ethical reasoning contextualized within patient care—extends to value-based integration**
Community & Preventive Health	Community-based medical education, public health projects, outreach programs	**Integrates clinical medicine with population health and social determinants—societal integration**
Lifelong Learning	Reflective practice, research literacy, self-directed learning tasks	**Students identify learning needs from clinical encounters—temporal integration**

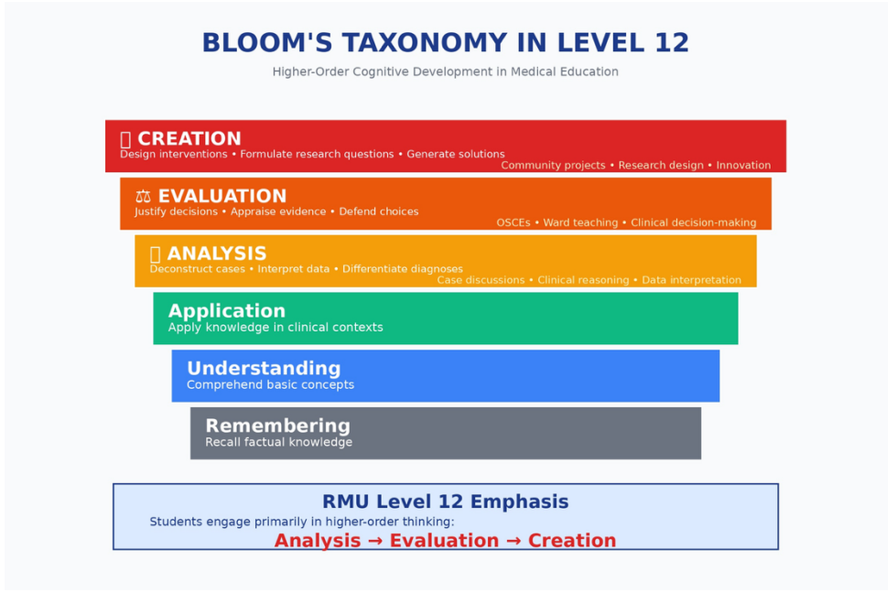
4. Bloom's Taxonomy & Higher-Order Thinking

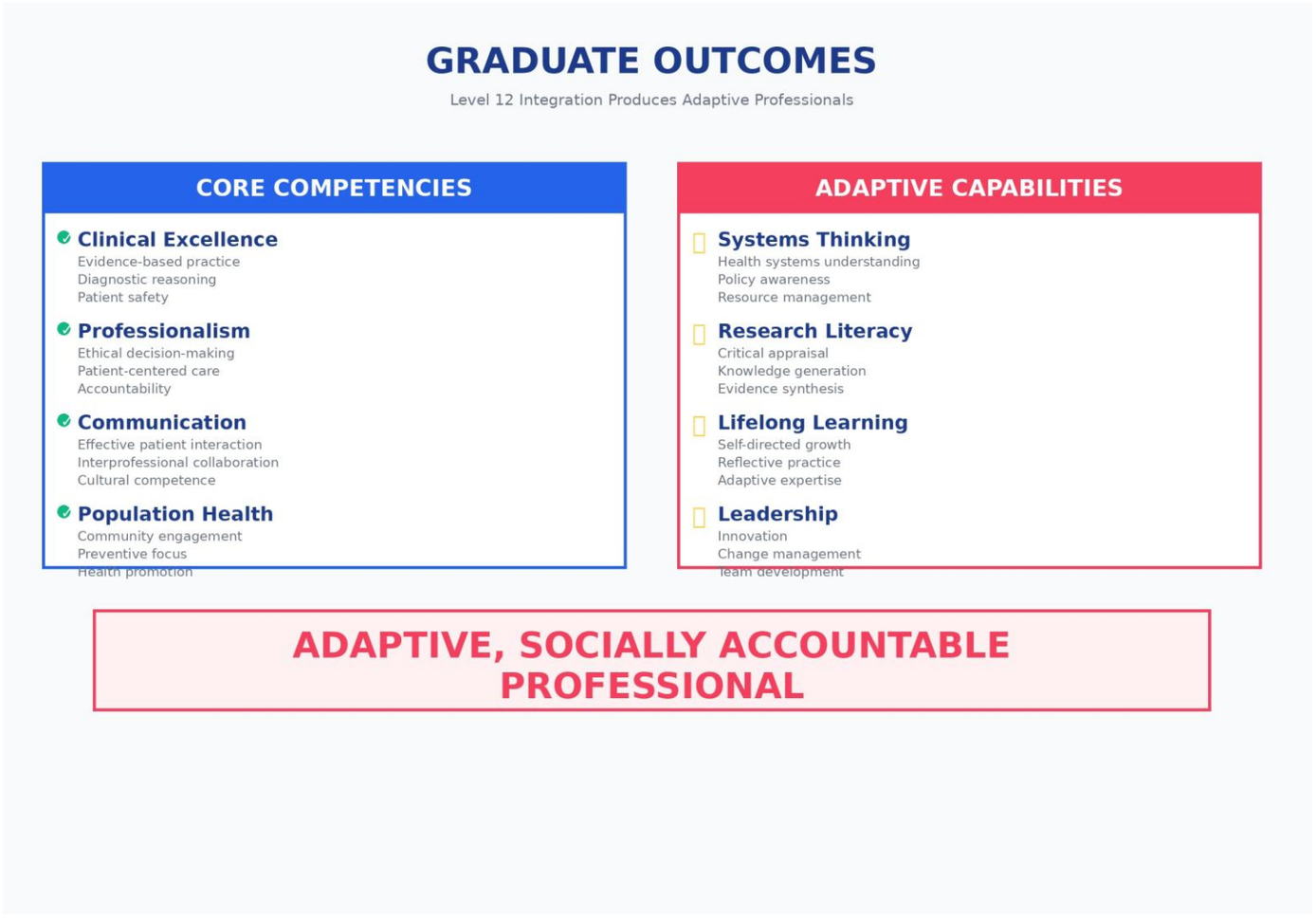
RMU's curriculum explicitly targets higher-order cognitive domains of Bloom's Taxonomy:

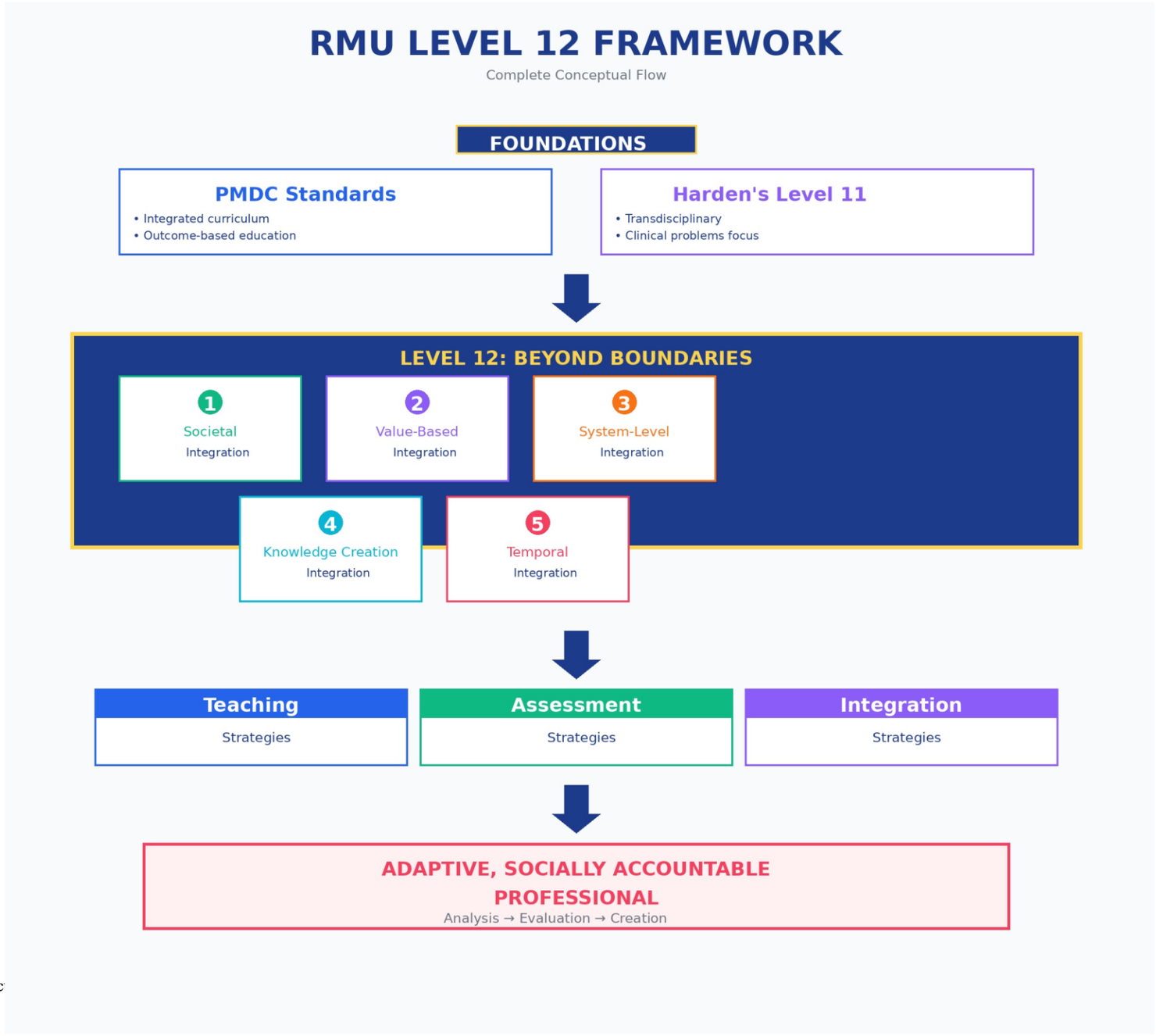
- **Analysis:** Breaking down complex clinical cases, interpreting investigations, differentiating diagnoses
- **Evaluation:** Appraising evidence, justifying management decisions, defending clinical choices
- **Creation:** Designing interventions, formulating research questions, developing solution

4.1 Learning Activities Mapped to Bloom's Levels

Learning Activity	Bloom's Level	Justification
Integrated case-based discussions	**Analysis**	Students deconstruct complex cases, interpret investigations, differentiate diagnoses
Ward-based clinical teaching	**Analysis → Evaluation**	Learners appraise patient data and justify management decisions in real time
OSCEs and scenario-based stations	**Evaluation**	Students defend clinical decisions, prioritize care, demonstrate judgment under pressure
Community health projects	**Evaluation → Creation**	Learners assess community needs and design context-specific preventive interventions
Research projects & clinical audits	**Creation**	Students formulate questions, design studies, generate new knowledge




GRADUATE OUTCOMES
Level 12 Integration Produces Adaptive Professionals
CORE COMPETENCIES
Clinical Excellence
Evidence-based practice
Diagnostic reasoning
Patient safety
Professionalism
Ethical decision-making
Patient-centered care
Accountability
Communication
Effective patient interaction
Interprofessional collaboration
Cultural competence
Population Health
Community engagement
Preventive focus
Health promotion
ADAPTIVE CAPABILITIES
Systems Thinking
Health systems understanding
Policy awareness
Resource management
Research Literacy
Critical appraisal
Knowledge generation
Evidence synthesis
Lifelong Learning
Self-directed growth
Reflective practice
Adaptive expertise
Leadership
Innovation
Change management
Team development
ADAPTIVE, SOCIALLY ACCOUNTABLE PROFESSIONAL


RMU LEVEL 12 FRAMEWORK
Complete Conceptual Flow
FOUNDATIONS
PMDC Standards
• Integrated curriculum
• Outcome-based education
Harden's Level 11
• Transdisciplinary
• Clinical problems focus
LEVEL 12: BEYOND BOUNDARIES
1
Societal
Integration
2
Value-Based
Integration
3
System-Level
Integration
4
Knowledge Creation
Integration
5
Temporal
Integration
Teaching
Strategies
Assessment
Strategies
Integration
Strategies
ADAPTIVE, SOCIALLY ACCOUNTABLE
PROFESSIONAL
Analysis → Evaluation → Creation

Conclusion

Rawalpindi Medical University's curriculum exemplifies a transformational approach to medical education that extends beyond traditional disciplinary integration. By achieving **Level 12: Beyond Boundaries Integration**, RMU demonstrates that modern medical education must prepare graduates not only as competent clinicians but as adaptive, reflective, socially accountable professionals capable of navigating complex health systems, ethical dilemmas, and evolving healthcare landscapes.

This framework, fully aligned with PMDC standards and grounded in Bloom's higher-order cognitive domains, positions RMU as an innovator in outcome-based, student-centered medical education that produces physicians prepared for 21st-century healthcare challenges.

The Five Pillars of Level 12—Societal Integration, Value-Based Integration, System-Level Integration, Knowledge Creation, and Temporal Integration—collectively represent a holistic vision for medical education that transcends disciplinary boundaries and prepares graduates for lifelong professional excellence.

Key Takeaways for Educators

- Level 12 integration is achievable through deliberate curriculum design aligned with regulatory standards
- Higher-order thinking (Analysis, Evaluation, Creation) must be explicitly embedded in learning activities
- Integration extends beyond clinical problems to encompass society, systems, ethics, and professional identity
- Assessment strategies must align with transdisciplinary learning objectives
- The ultimate goal is producing adaptive professionals, not merely competent graduates


4TH YEAR MBBS CLINICAL CLERKSHIP
RAWALPINDI MEDICAL UNIVERSITY
(LEVEL 12 EMBEDDED CLINICAL TRAINING)
PATIENT-CENTERED THEME-BASED CLERKSHIP
LEVEL 12 EMBEDDED CLINICAL TRAINING)
Competency-Based Education
Interdisciplinary Integration Experiential Immersion
Interdisciplinary Immersion
Continuous Assessment Tracking
Continuous Assessment Tracking
Reflective Lifelong Learning
Guided Participation
Progressive Autonomy
Early Subspecialty Exposure
Early Subspecialty Exposure
Subsegiem Processed
Chronic Disease Management
Different Rotations
PATIENT-CENERED THEME-BASED
Surgical STREAM
Urology
Orthepedics
Neurosurgery
Medicine STREAM
Dermatology
Nephrology
Family Medicine
PATIENT-CENTERED THEME-BASED CLERKSHIP
Inpatient Wards, ORs & ER
Outpatient Clinics, Community Care
LEVEL 12 "EMBEDDED" CLERKSHIP MODEL
Sustained Clinical Participation
Authentic Case Exposure
40% Continuous Internal Assessment
Strong Supervisor Mentorship
Clinical skils performance
Competency Mapping & Portfolios
COMPETENT 4th YEAR CLINICAL CLERKS
Upon completion of the 4th Year Clerkship, students will be able to achieve:
Focused Clinical Examinations
Differential Diagnoss Formulation
Safe Procedural Skills
Compilaing Managenent
Differential Diagnosis Formulation
Multidisciplinary Management
Ethical Communication
Reflective clinical Judgment

Clinical Clerkship

Rawalpindi Medical University

Level 12 Embedded Clerkship Model

(Theme-Based Integrated Clinical Training)

1. Program Overview

The 4th Year MBBS Clinical Clerkship at Rawalpindi Medical University (RMU) is designed as a structured, competency-driven, Level 12 embedded clinical training model.

At this stage, students transition from supervised academic learners to progressively independent clinical participants. The program emphasizes immersive patient care exposure, deliberate practice, interdisciplinary integration, reflective learning, and longitudinal competency tracking.

Unlike traditional block rotations that isolate disciplines, RMU adopts a **theme-based embedded structure**, where allied specialties are integrated within broader clinical streams. This ensures continuity in clinical reasoning, patient care responsibility, and professional identity formation.

The clerkship prioritizes:

- Authentic clinical participation
- Early subspecialty exposure
- Competency-based progression
- Structured formative feedback
- Reflective practice
- Continuous internal assessment
- Longitudinal skill development

Students are expected to function as active members of clinical teams rather than passive observers.

2. Educational Philosophy

The RMU Level 12 Embedded Clerkship is grounded in:

- Competency-Based Medical Education (CBME)
- Experiential learning through clinical immersion
- Progressive scaffolding of autonomy
- Continuous formative assessment
- Reflective and self-directed learning
- Interdisciplinary integration
- Patient-centered professionalism

Clinical learning is organized around **patient presentations and themes**, not isolated subject boundaries. Students develop clinical reasoning across systems rather than within silos.

3. Theme-Based Integrated Structure

The clerkship is organized into **integrated clinical themes** embedded within two major streams:

3.1 Surgical Stream (Allied Rotations – 2 Weeks Each)

Themes emphasize procedural exposure, surgical reasoning, and perioperative care.

Specialties include:

- Urology
- Orthopedics
- Neurosurgery

Students experience:

- Acute surgical presentations
- Trauma and emergency care
- Operative indications
- Post-operative monitoring
- Procedural skill development under supervision

3.2 Medicine Stream (Allied Rotations – 1 Week Each)

Themes emphasize chronic disease management, systemic evaluation, and community-based care.

Specialties include:

- Dermatology
- Nephrology
- Family Medicine
- Psychiatry (3 weeks integrated exposure)

Students engage in:

- Outpatient clinics
- Ward rounds
- Multidisciplinary discussions
- Community and psychosocial assessments
- Longitudinal patient follow-up

The theme-based structure ensures exposure to:

- Acute conditions
- Chronic diseases
- Surgical decision-making
- Medical management
- Community care
- Mental health integration

4. Core Learning Outcomes (Level 12 Competency Expectations)

Upon completion of the 4th Year Clerkship, students will be able to:

1. Conduct focused clinical history and examination across subspecialties
2. Perform selected procedural skills safely under supervision
3. Formulate prioritized differential diagnoses
4. Develop rational investigation plans
5. Participate in multidisciplinary case discussions
6. Communicate effectively with patients and healthcare teams
7. Apply ethical and professional standards consistently
8. Demonstrate reflective clinical learning
9. Show emerging independent clinical judgment

These outcomes align with Level 12 expectations of embedded participation and progressive autonomy.

5. Assessment Model – 40% Continuous Internal Assessment (CIA)

RMU distinguishes itself through a robust Continuous Internal Assessment system.

CIA Structure:

- **30% Theory & Clinical Assessments**
- **10% LMS-based assessments**

CIA evaluates:

- Clinical skills performance
- Case presentations
- Bedside participation
- Procedural competence
- Professionalism
- Logbook completion
- Reflective portfolio entries
- Mini-CEX and DOPS
- Supervisor feedback

Continuous assessment ensures:

- Sustained engagement
- Real-time feedback
- Early identification of learning gaps
- Remediation opportunities
- Skill consolidation over time

Competence is evaluated longitudinally rather than through a single high-stakes examination.

6. Progressive Scaffolding of Autonomy

The Level 12 clerkship follows a structured autonomy model:

Stage 1 — Guided Participation

Students observe and assist in patient care.

Stage 2 — Supervised Performance

Students perform clinical tasks with structured faculty oversight.

Stage 3 — Supported Independence

Students lead patient encounters with supervision available.

Each rotation increases responsibility while maintaining safety and accountability.

This scaffolding:

- Builds confidence
- Reduces cognitive overload

- Encourages reflective learning
- Reinforces mastery through repetition
- Develops clinical judgment

Competence emerges through repeated exposure, structured feedback, and deliberate practice.

7. Level 12 Embedded Clerkship Model

The RMU Level 12 model integrates:

- Vertical curriculum alignment
- Interdisciplinary collaboration
- Competency mapping
- Longitudinal evaluation
- Reflective learning cycles

Students follow patients across services, linking classroom knowledge to real clinical decision-making.

This embedded design:

- Prevents fragmented learning
- Promotes continuity of care understanding
- Encourages systems thinking
- Strengthens teamwork skills
- Supports professional identity formation

Students learn not only clinical content but also how to function within healthcare systems.

8. Development of Self-Directed Lifelong Learners

The clerkship intentionally cultivates:

- Self-assessment skills
- Adaptive expertise
- Curiosity-driven inquiry
- Evidence-based reasoning
- Professional resilience

Students maintain portfolios, set learning goals, and engage in guided reflection.

They learn to:

- Identify personal knowledge gaps
- Seek evidence independently
- Critically appraise information
- Update clinical reasoning continuously

The goal is transformation from exam-focused learners into evolving, self-sustaining professionals.

9. Distinctive Features of the RMU Level 12 Model

Compared to traditional clerkship systems, RMU stands out by:

- Early subspecialty integration
- Embedded participation within clinical teams
- Strong 40% continuous internal assessment
- Structured scaffolding of independence
- Longitudinal competency tracking
- Emphasis on reflective growth
- Alignment with national and international competency frameworks

The outcome is a graduate who is:

- Clinically competent
- Adaptable
- Ethical

- Reflective
- Team-oriented
- Prepared for increasing responsibility in final year and house job

Nephrology Block-1 Team

Block Name : Nephrology Block-1 (Module I-II)
Duration of module : 02 Weeks each module

	Block Committee				Block Task Force Team
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Umar	1	Coordinator	Dr. Mudassar Murtaza Cheema

			2	Co-Coordinator	Dr Mariam Ahmed, Dr Moavea Hassan
2.	Director DME	Prof. Dr. Rai Muhammad Asghar	3	DME Focal Person	Dr. Maryum Batool
3.	Convener Curriculum	Prof. Dr. Naeem Akhter			
4.	Dean Medicine	Prof. Dr. Khurram			
5.	Additional Director DME	Prof. Dr. Ifra Saeed			
6.	Chairperson Psychiatry	Prof Asad Tamizuddin Nizami			
7.	Chairperson Community Medicine	Associate Prof Dr Khola			**DME Implementation Team**
			1.	Director DME	Prof. Dr. Rai Muhammad Asghar
8.	Focal Person Psychiatry	Dr Zona Tahir	2.	Add. Director DME	Prof. Dr. Ifra Saeed
			3.	Deputy Director DME	Dr Shazia Zaib
			4.	Module planner & Implementation Coordinator	Dr. Omaima Asif
			5.	Editor	Dr Omaima Asif

Preamble

This curriculum is according to the standards set by following organizations.

1. Foundation for Advancement of International Medical Education and Research (FAIMER)
2. Accreditation Council for Graduate Medical Education (ACGME)
3. World Federation for Medical Education (WFME)
4. Undergraduate Education Policy 2023 from Higher Education Commission (HEC)
5. Pakistan Medical and Dental Council (PMDC) guidelines for undergraduate Medical Education Curriculum (MBBS) 2022

It is based on **SPICES** model of educational strategies which is student centered, problem based, integrated, community oriented and systematic. *

Teacher centered	□	Student centered	S
Information oriented	□	Problem based	P
Discipline based	□	Integrated	I
Hospital based	□	Community based	C
Standardized curriculum	□	Elective programs	E
Opportunistic	□	Systematic	S

*Harden, R. M., Sowden, S., & Dunn, W. R. (1984). Educational strategies in curriculum development: The SPICES model. Medical Education, 18, 284-297. http://dx.doi.org/10.1111/j.1365-2923.1984.tb01024.x

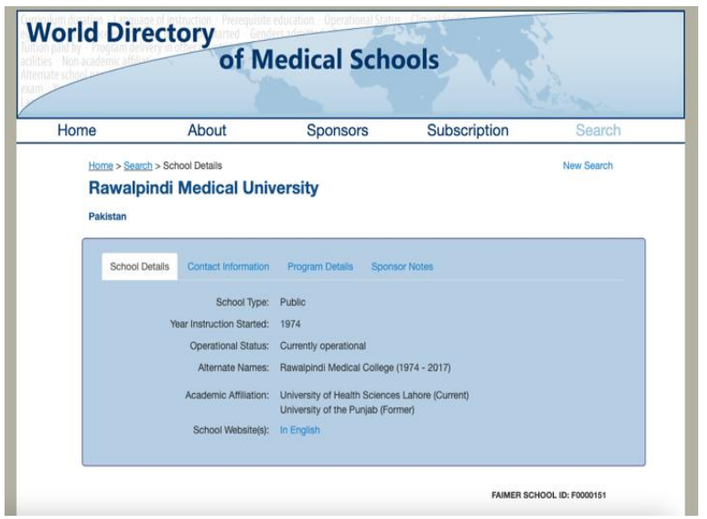
Reference Documents

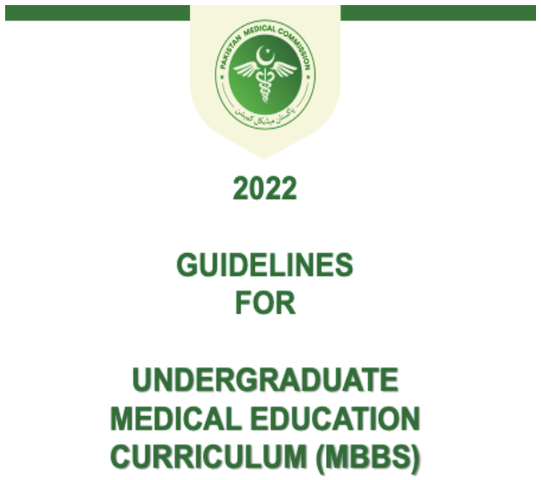
FAIMER™
A Division of Intealth

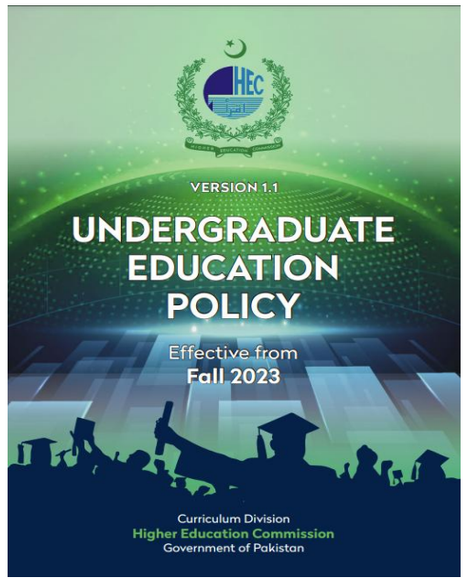
Foundation for Advancement of International Medical Education and Research

https://search.wdoms.org/?_gl=1*b2ddww*_ga*MTQyNTAwNzIxMi4xNzA2ODEwNjcx*_ga_R5BJZG5EYE*MTcwNjgzNjg3Ni4yLjAuMTcwNjgzNjg3Ni4wLjAuMA..

https://wfme.org/wp-content/uploads/2020/12/WFME-BME-Standards-2020.pdf







https://pmc.gov.pk/Documents/Examinations/Guidelines%20for%20Undergraduate%20Medical%20Education%20Curriculum%20(MBBS).pdf

https://www.hec.gov.pk/english/services/students/UEP/Documents/UGE-Policy.pdf

According to Pakistan Medical and Dental Council (PMDC) guidelines for undergraduate Medical Education Curriculum (MBBS) 2022

Seven-star doctor

Skillful	Knowledgeable
Community health promoter	Critical thinker
Professional	Scholar
Leader and role model	

1. Skillful (Clinical, Cognitive and Patient Care Skills)

Takes a focused history	Perform physical and psychological examination
Formulates a provisional diagnosis	Orders appropriate investigations
Performs various common procedures	Debates, formulates management plans
Manages time and prioritizes tasks	Ensures patient safety.

Advises and counsels, educates, recognizes and takes in to consideration issues of equality
Describes and debates the reasons for the success or failures of various approaches

2. Knowledgeable (Scientific Knowledge for Good Medical Practice)

Differentiates, relates, applies and ensures knowledge is gained.

3. Community Health Promoter (Knowledge of Population Health and Healthcare Systems)

Understands their role and be able to take appropriate action
Determinants of health impact on the community
Takes appropriate action for infectious non-communicable disease and injury prevention
Evaluates national and global trends in morbidity and mortality
Works as an effective member of health care team
Adopts a multidisciplinary approach for health promotion
Applies the basics of health systems
Makes decisions for health care.

4. Critical thinker (Problem Solving and Reflective Practice)

Use of information Critical data evaluation Dealing effectively with complexity, uncertainty and probability
Regular reflection on their practice Initiating participating in or adopting to change,
flexibility and problem-solving approach Commitment to quality assurance,
Raising concerns about public risks and patient safety.

5. Professional (Behavior and Professionalism)

Life long, self-directed learner Demonstrates continuous learning
Seeks peer feedback Manages information effectively
Provides evidence of continuing career advancement Functions effectively as a mentor and a trainer,
responds positively to appraisals and feedback Altruistic and empathetic
Ethical, Collaborator, Communicator.

6. Scholar and Researcher

a. Identifies a researchable problem and critically reviews the literature
b. Phrases succinct research questions and formulates hypotheses
c. Identifies the appropriate research design(s) in epidemiology and analytical tests in biostatistics to answer the research question.
d. Collects, analyzes and evaluates data, and presents results.
e. Demonstrates ethics in conducting research and in ownership of intellectual property.

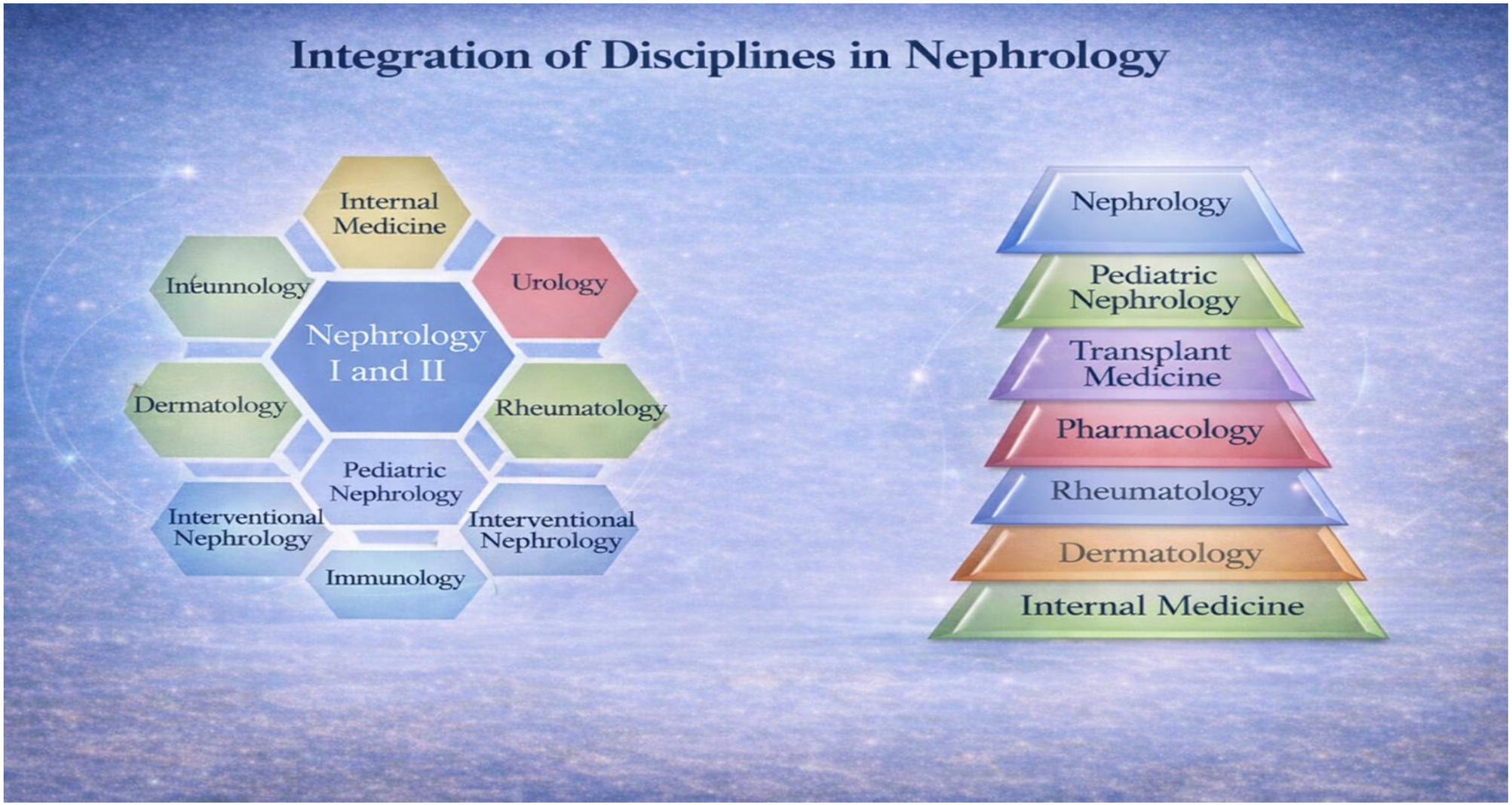
7. Leader and Role Model

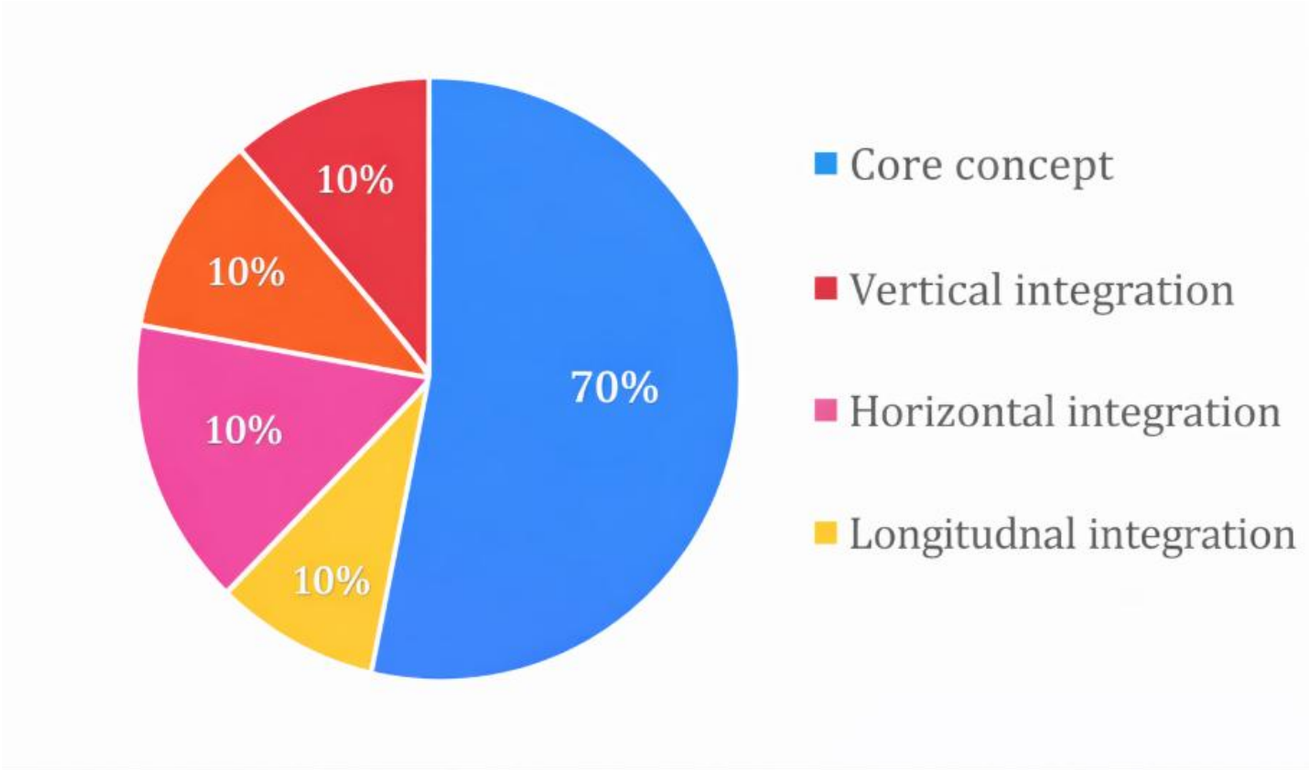
Demonstrates exemplary conduct and leadership potential in a. advancing healthcare b. enhancing medical education c. initiating, participating in and adapting to change, using scientific evidence and approaches d. Enhancing the trust of the public in the medical profession by being exceptional role model at work and when away e. accepting leadership roles f. Providing leadership in issues concerning society.

- Appreciate concepts & importance of
    - **Research**
    - **Biomedical ethics**
    - **Family medicine**
    - **Artificial Intelligence**

This module will run in 6 weeks duration. The content will be covered through introduction of topics. Instructional strategies are given in the time table and learning objectives are given in the study guides. Study guides will be uploaded on the university website.

Nephrology Integration




10%
10%
10%
70%
10%
Core concept
Vertical integration
Horizontal integration
Longitudnal integration

Study Guide: Terms & Abbreviations

Contents

Tables & Figures

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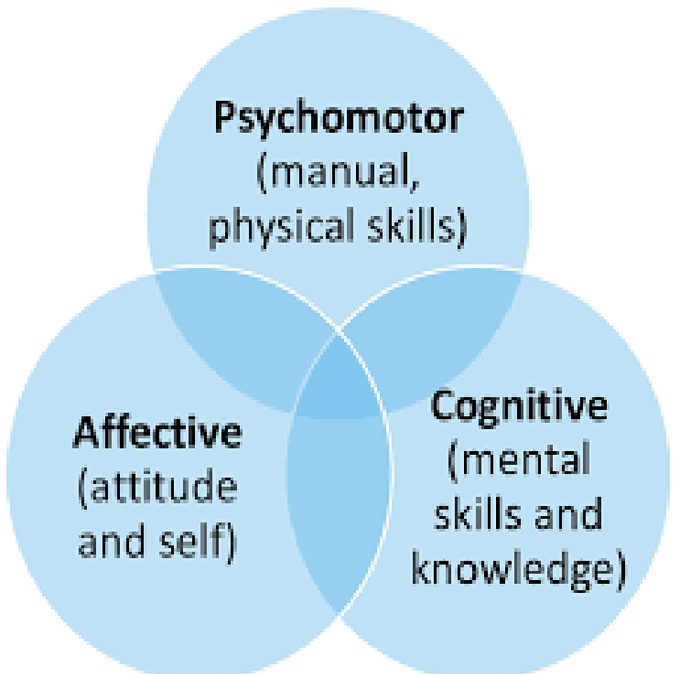
Domains of learning according to Blooms Taxonomy



Sr. #	Abbreviation	Domains of learning
1.	C	**Cognitive Domain:** knowledge and mental skills.
	• C1	Remembering
	• C2	Understanding
	• C3	Applying
	• C4	Analyzing
	• C5	Evaluating
	• C6	Creating
2.	P	**Psychomotor Domain:** motor skills.
	• P1	Imitation
	• P2	Manipulation
	• P3	Precision
	• P4	Articulation
	• P5	Naturalization
3.	A	**Affective Domain:** feelings, values, dispositions, attitudes, etc
	• A1	Receive
	• A2	Respond
	• A3	Value
	• A4	Organize
	• A5	Internalize

Section I

Teaching and Learning Methodologies / Strategies

1. Large Group Interactive Session (LGIS)

The large group interactive session is structured format of Prof Umar Model of Integrated lecture. It will be followed for delivery of all LGIS. Lecturer will introduce a topic or common clinical condition and explain the underlying phenomena through questions, pictures, videos of patients, interviews and exercises, etc. Students are actively involved in the learning process.

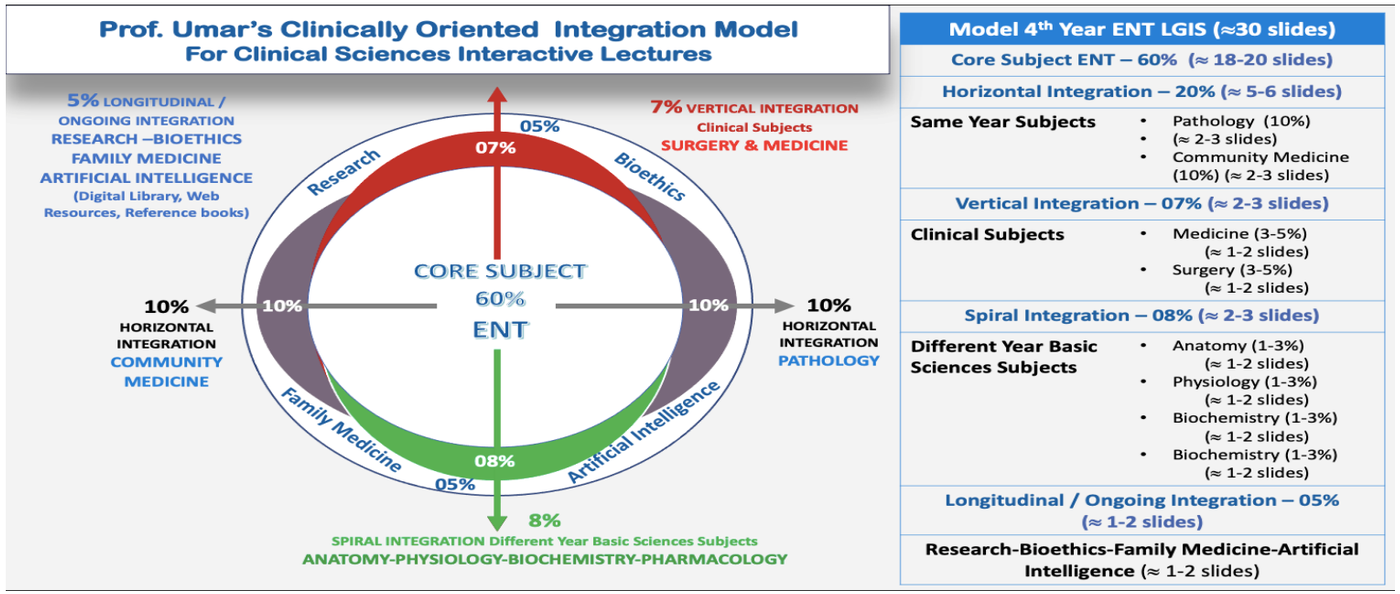


Figure 1. Prof Umar's Model of Integrated Lecture

2. Small Group Discussion (SGD)

This format helps students to clarify concepts acquire skills and attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics or power point presentations. Students exchange opinions and apply knowledge gained from lectures, SGDs and self-study. The facilitator role is to ask probing questions, summarize and helps to clarify the concepts.

Step 1	Sharing of Learning objectives by using students Study guides	First 5 minutes
Step 2	Asking students pre-planned questions from previous teaching session to develop co-relation (these questions will be standardized)	5minutes
Step 3	Students divided into groups of three and allocation of learning Objectives	5minutes
Step 4	ACTIVITY: Students will discuss the learning objectives among Themselves	15 minutes
Step 5	Each group of students will present its learning objectives	20 min
Step 6	Discussion of learning content in the main group	30min
Step 7	Clarification of concept by the facilitator by asking structured questions from learning content	15 min
Step 8	Questions on core concepts	
Step 9	Questions on horizontal integration	
Step 10	Questions on vertical integration	
Step 11	Questions on related research article	
Step 12	Questions on related ethics content	
Step 13	Students Assessment on online MS teams (5 MCQs)	5 min
Step 14	Summarization of main points by the facilitator	5 min
Step 15	Students feedback on the SGD and entry into logbook	5 min
Step 16	Ending remarks	

Table 2. Standardization of teaching content in Small Group Discussion

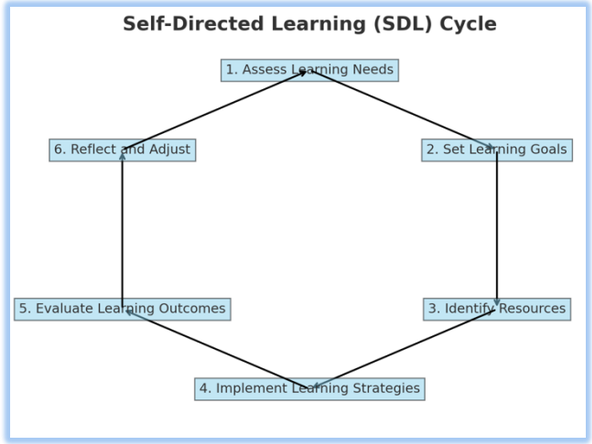
S.No	Topics	Approximate %
1	Title Of SGD	
2	Learning Objectives from Study Guides	
3	Horizontal Integration	5%+5% = 10%
4	Core Concepts of the Topic	70%
5	Vertical Integration	10%
6	Related Advance Research points	3%
7	Biomedical Ethical points	2%
8	Spiral integration	5%

Table 3. Steps of taking Small Group Discussions

3. Self-Directed Learning (SDL)

- Self- directed learning is a process where students take primary charge of planning, continuing and evaluating their learning experiences.
- Time home assignment
- Learning objectives will be defined
- Learning resources will be given to students = Text book (page no), web site
- Assessment: i. online on LMS (Mid module/ end of Module)

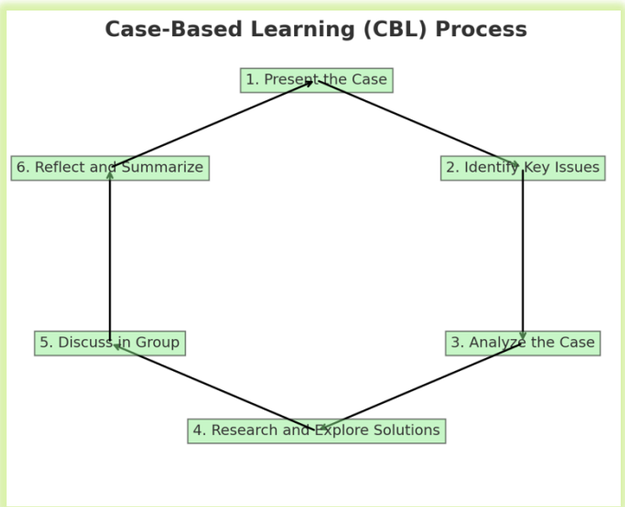
  ii. OSPE station



4. Case Based Learning (CBL)

- It's a learner centered model which engages students in discussion of specific scenarios that resemble typically are real world examples.
- Case scenario will be given to the students
- Will engage students in discussion of specific scenarios that resemble or typically are real-world examples.
- Learning objectives will be given to the students and will be based on:

i. To provide students with a relevant opportunity to see theory in practice
ii. Require students to analyze data in order to reach a conclusion.
iii. Develop analytic, communicative and collaborative skills along with content knowledge.

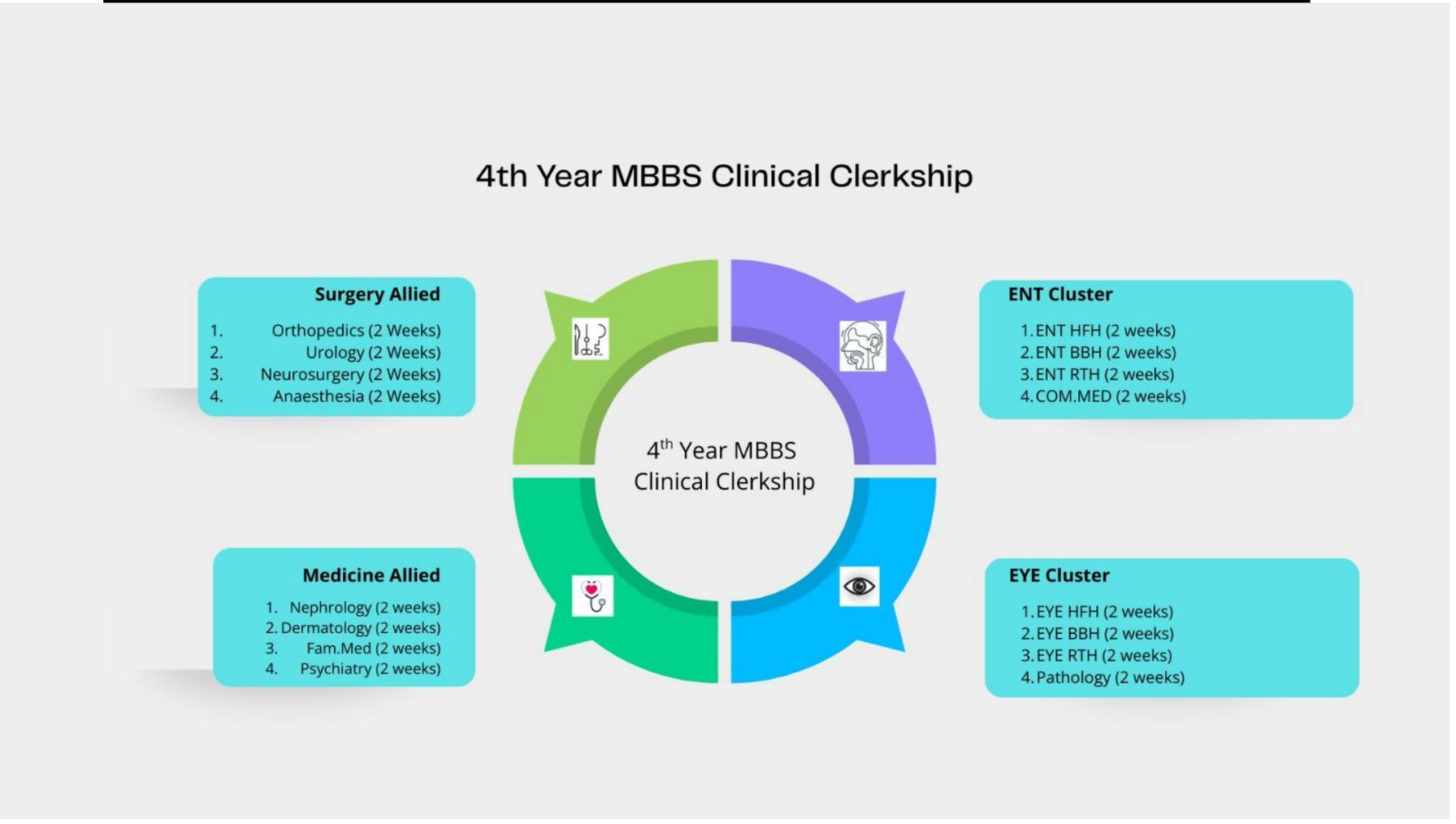


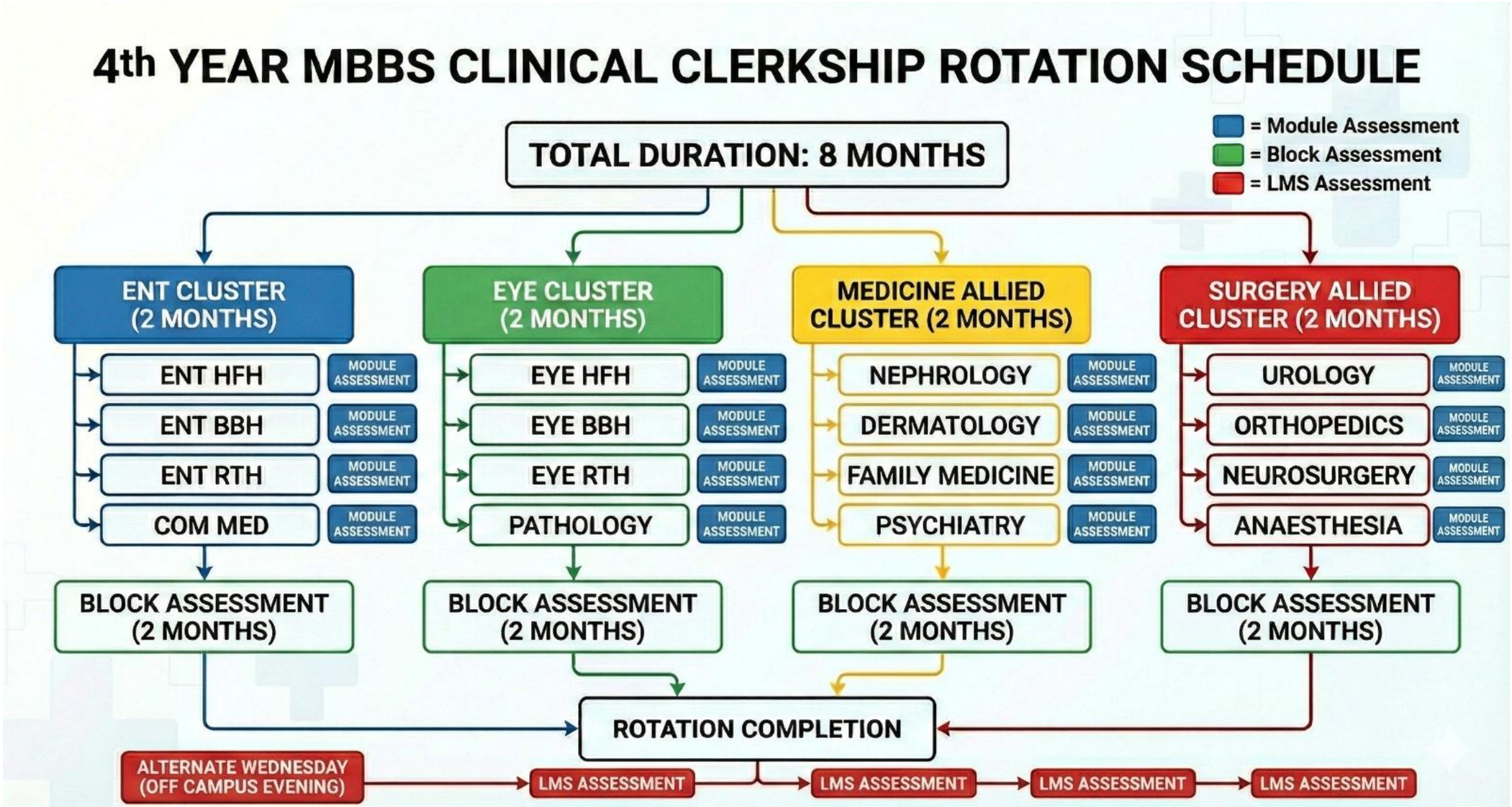
SECTION-II

Learning Objectives, Themes, Transdisciplinary Joint sessions

Contents

Symptom-Oriented Integrated Clinical Clerkship (SOICC) Nephrology




4th YEAR MBBS CLINICAL CLERKSHIP ROTATION SCHEDULE
TOTAL DURATION: 8 MONTHS
= Module Assessment
= Block Assessment
= LMS Assessment
ENT CLUSTER (2 MONTHS)
ENT HFH
ENT BBH
ENT RTH
COM MED
MODULE ASSESSMENT
BLOCK ASSESSMENT (2 MONTHS)
EYE CLUSTER (2 MONTHS)
EYE HFH
EYE BBH
EYE RTH
PATHOLOGY
MODULE ASSESSMENT
BLOCK ASSESSMENT (2 MONTHS)
MEDICINE ALLIED CLUSTER (2 MONTHS)
NEPHROLOGY
DERMATOLOGY
FAMILY MEDICINE
PSYCHIATRY
MODULE ASSESSMENT
BLOCK ASSESSMENT (2 MONTHS)
SURGERY ALLIED CLUSTER (2 MONTHS)
UROLOGY
ORTHOPEDICS
NEUROSURGERY
ANAESTHESIA
MODULE ASSESSMENT
BLOCK ASSESSMENT (2 MONTHS)
ROTATION COMPLETION
ALTERNATE WEDNESDAY (OFF CAMPUS EVENING)
LMS ASSESSMENT
LMS ASSESSMENT
LMS ASSESSMENT
LMS ASSESSMENT

RATIONALE OF THE NEPHROLOGY CLINICAL CLERKSHIP PROGRAM	GENERAL LEARNING OBJECTIVES
The 4th Year MBBS Nephrology Clinical Clerkship is structured around high-frequency renal presentations and comprehensive kidney-focused assessment rather than traditional disease classifications alone. This thematic, presentation-based approach reflects real clinical practice, where patients present with symptoms such as edema, hematuria, oliguria, hypertension, electrolyte imbalance, or acute rise in creatinine rather than predefined diagnostic labels. This model promotes the development of clinical reasoning by enabling students to construct integrated clinical formulations based on presenting features, differentiate physiological variation from renal pathology, recognize common kidney disorders, and identify red flags such as rapidly rising creatinine, refractory hyperkalemia, severe metabolic acidosis, fluid overload, uremic complications, and systemic causes of renal dysfunction requiring urgent intervention. The structure emphasizes hypothesis-driven diagnostic thinking, fluid and electrolyte interpretation, and patient-centered assessment rather than rote memorization of staging systems or isolated laboratory thresholds. The clerkship operates within a workplace-based, competency-driven framework where students progressively advance from foundational skills such as focused history taking, volume status assessment, urine examination, and interpretation of renal function tests to integrated diagnostic formulation and management planning across outpatient nephrology clinics, dialysis units, inpatient services, transplant settings, and consultation services. This spiral progression ensures increasing clinical complexity, contextual exposure, and refinement of procedural awareness, clinical judgment, communication, and multidisciplinary collaboration in authentic patient care environments.	**Nephrology Integrated Clinical Clerkship (4th Year MBBS)** By the end of the 2-week clerkship, students will be able to: **Clinical Assessment Competencies** 1. Take a focused, symptom-oriented nephrology history for patients presenting with: • Edema (periorbital, peripheral, generalized) • Hematuria (microscopic or gross) • Proteinuria or frothy urine • Oliguria, anuria, or polyuria • Acute rise in creatinine • Flank pain or renal colic • Hypertension, especially resistant or early-onset • Electrolyte-related symptoms (muscle weakness, palpitations, confusion) • Uremic symptoms (fatigue, nausea, pruritus, altered sensorium) 2. Perform systematic renal assessment including: • Comprehensive renal history including comorbidities (diabetes, hypertension, autoimmune disease) • Medication review including nephrotoxic drugs • Fluid balance and volume status assessment • Blood pressure measurement and cardiovascular evaluation • Urinalysis interpretation • Renal function test interpretation (creatinine, eGFR, urea) • Electrolyte analysis (sodium, potassium, bicarbonate, calcium, phosphate)

Educationally, the program aligns with: • **Harden's Integration Ladder (Levels 9–11)** by integrating basic sciences with clinical disciplines and encouraging interdisciplinary reasoning. • **Miller's Pyramid**, progressing from "Knows How" to "Shows How" and approaching "Does" under supervision. • **Competency-Based Medical Education (CBME)** through observable, measurable clinical competencies. • **Patient-centered care principles**, emphasizing communication, professionalism, and ethical responsibility.	• Acid-base assessment • Indications for renal imaging • Use of collateral history when appropriate **Clinical Reasoning Competencies** 3. Generate appropriate differential diagnoses based on presenting renal symptoms. 4. Differentiate: • Acute kidney injury (AKI) from chronic kidney disease (CKD) • Pre-renal, intrinsic renal, and post-renal causes of kidney dysfunction • Primary renal disease from systemic causes (e.g., diabetes, lupus, vasculitis, sepsis) 5. Recognize nephrological emergencies including: • Rapidly progressive glomerulonephritis • Severe hyperkalemia • Pulmonary edema due to fluid overload • Severe metabolic acidosis • Uremic encephalopathy • Hypertensive emergency with renal involvement • Dialysis access complications 6. Formulate integrated case formulations incorporating: • Hemodynamic factors • Structural renal pathology • Immunological mechanisms • Metabolic contributors • Social determinants affecting disease progression and access to dialysis or transplant

	Management & Safety Competencies 7.Outline initial management strategies for common renal conditions including: • Acute kidney injury • Chronic kidney disease • Nephrotic syndrome • Nephritic syndrome • Diabetic kidney disease • Electrolyte disturbances • Hypertensive nephropathy 8. Identify cases requiring urgent referral, admission, dialysis, or multidisciplinary intervention. 9. Demonstrate understanding of: • Principles of renal pharmacology • Dose adjustment in renal impairment • Nephrotoxic medications and prevention strategies • Indications and monitoring for dialysis • Basics of transplant immunosuppression 10. Participate in ward rounds, dialysis unit activities, and outpatient clinics including: • Fluid prescription review • Electrolyte management • Dialysis prescription basics • Access care (AV fistula, catheter) • Medication reconciliation **Communication & Professionalism**

	11. Counsel patients and families regarding: • Nature and progression of kidney disease • Lifestyle modification (dietary sodium, fluid restriction, protein management) • Medication adherence • Dialysis modalities (hemodialysis, peritoneal dialysis) • Transplant options • Prevention of complications 12. Communicate sensitively with patients facing: • End-stage kidney disease • Dialysis initiation • Transplant evaluation • Prognostic uncertainty 13. Maintain confidentiality, informed consent, and ethical conduct in renal practice. 14. Demonstrate empathy, cultural sensitivity, and non-judgmental communication, especially in chronic disease management. **Integration & Systems-Based Competencies** 15. Integrate physiology, pathology, pharmacology, immunology, and systemic disease processes with renal clinical assessment. 16. Collaborate effectively within multidisciplinary teams including: • Internal medicine • Urology • Rheumatology • Endocrinology

	• Transplant surgery • Dialysis nursing • Nutritionists • Social work 17. Recognize community resources including: • CKD screening programs • Dialysis networks • Transplant registries • Chronic disease support services 18. Understand legal and ethical considerations including: • Consent for dialysis and invasive procedures • Transplant eligibility and allocation ethics • End-of-life decision-making in advanced CKD • Capacity in uremic encephalopathy

WEEK 1 – Theme 1, 2,3 and 4

Theme	Theme	Core Competency Emphasis
Theme 1	Patient presented with generalized edema and frothy urine.	• Assess for nephrotic syndrome features (proteinuria, hypoalbuminemia, hyperlipidemia). • Evaluate volume status and blood pressure. • Interpret urinalysis and renal function tests. • Formulate initial investigation plan and supportive management.
Theme 2	Patient presented with hematuria and reduced urine output.	• Differentiate glomerular vs non-glomerular hematuria. • Assess for nephritic features (hypertension, edema, RBC casts). • Evaluate renal function and urgency of referral. • Develop initial management plan and identify red flags.
Theme 3	Patient presented with acute rise in creatinine.	• Differentiate AKI from CKD. • Identify pre-renal, intrinsic, and post-renal causes. • Assess fluid status and medication history. • Formulate urgent management including fluid resuscitation or obstruction relief.

Theme 4	Patient presented with severe hyperkalemia and muscle weakness.	• Interpret ECG changes and laboratory results. • Recognize life-threatening electrolyte imbalance. • Initiate emergency management protocol. • Identify underlying renal or systemic cause.
Theme 5	Patient presented with long-standing diabetes and worsening kidney function.	• Assess for diabetic kidney disease progression. • Evaluate proteinuria and cardiovascular risk. • Optimize blood pressure and glycemic control strategies. • Formulate long-term renoprotective management plan.
Theme 6	Patient presented with uncontrolled hypertension despite medications.	• Evaluate for secondary causes including renal artery stenosis and CKD. • Assess medication adherence and dosing in renal impairment. • Interpret renal imaging and laboratory findings. • Develop escalation and referral plan.
Theme 7	Patient presented with advanced CKD and uremic symptoms (fatigue, nausea, confusion).	• Assess severity and complications of CKD. • Identify indications for dialysis initiation. • Evaluate metabolic abnormalities and anemia. • Formulate comprehensive management including renal replacement therapy planning and counseling..
Theme 8	Assessment	

WEEK 2 – Theme 5, 6 and 7

Day	Clinical Case	Core Teaching Points	Harden Integration Level	Multidisciplinary (Level 11)	Skills	Attitude
Day 1	Patient with generalized edema and frothy urine	Nephrotic syndrome definition & causes, glomerular pathology, proteinuria mechanisms, complications (thrombosis, infections), management principles	Level 8–9: Clinical integration & reasoning	Nephrology, Pathology, Internal Medicine, Pharmacology	Focused renal history, volume assessment, urinalysis interpretation	Patient-centered communication, attentiveness to chronic disease impact
Day 2	Patient with hematuria and hypertension	Nephritic syndrome, glomerulonephritis, differential diagnosis of hematuria, immunological mechanisms, initial investigations management	Level 9: Clinical correlation	Nephrology, Immunology, Pathology, Rheumatology	Blood pressure measurement, urine microscopy interpretation, focused systemic examination	Clinical vigilance, respectful communication
Day 3	Patient with acute rise in creatinine	AKI definition & staging, pre-renal vs intrinsic vs post-renal causes, nephrotoxins, fluid management principles correlation	Level 9–10: Interdisciplinary clinical correlation	Nephrology, Internal Medicine, Emergency Medicine, Pharmacology	Fluid status assessment, medication review, interpretation of renal function tests	Urgency awareness, systematic clinical thinking
Day 4	Patient with severe hyperkalemia	Electrolyte physiology, ECG changes in hyperkalemia,	Level 9–10: Acute care integration	Nephrology, Cardiology, Emergency	ECG interpretation,	Calmness under pressure, patient

		emergency management protocol, dialysis indications		Medicine, Critical Care	emergency management planning, electrolyte analysis	safety prioritization
Day 5	Patient with long-standing diabetes and declining kidney function	Diabetic kidney disease, CKD staging, proteinuria management, cardiovascular risk reduction, renoprotective therapy	Level 9: Clinical integration	Nephrology, Endocrinology, Internal Medicine, Community Medicine	CKD staging, interpretation of eGFR trends, medication dose adjustment	Long-term care perspective, preventive approach
Day 6	Patient with fluid overload and breathlessness	Volume overload physiology, cardiorenal syndrome, diuretic strategies, dialysis indications	Level 9–10: Interdisciplinary clinical correlation	Nephrology, Cardiology, Internal Medicine, Critical Care	Volume status examination, fluid prescription, monitoring response to therapy	Holistic assessment, teamwork orientation
Day 7	Patient with advanced CKD being evaluated for dialysis	Indications for renal replacement therapy, dialysis modalities, vascular access, transplant overview, ethical considerations	Level 9: Clinical integration	Nephrology, Transplant Surgery, Dialysis Nursing, Social Work	Patient counseling, interpretation of metabolic complications, shared decision-making	Empathy, cultural sensitivity, respect for patient autonomy
Day 8	Assessment: Integrated renal case presentation	**:** Case formulation, diagnostic reasoning (AKI vs CKD vs GN vs systemic disease), investigation prioritization, ethical and professional practice	Level 10: Competency consolidation	Nephrology, Internal Medicine, Pathology	Structured case presentation, hypothesis-driven reasoning, management planning	Professionalism, reflective practice, clinical accountability

Specialty	Skill-Based Clerkship Learning Outcomes (LOs)
Nephrology (Primary Discipline)	• Perform focused renal history including edema, hematuria, oliguria, polyuria, hypertension, drug history, and systemic symptoms• Conduct comprehensive renal examination including volume status and blood pressure assessment• Interpret urinalysis, urine microscopy, renal function tests, and electrolyte panels• Differentiate AKI from CKD using clinical and laboratory parameters• Identify diagnostic criteria and clinical features of common renal disorders (AKI, CKD, nephrotic syndrome, nephritic syndrome, diabetic kidney disease)• Formulate differential diagnoses including systemic and obstructive causes• Develop initial management plan including fluid therapy, electrolyte correction, blood pressure control, and renoprotective strategies• Recognize indications for dialysis and renal replacement therapy• Present structured nephrology case using hypothesis-driven reasoning• Obtain informed consent for procedures and maintain ethical standards• Counsel patients regarding CKD progression, dialysis options, transplant considerations, and lifestyle modification
Pathology	• Correlate urine microscopy findings with glomerular and tubular pathology• Interpret renal biopsy reports at a conceptual level• Differentiate nephritic vs nephrotic pathology patterns• Understand immunological mechanisms in glomerulonephritis• Relate structural kidney damage to clinical manifestations
Pharmacology	• Adjust drug dosing in renal impairment• Identify nephrotoxic medications and preventive strategies• Explain mechanisms of diuretics, RAAS inhibitors, SGLT2 inhibitors, and immunosuppressants• Monitor for electrolyte disturbances related to medications• Counsel patients regarding medication adherence and safety in CKD
Internal Medicine	• Identify systemic diseases affecting the kidneys (diabetes, hypertension, lupus, vasculitis, sepsis) • Interpret laboratory investigations relevant to renal disease • Assess cardiovascular risk in CKD patients • Integrate metabolic, endocrine, and infectious causes of renal dysfunction • Manage comorbid conditions contributing to kidney disease progression
Emergency Medicine	• Recognize renal emergencies (severe hyperkalemia, pulmonary edema, uremic encephalopathy, hypertensive emergency) • Perform rapid assessment and stabilization • Initiate emergency management of electrolyte imbalance and fluid overload • Identify indications for urgent dialysis referral • Ensure patient safety during acute deterioration
Endocrinology	• Recognize diabetic kidney disease and metabolic contributors to CKD • Interpret glycemic control in renal impairment • Adjust antidiabetic medications in CKD • Manage mineral bone disorder in chronic kidney disease • Integrate metabolic control into renal protection strategies
Cardiology	• Understand cardiorenal syndrome • Correlate fluid overload with cardiac dysfunction • Assess hypertension in renal disease • Interpret ECG changes in electrolyte imbalance • Collaborate in management of cardiovascular complications of CKD
Community Medicine	• Understand epidemiology and public health burden of CKD • Identify risk factors and screening strategies for kidney disease • Promote early

	detection programs for diabetes and hypertension • Recognize community dialysis resources and transplant networks • Participate in prevention and awareness initiatives

This clerkship achieves:

- **Level 1–4** → Foundational applied sciences
- **Level 7–8** → Temporal coordination
- **Level 9** → Multidisciplinary integration
- **Level 10** → Interdisciplinary problem-solving
- **Level 11** → Transdisciplinary clinical decision-making

Trans-disciplinary Clinical Connect Session

"Acute Kidney Injury with Severe Hyperkalemia and Fluid Overload"

A 58 year old man with long-standing diabetes and hypertension is brought to the emergency department with progressive breathlessness, reduced urine output for three days, and generalized weakness. His family reports poor oral intake and recent use of over the counter pain medications for back pain.

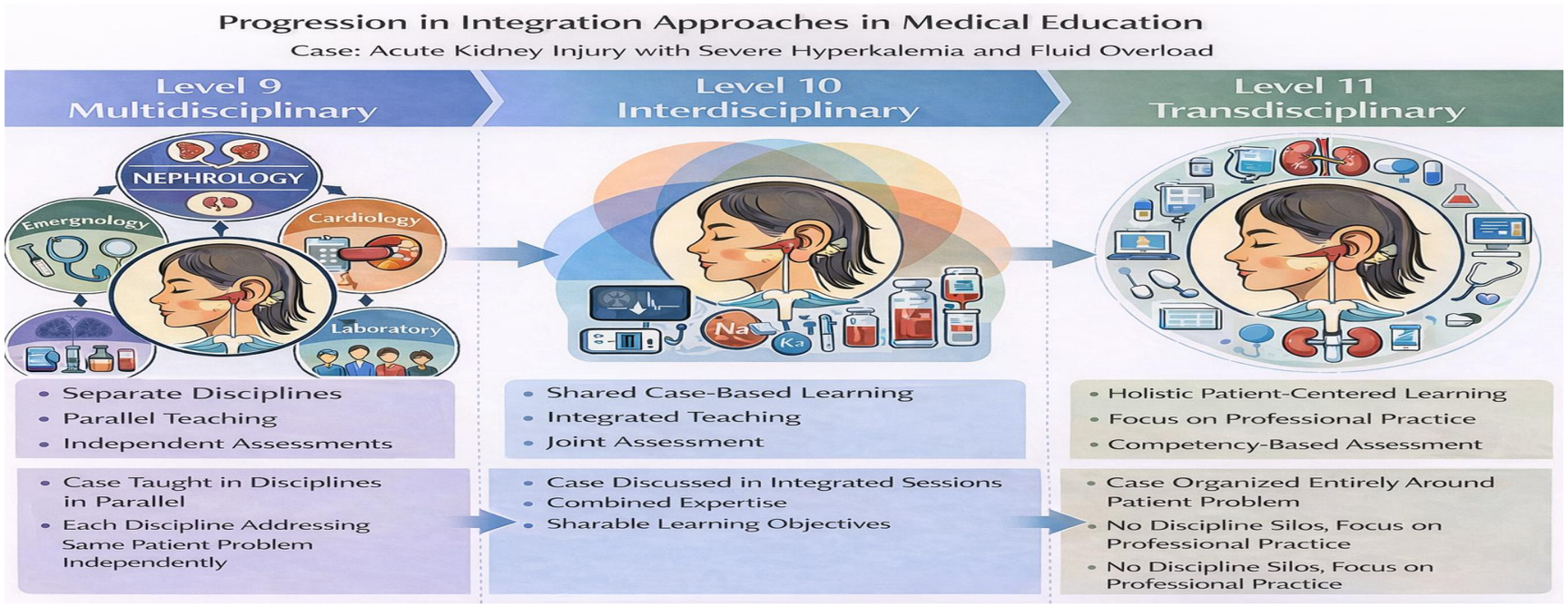
On examination, he appears drowsy and dyspneic. Blood pressure is elevated, pulse is irregular, and he has bilateral pitting edema with raised jugular venous pressure and basal lung crackles.

Electrocardiogram shows peaked T waves. Laboratory investigations reveal markedly elevated serum creatinine, high potassium, metabolic acidosis, and elevated blood urea. Urinalysis shows proteinuria and granular casts. He is admitted for urgent stabilization and consideration of dialysis.

Student Task (Problem Based Trigger)

Students are asked to:

• Identify the key clinical concerns in this patient



- Assess severity and immediate life-threatening risks
- Perform focused renal and volume status assessment
- Interpret ECG and laboratory investigations
- Differentiate AKI from CKD and identify possible precipitating factors
- Develop an emergency and comprehensive management plan
- Counsel the family regarding dialysis indications and prognosis

What makes this Harden's integration Level 11?

No subject headings separating disciplines

- Knowledge domains embedded naturally within clinical reasoning
- Organizing principle is the patient's problem, not specialties
- Learning mirrors authentic emergency and inpatient decision making
- Simultaneous integration of physiology, pharmacology, acute care, ethics, and communication

Integration

- Renal **pathophysiology** of acute kidney injury
- Electrolyte **physiology** and cardiac conduction
- **Pharmacology** of emergency hyperkalemia management and drug dose adjustment
- **Internal medicine** principles in diabetes and hypertension
- **Critical care** stabilization

• **Interventional nephrology** including dialysis access and renal replacement therapy

• Ethical decision making in initiating dialysis

Teaching Format:

- Small group facilitated learning
- Faculty from different backgrounds present but not teaching in silos
- Students built their care pathway themselves
- Assessment based on competence and clinical reasoning

Academic Justification statement:

The case has been designed to reflect Harden Level 11 (Transdisciplinary integration) where learning is structured around authentic patient problems rather than disciplinary categories.

List of Large Group Interactive Sessions Nephrology

S no	Topic	Content outline & subtopics	Learning objectives with learning domain	Teaching strategy	Assessment strategy

1	Glomerulonephritis & Nephrotic syndrome	pathological mechanism different types & treatment plan Etiology, clinical features& management plan	• Understand etiological agents/pathological mechanism behind Glomerulonephritis C2 • Classify different types of Glomerulonephritis. C2 • Individualize treatment plan according to types of GN. C3 • Understand the role of renal biopsy in GN. C3 • Know etiology of nephrotic syndrome. C2 • Describe clinical features of nephrotic syndrome C2 • laboratory workup of nephrotic syndrome C3 • Explain management plan of nephrotic syndrome.C3	LGIS	MCQS, SEQS
2	Nephritic syndrome	Etiology, clinical features& management plan	• Know etiology of nephritic syndrome. C2 • Describe clinical features of nephritic syndrome C2 • laboratory workup of nephritic syndrome C3 • Explain management plan of nephritic syndrome.C3	LGIS	MCQS, SEQS
3	Acute renal failure	clinical features Laboratory workup& management of AKD	• Recall causes of acute renal failure.C2 • Describe clinical features of acute and chronic renal failure C3 • Enlist Laboratory workup & renal imaging in chronic kidney disease. C3 • Explain Complications of CKD and management OF CKD (Both Pharmacological & Non-pharmacological). C3	LGIS	MCQS, SEQS

S no	Topic	Content outline & subtopics	Learning objectives with learning domain	Teaching strategy	Assessment strategy

1	Glomerulonephritis & Nephrotic syndrome	pathological mechanism different types & treatment plan Etiology, clinical features& management plan	• Understand etiological agents/pathological mechanism behind Glomerulonephritis C2 • Classify different types of Glomerulonephritis. C2 • Individualize treatment plan according to types of GN. C3 • Understand the role of renal biopsy in GN. C3 • Know etiology of nephrotic syndrome. C2 • Describe clinical features of nephrotic syndrome C2 • laboratory workup of nephrotic syndrome C3 • Explain management plan of nephrotic syndrome.C3	LGIS	MCQS, SEQS
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4	Chronic renal failure	clinical features Laboratory workup & management of CKD	• Recall causes of chronic renal failure. C2 • Describe clinical features of acute and chronic renal failure C2 • Enlist Laboratory workup & renal imaging in chronic kidney disease. C3 • Explain Complications of CKD and management OF CKD (Both Pharmacological & Non-pharmacological). C3	LGIS	MCQS, SEQS
5	Renal Tumors	clinical features, types, diagnosis and treatment of renal tumors	• Common types of renal tumors • Pathogenesis of renal tumors • Diagnosis and treatment of renal tumors	LGIS	MCQS, SEQS
6.	Renal replacement therapy	Main modalities Basic principles and indications of renal replacement therapy	• Main modalities of renal replacement therapy • Basic principles of renal replacement therapy • Indications of renal replacement therapy • Compare Hemodialysis VS Peritoneal Dialysis • Management plan for a patient requiring long term dialysis	LGIS	MCQS, SEQS
7.	Urinary Tract Infection	clinical features& management plan of UTI	• Know common microbes causing UTI, according to various age groups. C2 • Identify symptoms and physical findings in UTI. C3 • Differentiate between uncomplicated and complicated UTI. C2 • Enlist laboratory workup required in UTI and describe pharmacological treatment plan. C3	LGIS	MCQS, SEQS

Assessment Policy

OFFICE OF THE VICE CHANCELLOR
RAWALPINDI MEDICAL UNIVERSITY
RAWALPINDI.
Ph.051-9290360, 051-9330060
Fax No.051-9290519, 051-9330062
No. 1372/RMU, Dated: 30/01/2026
A-7

All Chairpersons/HoDs
Basic & Clinical Sciences Departments,
Rawalpindi Medical University,
Rawalpindi.

Subject: **Revised Professional Examinations Policy – MBBS (1st to Final Year) 2025**

Please find attached the revised Professional Examinations Policy for 1st to Final Year MBBS, aligned with TOS for 2025, for reference and implementation please.

Vice Chancellor
Rawalpindi Medical University
Rawalpindi

No. & Date Even
Copy to:
1. All concerned
2. Office Superintendent, RMU, Rwp.
3. Office file.

Vice Chancellor
Rawalpindi Medical University
Rawalpindi

SECTION-III

Rawalpindi Medical University (RMU)

Revised Professional Examination Policy – MBBS (First to Final Year)

(Aligned with Final Annual Assessment Table of Specifications year 2025)

1. Purpose and Scope

This policy defines the structure and rules for Final Professional Examinations for all MBBS professional years at Rawalpindi Medical University (RMU).
It ensures consistency, transparency, and alignment with the Table of Specifications (TOS 2025) approved by Board of Faculty.

2. **Definitions**

- **Block:**
  A thematic academic unit (e.g., Block I, II, III etc) comprising multiple subjects.
- **Component (Subject):**
  Each subject within a Block (e.g., Pharmacology , Pathology , Community Medicine Physiology etc.).
- **Sub-components:**
  Each subject has two assessment parts:
  - Theory (Knowledge Component) – MCQs, SEQs.
  - Practical / Skills Component – OSPE, OSCE, OSVE, Viva.
- **Continuous Internal Assessment (CIA):**
  40% marks calculated from CIA (30% from module , block assessments and 10% from LMS-based assessments).
- Final Annual Assessment: Assessment taken at the end of academic year and carries 60% of the total marks for the final annual assessment

3. Passing Criteria (As Per Final Annual Assessment TOS 2025)

To be declared Pass in a Block, a student must:

3.1. At Subject (Component) Level:

- Secure at least 50% marks in each subject of the relevant Block.
- Within each subject, both theory and practical sub-components must be cleared separately (≥50% in each)

3.2. At Block Level (Aggregate):

- Obtain at least 50% aggregate marks in the entire block (sum of all subjects +CIA)

3.4. Example Calculation for passing criteria

Block 3 of year 4 MBBS

Subject	Total Marks		Theory	Practical	Minimum marks required to pass theory	Minimum marks required to pass practical
	Prof	CIA	Prof Marks +CIA	Prof Marks +CIA		
Pharmacology	50	40	25+20=45	25+20=45	22.5	22.5
Community Medicine	30	20	15+10=25	15+10=25	12.5	12.5
Pathology	100	60	50+30=80	50+30=80	40	40
Total Marks (Block)	180	120	150	150	75	75

4. Failing Criteria

Students not meeting criteria mentioned in clause 3.1 and 3.2 will be declared failed

5. Examination Rules

1. Each Block shall be considered a complete academic and assessment unit. A student shall be declared *pass in the Block* only when all its constituent components (subjects) are passed and the overall Block Aggregate reaches the prescribed level(score).
2. It is mandatory to pass each subject within its respective block, not on the aggregate marks of that subject across all blocks.
3. **Failure in a Subject (Component):**
   If a student fails in any component (subject) within a Block, they shall appear in relevant block only in that failed subject (s) during the Supplementary Examination.
4. **Reappearance in Sub-components:**
   Within the failed subject, the student shall reappear in both Theory and Practical sub-components, regardless of which sub-component was failed earlier.
5. **Failure in Block Aggregate:**
   If a student passes all individual subjects (each securing ≥**50%**) but fails to achieve the required Block Aggregate of 50%, the student shall reappear in the entire Block (all subjects) during the Supplementary Examination.
6. **Continuous Internal Assessment (CIA):**
   The CIA marks shall be carried forward to the Supplementary Examination.
7. **Structure and Weightage:**
   The Supplementary Examination shall follow the same format, structure, and weightage as the Final Annual (Professional) Examination.

6. Eligibility for Supplementary Examination

A student shall be eligible for Supplementary Examination if:

1. They have completed the required regular attendance and CIA as per policy.
2. They have failed in one or more subjects (components) or failed to meet the aggregate as per passing criteria as mentioned in clause 3.1 and 3.2.

Prof. Dr. Muhammad Umar
Vice Chancellor
Rawalpindi Medical University
Rawalpindi

Reference:

- *UHS Policy*
- *PMDC Policy*

THEME -BASED LMS Assessment Document

4th yr MBBS 2026

Introduction:

A Learning Management System (LMS) is a software application or platform used to deliver, manage, and track educational content and training programs. It helps organizations, institutions, or businesses deliver learning experiences to learners in an organized, scalable, and accessible way.

1.Course Creation & Management:

•Allows instructors or administrators to create and organize courses, modules, lessons, and assessments.

•Supports multimedia content such as videos, quizzes, PDFs, and presentations.

2.User Management:

Facilitates the creation of user profiles for learners, instructors, and administrators. Allows tracking of individual progress, achievements, and performance.

3.Assessment & Testing: Includes features for creating and administering quizzes, assignments, and exams. Provides automated grading and feedback to learners.

4.Reporting & Analytics:

- Tracks learner performance, course completion rates, and engagement levels.
- Provides insights to instructors and administrators for informed decision-making.

5.Communication Tools:

- Integrates discussion boards, chat features, and email to facilitate communication between learners and instructors.
- Supports notifications and announcements.

6.Scalability & Flexibility:

- Can accommodate a growing number of learners or users.
- Supports a variety of learning styles, including synchronous (live) and asynchronous (self-paced) learning.

7.Mobile Access: Many LMS platforms are mobile-friendly or offer mobile apps to support learning on the go.

Implementation of LMS:

To ensure the effective implementation of the Learning Management System (LMS), the following steps will be undertaken:

1.Infrastructure Setup:

The LMS will be hosted on a well-equipped platform capable of handling multiple users simultaneously, ensuring reliability and performance during peak usage times.

2.IT Department Support:

A dedicated IT department will be responsible for managing the system, providing technical support, and ensuring smooth operation.

3.User Credentials:

Unique IDs and passwords will be issued to each student by the IT department, granting secure access to the LMS. Students will be guided on how to use the platform effectively.

4.Exam Scheduling:

Dates and times for exams will be pre-set within the LMS, allowing students to prepare accordingly. The scheduling system will ensure timely availability of test materials and instructions

5.Automated Notifications:

Automated messages will be sent to students to inform them of upcoming exams, deadlines, or important updates. These notifications will ensure students remain informed and prepared.

6.Test Notices:

Detailed test notices, including exam guidelines, formats, and schedules, will be shared with students through the LMS to ensure clarity and readiness.

This structured implementation plan will enable the LMS to function effectively, fostering a productive and organized learning environment for both students and faculty.

LEARNING MANAGEMENT SYSTEM RMU

- A campus management system is being utilized as a learning resource.
- Faculty members from all disciplines, both basic and clinical, have been actively involved and trained in using these systems to deliver lectures effectively.

- The faculty is responsible for uploading lectures, assignments, and weekly assessments.
- Each student has been provided with a unique login to access the lectures and resources on the LMS.
- Attendance for each academic activity—lectures, interactive sessions, quizzes, and assignments—is recorded separately.
- Faculty members are required to mark attendance immediately after each lecture

Objectives of a Learning Management System (LMS) for Undergraduate Medical Students

The primary objective of a Learning Management System (LMS) for undergraduate medical students is to enhance the quality of medical education by providing a comprehensive, interactive, and accessible digital platform that facilitates:

- **Efficient Delivery of Educational Content:**

  To enable faculty to upload and organize lectures, assignments, assessments, and other learning resources systematically.

- **Student-Centered Learning:**

  To promote self-paced, flexible learning by granting students 24/7 access to educational materials tailored to their curriculum.

- **Interactive and Engaging Learning:**

  To foster active engagement through features like discussion forums, quizzes, and virtual interactive sessions.

- **Streamlined Academic Monitoring:**

  To track student attendance, performance, and progress through automated attendance marking, assessments, and progress dashboards.

- **Standardization and Quality Assurance:**

To ensure uniformity in educational delivery across various disciplines and compliance with institutional and accreditation standards.

- **Feedback and Continuous Improvement:**

To integrate feedback mechanisms that involve students, faculty, and other stakeholders, driving continuous quality improvement.

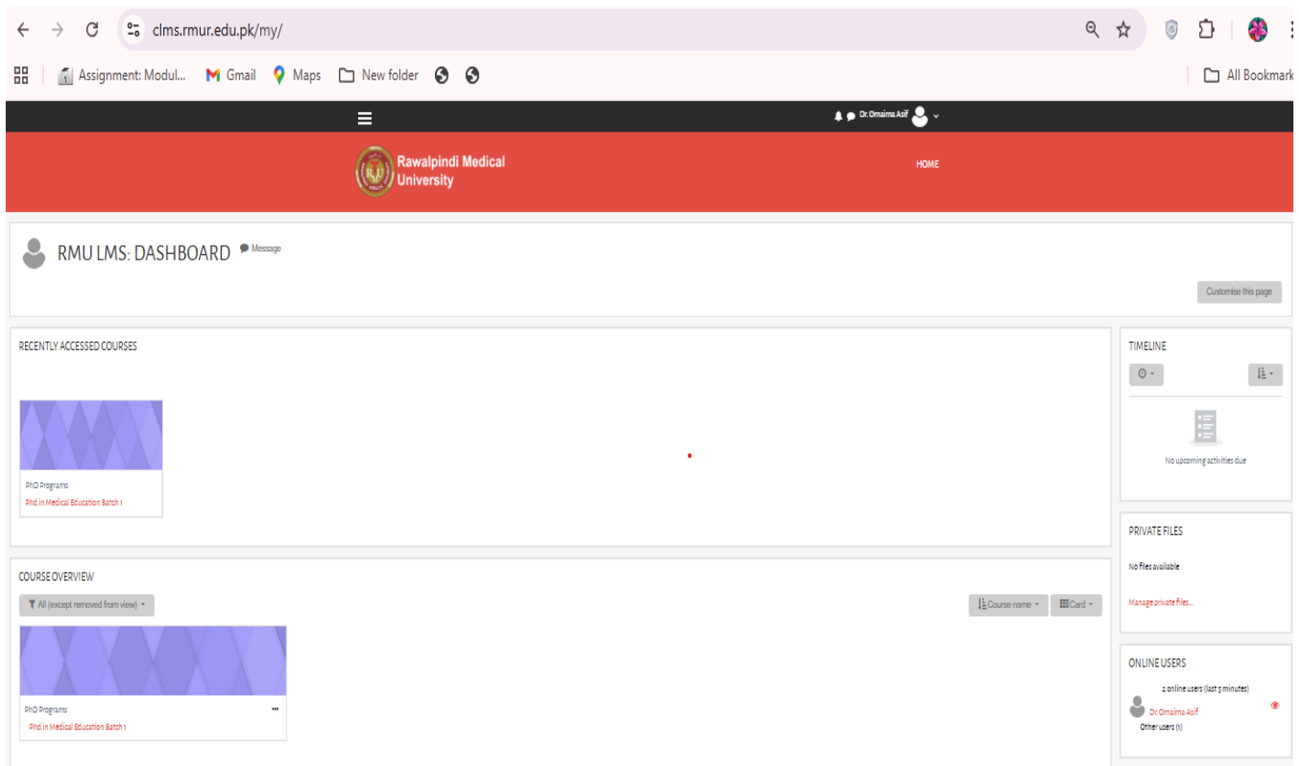
- **Integration of Technology in Medical Education:**

To familiarize students with digital tools and resources essential for modern medical practice and research.

By achieving these objectives, the LMS supports the holistic development of medical students, ensuring they are well-prepared for clinical practice and lifelong learning.

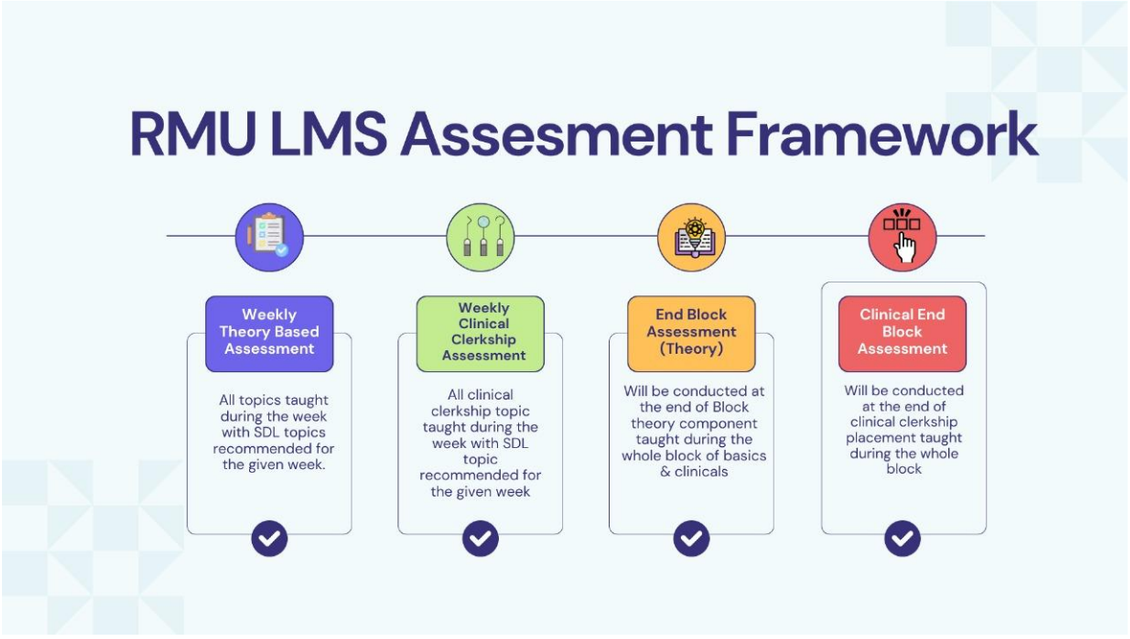
RMU LMS Website

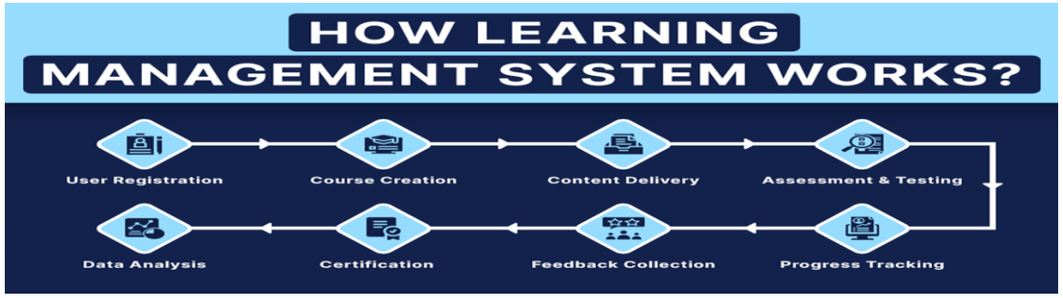
Weblink: https://clms.rmur.edu.pk/

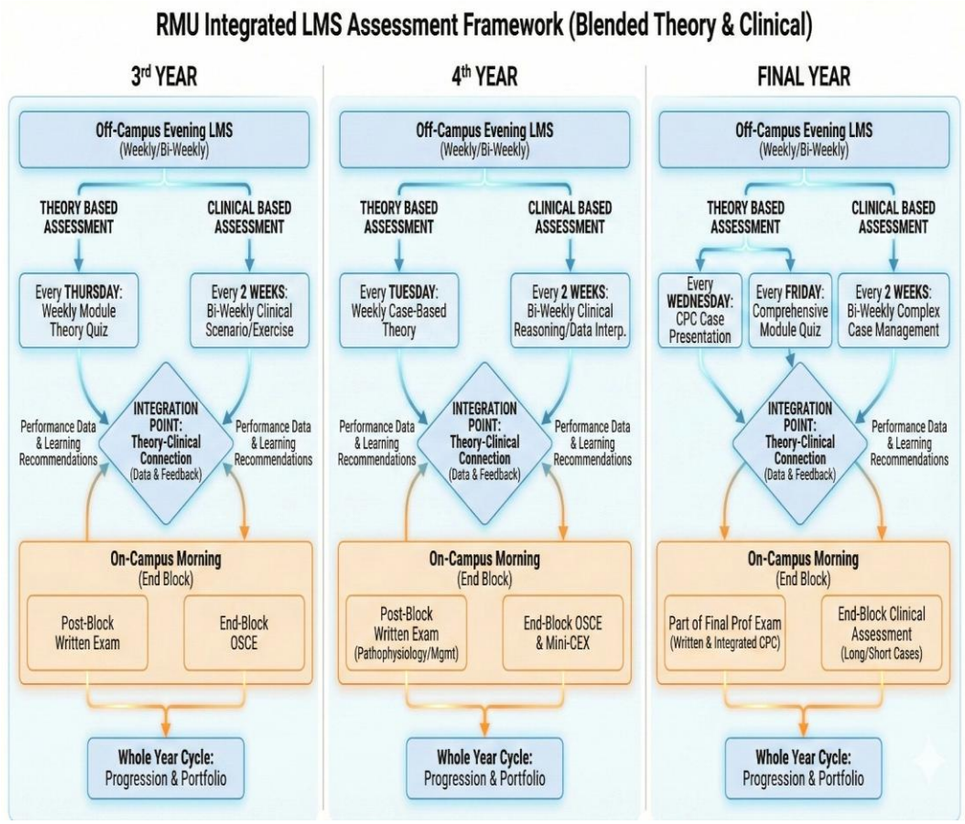


Framework for LMS Assessment for Undergraduate Medical Students

An effective Learning Management System (LMS) assessment framework for undergraduate medical students should be structured to evaluate knowledge, skills, and attitudes systematically. It should also align with educational objectives, regulatory standards, and the specific needs of medical education. Below is a comprehensive framework:







1. Goals and Objectives of Assessment

- **Knowledge:** Evaluate understanding of basic and clinical sciences.
- **Skills:** Assess critical thinking, clinical reasoning, and procedural skills.
- **Attitudes:** Foster professionalism, ethical decision-making, and communication skills.
- **Feedback:** Provide timely, constructive feedback to support learning and growth.

2. Components of LMS-Based Assessment

a. Formative Assessments

- **Purpose:** Monitor ongoing learning and identify areas needing improvement. It includes
    - Online quizzes (MCQs, EMQs)
    - Short assignments or reflections
    - Case-based discussions

- Interactive polls during live sessions
- **Schedule :** Weekly or module-specific

b. Practical/Skill-Based Assessments

- **Purpose:** Assess clinical skills, diagnostic reasoning, and procedural competence. Practical/skill based assessments can be taught through
  - Virtual simulations (e.g., diagnostic procedures, patient management)
  - Video submissions demonstrating skills (e.g., history-taking, physical examination)
  - Peer assessment of clinical skills via uploaded videos

c. Attendance and Participation.

Its purpose is to encourage consistent engagement in academic activities. Student's attendance is actively monitored through LMS via

- Attendance tracking for lectures, discussions, and interactive sessions.
- Participation metrics (e.g., activity in discussion forums, live Q&A sessions).

d. Feedback Mechanisms: Its purpose is to enhance learning and improve course delivery. Feedback monitoring can be done by following mechanisms:

- Embedded feedback forms after each session or activity.
- Peer and faculty reviews of assignments and projects.
- Self-assessment tools for reflection on progress.

3. Assessment Tools and Formats

- **MCQs/EMQs:** Test foundational knowledge and application.
- **OSCE Simulations:** Evaluate clinical reasoning and procedural skills.
- **Interactive Tools:** Use polls, chat, and breakout rooms for real-time engagement.
- **Assignments:** Assess understanding through essays, case reports, or reflections.
- **Group Projects:** Foster teamwork and problem-solving skills.

4. Implementation Strategies

- **Faculty Training:** Equip faculty with skills to design and deliver online assessments.
- **Student Orientation:** Familiarize students with LMS tools and expectations.
- **Tech Infrastructure:** Ensure robust LMS functionality and technical support.
- **Accessibility:** Provide accommodations for students with disabilities or limited resources

5. Quality Assurance and Continuous Improvement

- **Evaluation Proformas:** Gather periodic feedback from students and faculty.
- **Data Analytics:** Use LMS analytics to track student performance and participation.
- **Audit Mechanisms:** Regularly review and update the assessment framework.
- **Stakeholder Input:** Incorporate suggestions from students, faculty, and external reviewers.

6. Compliance with Regulatory Standards

Launching of LMS in RMU is in alignment with regulatory bodies . Digital learning at RMU aims at

- Alignment assessments with accreditation and medical council guidelines (e.g., HEC, WFME).

- Ensure assessments address core competencies, including knowledge, skills, and professionalism.

This LMS assessment framework integrates diverse evaluation methods to ensure holistic learning and competency development in undergraduate medical students. It fosters an interactive, adaptive, and equitable learning environment, preparing students for the demands of modern medical practice.

Importance of LMS

A Central Pillar of Continuous Internal Assessment (CIA)

In today's rapidly evolving educational landscape, digital learning isn't just an add-on it's the new backbone of academic progress. Our Learning Management System (LMS) stands at the heart of this transformation, bringing structure, consistency, and accessibility to the way students learn and the way faculty deliver content.

By integrating LMS into the Continuous Internal Assessment (CIA) framework, our institution takes a major step forward in aligning with global best practices. LMS-based assessments now officially hold **10% weightage** in the overall evaluation, making regular participation not just beneficial but essential for every student.

Why LMS Matters

1. Streamlined Access to Learning

The LMS gives students a single, organized digital space where lectures, notes, assignments, quizzes, and announcements are available anytime, anywhere. No missed updates, no lost handouts everything stays just a click away.

2. Consistent, Transparent Assessment

With weekly formative and summative assessments conducted through LMS, students get a clear picture of their academic standing. The system ensures fairness, automated scoring where appropriate, and immediate feedback so learners can identify strengths and areas needing improvement.

3. Builds Stronger Learning Habits

Regular LMS assessments encourage students to stay engaged throughout the semester instead of relying on last-minute preparation. This continuous learning approach improves retention, confidence, and performance in final exams.

4. Enhances Interaction and Engagement

Through discussion forums, digital assignments, and interactive features, the LMS promotes active learning. Students participate more, collaborate more, and take greater responsibility for their progress.

5. Professional Readiness

Modern healthcare requires tech-savvy professionals who can adapt to digital tools. Using LMS throughout their training prepares students for the technologically advanced clinical and administrative environments they will soon enter.

LMS as Part of CIA: What It Means for Students

With LMS contributing **10% to the CIA**, students are encouraged to take weekly assessments seriously. Consistent participation directly boosts overall grades while also strengthening core concepts. This system rewards discipline, regular study habits, and active involvement qualities that are essential in medical education.

A Collective Step Toward Better Learning

The adoption of LMS-based CIA reflects our institution's commitment to innovation and excellence. We're not just keeping up with global standards; we're moving ahead of the curve by ensuring that every student gets a modern, interactive, and meaningful learning experience.

Implementation of LMS

Table of Specification of weekly LMS of 4th Year MBBS

For 4th year:

Sr. #.	*Nomenclature of Exam*			*Time*	*Type of Assessment*	*No of MCQs*
1.	*During module (Weekly)*	*LMS Test*	*Every Tuesday evening*	*8:00 to 10:00 pm*	*Summative*	*100*

Table 2: Distribution of Questions According to Level of Cognition:

Sr. #	*Level of Cognition*	*%age Distribution of Questions*	*Type of Integration*
1.	*C1(Recall)*	*20%*	*Horizontal*
2.	*C2(Interpretation)*	*60%*	*Core Concept & Vertical*
3.	*C3(Problem Solving)*	*20%*	*Vertical(Purely Clinical Concepts)*

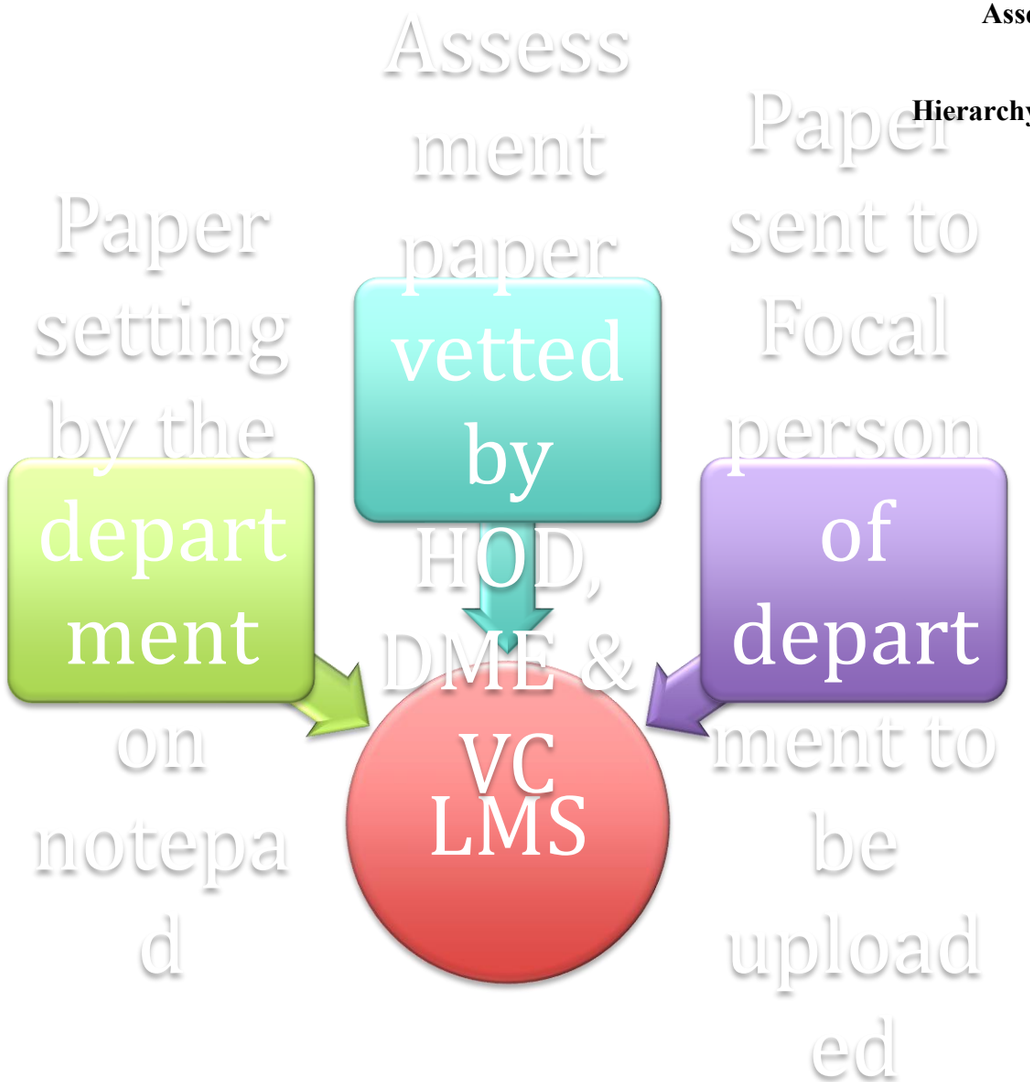
Table 3: Implementation of Calgary Model of Categorization of Questions for LMS assessments:

		Calgary Model

		Must Know (A)	*Should know (B)*	*Nice to know (C) (C)*
1.	*Summative*	*50%*		*50%*
2.	*Summative*	*100%*		----------

Assessment Papers

Hierarchy of conducting LMS



Assessment Format: Most assessments are out of 90 marks, with an adjacent column calculating the percentage (=Score/90).

General Observation: The majority of students are performing well. The distribution of scores is skewed towards the higher end, suggesting the cohort is generally diligent and/or the assessments are well within their grasp

2. Analysis of Performance by Subject/Module

The assessments are grouped into several modules. The average performance can be inferred by looking at the percentage columns.

Top Performing Modules:

1. CVS (Cardiovascular System): Consistently high scores. A large number of students scored above 90% in CVS-3 and CVS-4. This appears to be the strongest subject for the cohort.

2. Microbes (Microbiology): Very strong performance across all 6 weeks, with a high frequency of scores in the 90-100% range.

3. GIT (Gastrointestinal Tract): Generally high performance, especially in GIT weeks 2, 3, and 4.

Moderate Performing Modules:

a) FM-II & FM-III (Forensic Medicine): Shows a wider spread of scores. While many students scored highly, there are also several instances of very low scores and zeros, indicating variability in preparation or attendance for these specific tests.

b) Heam (Haematology): Performance is good, but slightly more varied than in CVS or Microbes.

3. Analysis of Individual Student Performance

Students can be broadly categorized into three groups:

Consistently High Achievers:
These students maintain a high percentage (typically >85%) across almost all assessments with very few, if any, zeros.

The Inconsistent Performers (Largest Group):
These students have a mix of high scores but also have several low scores, zeros, or missing assignments. This is the most common pattern and suggests issues with:

Selective Preparation: Excelling in some subjects but not others.

Inconsistent Attendance: The numerous "0" scores are more likely due to absence than a score of zero, as they are often paired with high scores in other tests.

Students Needing Academic Support:
These students have a high frequency of low scores (e.g., below 50%) and zeros across multiple modules.

4. Critical Observations and Potential Issues

Significant Non-Participation ("0" Scores):

The dataset is filled with "0" scores. Given the context and the fact that these zeros are often adjacent to very high scores (e.g., 90/90), it is highly probable that a "0" represents an absence or a non-attempt rather than a score of zero. This is a major factor affecting the cumulative performance of many students.

Data Inconsistencies and Errors:

Formula Display: Many percentage cells display the formula itself (e.g., =D6/90) instead of the calculated value. This makes automated analysis difficult and suggests the file was not saved properly after calculation or was exported incorrectly.

Possible Grading Errors: Some scores seem anomalous.

Scores >90: While most tests are out of 90, a few scores (e.g., 115, 116) appear in later columns (e.g., CVS-3). This suggests either those specific tests had a different total mark (e.g., 120) or there is a data entry error.

Incomplete Records:

Many cells are entirely blank (e.g., in rows for Eman Safdar - Roll #66). It is unclear if this means the student was not enrolled for that test, the score is missing, or it was another absence.

Conclusion

The 3rd Year MBBS (Evening) cohort demonstrates a strong grasp of the curriculum, particularly in CVS, Microbes, and GIT. The main challenge is not a lack of capability but rather inconsistency in assessment participation and performance. Addressing the issues of absences and providing targeted support to a small group of struggling students could significantly improve the overall academic outcomes of the batch. The reliability of these insights is contingent upon first cleaning and verifying the underlying data.

Identification of At-Risk Students

Students can be categorized based on their performance across both blocks:

Consistently High Performers: A large group of students scoring above 85% in both blocks

Significant Decliners: Students whose performance dropped substantially (e.g., by more than 15 percentage points).

Consistently Low/At-Risk: Students who passed but scored in the 70-75% range in both blocks, or who failed one block. These students may need support to prevent future failure.

Absentees: A group of ~10 students who scored zero in one or both blocks. This requires administrative follow-up to distinguish between absence, withdrawal, and data entry issues.

Recommendations

Academic & Administrative Actions:

Intervene with At-Risk Students:

Priority 1: Contact the 8 students who failed Block VIII to offer remedial support.

Priority 2: Reach out to the "Significant Decliners" group to understand the reasons for their performance drop (e.g., personal issues, topic difficulty) and provide guidance.

Follow-up on Absentees: Determine the status of students with zero scores. Were they absent, have they withdrawn, or is this a data entry error?

WEEK	TOPICS OF LGIS & SGD	TOPICS OF SDL	LEARNING OBJETIVES OF SDL	LEARNING RESOURCES	MODE OF ASSESSMENT

Week 1	- Introduction to nephrology & kidney anatomy - Overview of acute kidney injury (AKI) and chronic kidney disease (CKD) - Etiology and pathophysiology of kidney diseases - Clinical features, diagnosis, and investigations - Principles of management: pharmacological and non-pharmacological	KDIGO criteria for AKI & CKD - Fluid, electrolyte, and acid-base balance - Interpretation of renal function tests (creatinine, eGFR, BUN) - Role of diet, lifestyle, and medications in CKD management	By the end of this theme, students should be able to: • Define AKI and CKD and classify stages • Identify clinical features and complications • Explain pathophysiology of common kidney disorders • Interpret renal function tests • Outline management strategies including pharmacological therapy, dialysis, and lifestyle interventions • Recognize impact on overall health	Harrison's Principles of Internal Medicine (Nephrology chapters) Kaplan & Sadock Lecture notes / LMS	LMS Based MCQs (10 questions)

Week 2	Glomerular diseases: nephrotic vs nephritic syndrome - Etiology, pathophysiology, and clinical features - Diagnostic evaluation: urinalysis, renal biopsy - Management principles (immunosuppressive therapy, supportive care) - Tubulointerstitial diseases and polycystic kidney disease	- Approach to proteinuria and hematuria - Screening for diabetic nephropathy - Principles of immunosuppressive therapy in nephrology - Monitoring for disease progression and complications	By the end of this theme, students should be able to: • Define nephrotic and nephritic syndromes • Recognize clinical and laboratory features • Explain pathophysiology and complications • Differentiate between primary and secondary causes • Outline management including medications and supportive care • Understand monitoring and prevention strategies	Kaplan & Sadock Harrison's Principles of Internal Medicine (Nephrology chapters) Shorter Oxford Textbook Of Medicine – Renal chapters LMS Lecture slides	LMS Based MCQs (10 questions)

FOURTH YEAR MBBS

Clinical Clerkship Programme

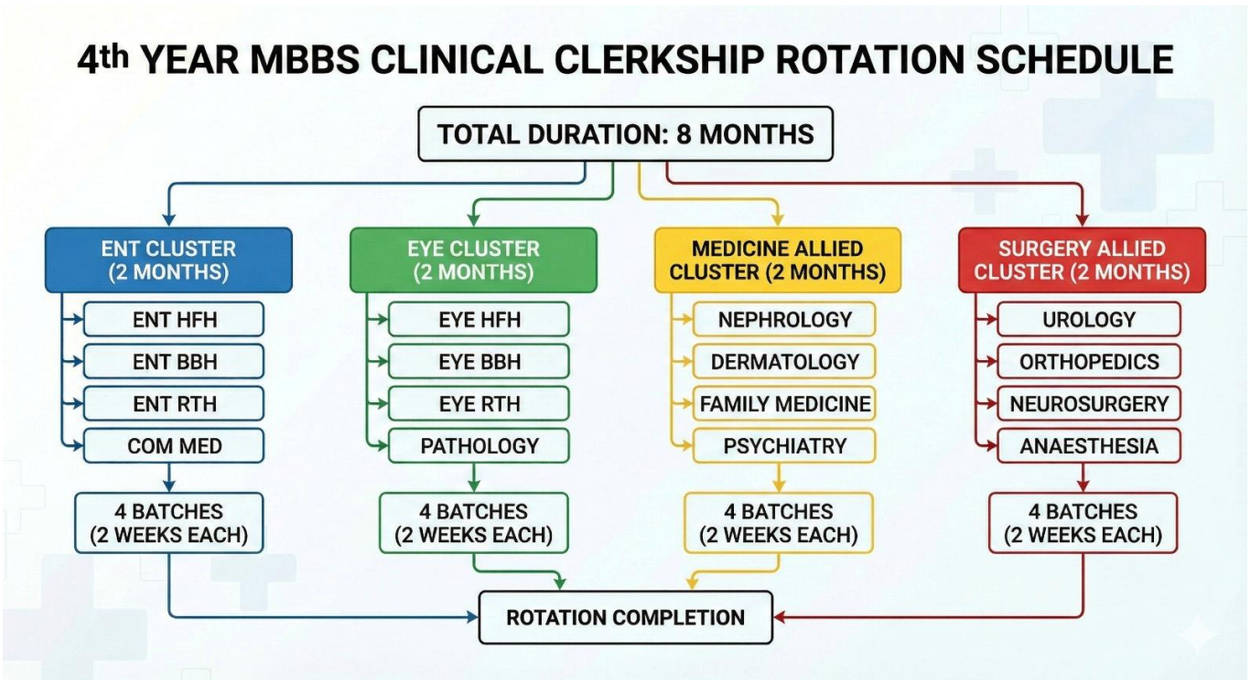
Cluster-Based Rotation Framework with Assessment Guidelines

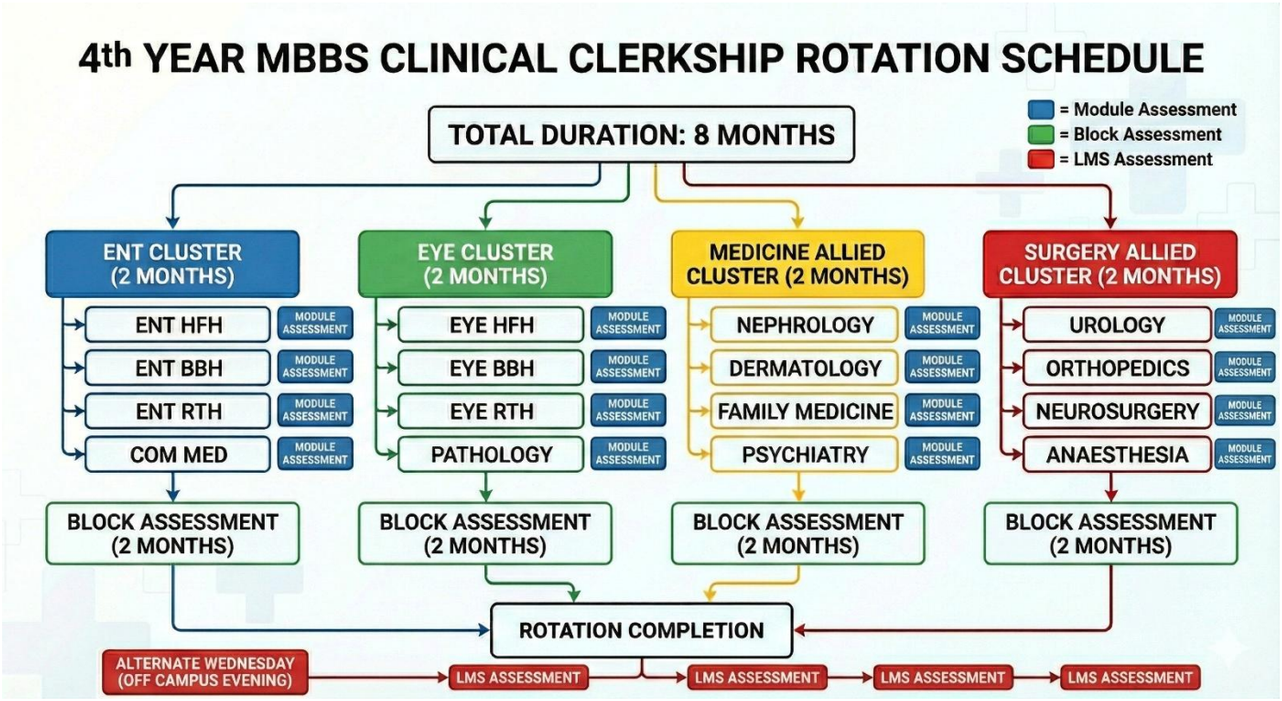
Four Clinical Clusters | Four Batch Rotations | 2-Week Modules

End Module Assessments + End Block Assessments

Department of Medical Education

Faculty of Medicine


4th YEAR MBBS CLINICAL CLERKSHIP ROTATION SCHEDULE
TOTAL DURATION: 8 MONTHS
ENT CLUSTER (2 MONTHS)
ENT HFH
ENT BBH
ENT RTH
COM MED
4 BATCHES (2 WEEKS EACH)
EYE CLUSTER (2 MONTHS)
EYE HFH
EYE BBH
EYE RTH
PATHOLOGY
4 BATCHES (2 WEEKS EACH)
MEDICINE ALLIED CLUSTER (2 MONTHS)
NEPHROLOGY
DERMATOLOGY
FAMILY MEDICINE
PSYCHIATRY
4 BATCHES (2 WEEKS EACH)
SURGERY ALLIED CLUSTER (2 MONTHS)
UROLOGY
ORTHOPEDICS
NEUROSURGERY
ANAESTHESIA
4 BATCHES (2 WEEKS EACH)
ROTATION COMPLETION


4th YEAR MBBS CLINICAL CLERKSHIP ROTATION SCHEDULE
TOTAL DURATION: 8 MONTHS
= Module Assessment
= Block Assessment
= LMS Assessment
ENT CLUSTER (2 MONTHS)
EYE CLUSTER (2 MONTHS)
MEDICINE ALLIED CLUSTER (2 MONTHS)
SURGERY ALLIED CLUSTER (2 MONTHS)
ENT HFH
ENT BBH
ENT RTH
COM MED
EYE HFH
EYE BBH
EYE RTH
PATHOLOGY
NEPHROLOGY
DERMATOLOGY
FAMILY MEDICINE
PSYCHIATRY
UROLOGY
ORTHOPEDICS
NEUROSURGERY
ANAESTHESIA
MODULE ASSESSMENT
BLOCK ASSESSMENT (2 MONTHS)
ROTATION COMPLETION
ALTERNATE WEDNESDAY (OFF CAMPUS EVENING)
LMS ASSESSMENT

1. Programme Overview

The Fourth Year MBBS Clinical Clerkship Programme is structured around a cluster-based rotation framework designed to provide comprehensive, systematic, and equitable clinical exposure across all major medical and surgical specialties. Students are organized into four batches that rotate concurrently across four defined clinical clusters, ensuring that all batches complete exposure to all clusters over the academic year.

Each cluster comprises four affiliated departments or hospital units, with each rotation lasting two (2) weeks. Upon completion of all four rotations within a cluster, a full block of two (2) months is completed. This cycle then repeats, allowing for structured progression through all clusters.

1.1 Programme Structure at a Glance

Parameter	Details
Academic Level	Fourth Year MBBS (Final Clinical Year — Phase I)
Total Clusters	4 Clusters running concurrently
Total Batches	4 Batches rotating simultaneously across clusters
Rotation Duration	2 Weeks per department/module
Block Duration	2 Months per cluster (4 × 2-week rotations)
Departments per Cluster	4 Departments / Venues
End Module Assessment	After every 2-week rotation

End Block Assessment	After every 2-month cluster block
Cycle	Repeating — all batches complete all clusters

2. Clinical Clusters and Batch Allocation

The programme is divided into four (4) clinical clusters. Each cluster is assigned one (1) batch at any given time. All four batches rotate concurrently, one per cluster, and the cycle repeats so that every batch completes every cluster.

#	Cluster Name	Batch	Departments / Venues	Duration
1	**ENT Cluster**	Batch A	ENT-HFH | ENT-BBH | ENT-RTH | Com Med	2 months (4 × 2 wks)
2	**EYE & Pathology Cluster**	Batch B	EYE-HFH | EYE-BBH | EYE-RTH | Pathology	2 months (4 × 2 wks)
3	**Medicine Allied Cluster**	Batch C	Dermatology | Nephrology | Family Medicine | Psychiatry	2 months (4 × 2 wks)
4	**Surgery Allied**	Batch D	Orthopedics | Anaesthesia |	2 months (4 × 2

	Cluster		Neurosurgery | Urology	wks)

Note: Batches A, B, C, and D rotate through all four clusters sequentially. The cluster assigned to each batch changes at the start of every new 2-month block. After four complete cycles, all batches will have completed all four clusters.

3. Cluster 1: ENT Cluster

Batch Assigned: Batch A | Total Duration: 2 Months | Rotations: 4 × 2 Weeks

The ENT Cluster provides students with structured clinical exposure across three major teaching hospitals and the Community Medicine department. The inclusion of Community Medicine within the ENT cluster enables students to contextualise ENT disorders within a public health and primary care framework, addressing preventive, rehabilitative, and community-based aspects of ear, nose, and throat diseases.

3.1 Rotation Schedule — ENT Cluster

Week	Period	Rotation / Department	Hospital / Venue
Wk 1–2	Module 1 (Weeks 1–2)	ENT Department	Holy Family Hospital (HFH)
Wk 3–4	Module 2 (Weeks 3–4)	ENT Department	Benazir Bhutto Hospital (BBH)
Wk 5–6	Module 3 (Weeks 5–	ENT Department	Rawalpindi Teaching Hospital

	6)		(RTH)
Wk 7–8	Module 4 (Weeks 7–8)	Community Medicine	Community Medicine Department / Field Sites

3.2 Clinical Competencies — ENT Cluster

Students rotating through the ENT Cluster are expected to develop competencies in history-taking, clinical examination, and basic procedural skills pertaining to diseases of the ear, nose, throat, head, and neck. The Community Medicine module contextualises these conditions within epidemiological, preventive, and health systems frameworks.

4. Cluster 2: EYE & Pathology Cluster

Batch Assigned: Batch B | Total Duration: 2 Months | Rotations: 4 × 2 Weeks

The EYE and Pathology Cluster provides students with clinical exposure to ophthalmology across three major teaching hospitals, supplemented by a dedicated Pathology rotation. The Pathology module reinforces laboratory-based diagnostic reasoning and integrates histopathological, microbiological, and haematological perspectives that underpin clinical decision-making in ophthalmology and beyond.

4.1 Rotation Schedule — EYE & Pathology Cluster

Week	Period	Rotation / Department	Hospital / Venue
Wk 1–2	Module 1 (Weeks 1–2)	Ophthalmology (EYE) Department	Holy Family Hospital (HFH)
Wk 3–4	Module 2 (Weeks 3–	Ophthalmology (EYE) Department	Benazir Bhutto Hospital (BBH)

	4)		
Wk 5–6	Module 3 (Weeks 5–6)	Ophthalmology (EYE) Department	Rawalpindi Teaching Hospital (RTH)
Wk 7–8	Module 4 (Weeks 7–8)	Pathology Department	Pathology Department / Laboratory

4.2 Clinical Competencies — EYE & Pathology Cluster

Students are expected to master the ophthalmic examination including visual acuity, slit-lamp biomicroscopy, fundoscopy, and tonometry. The Pathology module reinforces competencies in interpretation of histopathology slides, haematological indices, urinalysis, and laboratory quality control principles relevant to clinical practice.

5. Cluster 3: Medicine Allied Cluster

Batch Assigned: Batch C | Total Duration: 2 Months | Rotations: 4 × 2 Weeks

The Medicine Allied Cluster integrates four allied medical specialties that are essential for comprehensive clinical practice: Dermatology, Nephrology, Family Medicine, and Psychiatry. Each sub-batch within Batch C rotates through all four specialties over the 2-month block, developing clinical competencies in both outpatient and inpatient settings across diverse patient populations.

5.1 Rotation Schedule — Medicine Allied Cluster

Week	Period	Rotation / Department	Hospital / Venue
Wk 1–2	Module 1 (Weeks 1–2)	Dermatology & Venereology	Teaching Hospital / Dermatology OPD
Wk	Module 2	Nephrology	Teaching Hospital

3–4	(Weeks 3–4)		/ Nephrology Unit
Wk 5–6	Module 3 (Weeks 5–6)	Family Medicine	Family Medicine Department / Community Clinic
Wk 7–8	Module 4 (Weeks 7–8)	Psychiatry	Psychiatry Department / Mental Health Unit

5.2 Clinical Competencies — Medicine Allied Cluster

Dermatology: Systematic skin examination, morphological description of lesions, management of common dermatoses, and dermoscopy basics. Nephrology: Fluid and electrolyte management, interpretation of renal function tests, renal replacement therapy principles, and management of glomerular and tubular diseases. Family Medicine: Patient-centred consultation skills, chronic disease management, preventive care, and the family as a unit of care. Psychiatry: Mental state examination (MSE), diagnosis of common psychiatric disorders, biopsychosocial formulation, and safe prescribing of psychotropic agents.

6. Cluster 4: Surgery Allied Cluster

Batch Assigned: Batch D | Total Duration: 2 Months | Rotations: 4 × 2 Weeks

The Surgery Allied Cluster exposes students to four critical surgical subspecialties: Orthopedics, Anaesthesia, Neurosurgery, and Urology. These specialties collectively cover the full perioperative pathway, trauma and musculoskeletal medicine, neurological surgery, and urological disorders. Students participate in ward rounds, operating theatre sessions, outpatient clinics, and emergency assessments under appropriate supervision.

6.1 Rotation Schedule — Surgery Allied Cluster

Week	Period	Rotation / Department	Hospital / Venue

Wk 1–2	Module 1 (Weeks 1–2)	Orthopedics & Trauma Surgery	Teaching Hospital / Ortho Ward & OT
Wk 3–4	Module 2 (Weeks 3–4)	Anaesthesia & Perioperative Medicine	Teaching Hospital / Anaesthesia Department & OT
Wk 5–6	Module 3 (Weeks 5–6)	Neurosurgery	Teaching Hospital / Neurosurgery Unit
Wk 7–8	Module 4 (Weeks 7–8)	Urology	Teaching Hospital / Urology Ward & OT

6.2 Clinical Competencies — Surgery Allied Cluster

Orthopedics: Musculoskeletal examination, fracture management, splinting, and interpretation of orthopaedic imaging. Anaesthesia: Pre-operative assessment, airway management principles, monitoring parameters, and post-operative pain management. Neurosurgery: Neurological examination, Glasgow Coma Scale, management of head injuries and raised intracranial pressure, and interpretation of neuroimaging. Urology: Urological history and examination, catheterisation, urinalysis interpretation, and management of common urological emergencies.

7. Assessment Framework

The assessment system is designed on a two-tier model: End Module Assessments (EMA) following every 2-week rotation, and End Block Assessments (EBA) following every 2-month cluster block. Both tiers are mandatory, formative feedback is provided after each assessment, and results contribute to the overall summative academic record.

7.1 Assessment Cycle Summary

Cycle	Duration	Assessment	Format	Total

		Type		Marks
Every 2 Weeks	After each department rotation	**End Module Assessment**	25 MCQs + 5 OSCE	**50 Marks**
Every 2 Months	After completion of all 4 rotations in cluster	**End Block Assessment**	25 MCQs + 5 AV OSPE + 5 OSCE	**100 Marks**

7.2 End Module Assessment (EMA)
Conducted After Every 2-Week Rotation | Total: 50 Marks

The End Module Assessment is administered at the conclusion of each 2-week departmental rotation. It evaluates the module-specific knowledge, clinical reasoning, and practical skills acquired during that rotation. The EMA comprises two components: a written component using LMS-based Multiple Choice Questions and a clinical skills component via OSCE stations.

Table of Specification (TOS) — End Module Assessment

	Format	No. of	Marks per

Assessment Component		Items	Item / Total
Written Component	LMS MCQs	25	1 mark each / 25 marks
Clinical Skills Component	OSCE Stations	5 Stations	5 marks each / 25 marks
TOTAL		**30 Items**	**50 Marks**

EMA Component	Specifications
LMS MCQs	25 single-best-answer MCQs delivered via the Learning Management System (LMS). Questions are mapped to the module's clinical competencies. Each MCQ carries 1 mark. No negative marking. Time allowed: 30 minutes.
OSCE Stations	5 stations, each carrying 5 marks (Total: 25 marks). Stations are competency-based and may include history-taking, clinical examination, procedural skills, data interpretation, and clinical communication. Duration: 5–7 minutes per station.
Pass Mark	50% overall (25/50 marks) with no individual component failure threshold at module level. However, attendance at both components is mandatory.

7.3 End Block Assessment (EBA)

Conducted After Every 2-Month Block | Total: 100 Marks

The End Block Assessment is a comprehensive summative examination conducted at the end of each 2-month cluster block. It integrates knowledge, diagnostic reasoning, and clinical skills across all four departments within the cluster. The EBA is a high-stakes assessment and carries greater weighting in the academic record. It comprises three components: LMS MCQs, Audio-Visual OSPE (AV OSPE), and OSCE stations.

Table of Specification (TOS) — End Block Assessment

Assessment Component	Format	No. of Items	Marks per Item / Total
Written Component	LMS MCQs	25	1 mark each / 25 marks
Practical / Lab Component	AV OSPE Stations	5 Stations	5 marks each / 25 marks
Clinical Skills Component	OSCE Stations	5 Stations	10 marks each / 50 marks
TOTAL		**35 Items**	**100 Marks**

EBA Component	Specifications
LMS MCQs	25 single-best-answer MCQs covering all four departments of the cluster block. Delivered via the Learning Management System. Each MCQ carries 1 mark. No negative marking. Time allowed: 30 minutes.
AV OSPE Stations	5 Audio-Visual OSPE stations, each carrying 5 marks (Total: 25 marks). Each station presents a clinical scenario using audio, video, imaging, or laboratory material. Students

	respond to structured written questions. Duration: 5 minutes per station. Skills tested include radiograph/ECG/lab report interpretation, image-based diagnosis, procedural videos, and audio-clinical vignettes.
OSCE Stations	5 OSCE stations, each carrying 10 marks (Total: 50 marks). High-fidelity stations assessing complex clinical competencies including integrated history and examination, clinical decision-making, procedural skills, counselling, and interprofessional communication. Duration: 8–10 minutes per station. Standardised patients, mannequins, and task trainers may be used.
Pass Mark	50% overall (50/100 marks). Failure in any individual component (MCQ, AV OSPE, or OSCE) below 40% requires remediation for that component.

Date Sheet:

For LMS Assessment (Every Alternate Wednesday)

S.No	Date	Day	Assessment Type
1	18-03-2026	Wednesday	LMS Module Assessment
2	08-04-2026	Wednesday	LMS Module Assessment
3	22-04-2026	Wednesday	LMS Module Assessment
4	06-05-2026	Wednesday	LMS Module Assessment
5	20-05-2026	Wednesday	LMS Module Assessment
6	03-06-2026	Wednesday	LMS Module Assessment

7	17-06-2026	Wednesday	LMS Module Assessment

For Clinical Module Assessment: (End of Module Alternate Thursday)

S.No	Date	Day	Assessment Type
1	**19-03-2026**	**Thursday**	**Clinical End Module Assessment**
2	**09-04-2026**	**Thursday**	**Clinical End Module Assessment**
3	**23-04-2026**	**Thursday**	**Clinical End Module Assessment**
4	**07-05-2026**	**Thursday**	**Clinical End Module Assessment**
5	**21-05-2026**	**Thursday**	**Clinical End Module Assessment**
6	**04-06-2026**	**Thursday**	**Clinical End Module Assessment**
7	**18-06-2026**	**Thursday**	**Clinical End Module Assessment**

8. Master Rotation Plan — Repeating Cycle

The following master plan illustrates the repeating cycle of batch-cluster assignments. Each cycle is 2 months in duration, and after four complete cycles, every batch will have completed all four clusters. The cycle then recommences as required.

Block / Cycle	Batch A	Batch B	Batch C	Batch D
Block 1 (Months 1–2)	ENT Cluster	EYE & Path Cluster	Medicine Allied	Surgery Allied
Block 2 (Months 3–4)	EYE & Path Cluster	Medicine Allied	Surgery Allied	ENT Cluster
Block 3 (Months 5–6)	Medicine Allied	Surgery Allied	ENT Cluster	EYE & Path Cluster
Block 4 (Months 7–8)	Surgery Allied	ENT Cluster	EYE & Path Cluster	Medicine Allied

After Block 4, the cycle repeats from Block 1 with the same rotation sequence. This ensures equitable exposure and workload distribution across all batches and departments throughout the academic year.

9. Integrated Assessment Schedule Within Each Block

The following timeline shows how module and block assessments are sequenced within a single 2-month cluster block. This pattern is identical for all four clusters.

Week	Activity	Department	Assessment	Marks
1–2	Module 1 Rotation	Dept. 1 of Cluster	—	—
End Wk 2	**End Module Assessment 1**	**—**	**25 MCQs + 5 OSCE**	**50 marks**
3–4	Module 2 Rotation	Dept. 2 of Cluster	—	—
End Wk 4	**End Module Assessment 2**	**—**	**25 MCQs + 5 OSCE**	**50 marks**
5–6	Module 3 Rotation	Dept. 3 of Cluster	—	—
End Wk 6	**End Module Assessment 3**	**—**	**25 MCQs + 5 OSCE**	**50 marks**
7–8	Module 4 Rotation	Dept. 4 of Cluster	—	—
End	**End**	**—**	**25 MCQs**	**50**

Wk 8	**Module Assessment 4**		**+ 5 OSCE**	**marks**
End Block	**End Block Assessment**	**All 4 Depts.**	**25 MCQ + 5 AV OSPE + 5 OSCE**	**100 marks**

10. Administrative Provisions and Policies

10.1 Attendance Requirements

A minimum attendance of 80% is mandatory in each 2-week rotation. Students failing to meet the attendance threshold will be ineligible to sit the End Module Assessment for that rotation..

10.2 Logbook and Portfolio Requirements

Students are required to maintain a clinical logbook documenting all clinical encounters, procedural competencies attempted or completed, and reflective entries for each rotation. Logbooks must be endorsed by the supervising faculty member at the end of each module. Portfolio submissions, including at minimum two structured reflective entries per cluster block, are required prior to the End Block Assessment.

10.5 Interprofessional Education

Students are encouraged to participate in interprofessional education (IPE) activities during their rotations wherever opportunities arise, including multidisciplinary team meetings, ward rounds, case conferences, and joint clinics. Participation in at least one documented IPE activity per cluster block is expected and should be recorded in the clinical portfolio.

13. Document Approval

This document constitutes the official framework for the Fourth Year MBBS Clinical Clerkship Programme. It has been reviewed by the relevant academic and administrative authorities and is effective from the date of approval.

Programme Director	Dean, Faculty of Medicine	Head, Medical Education
_____	_____	_____
Signature & Date	Signature & Date	Signature & Date