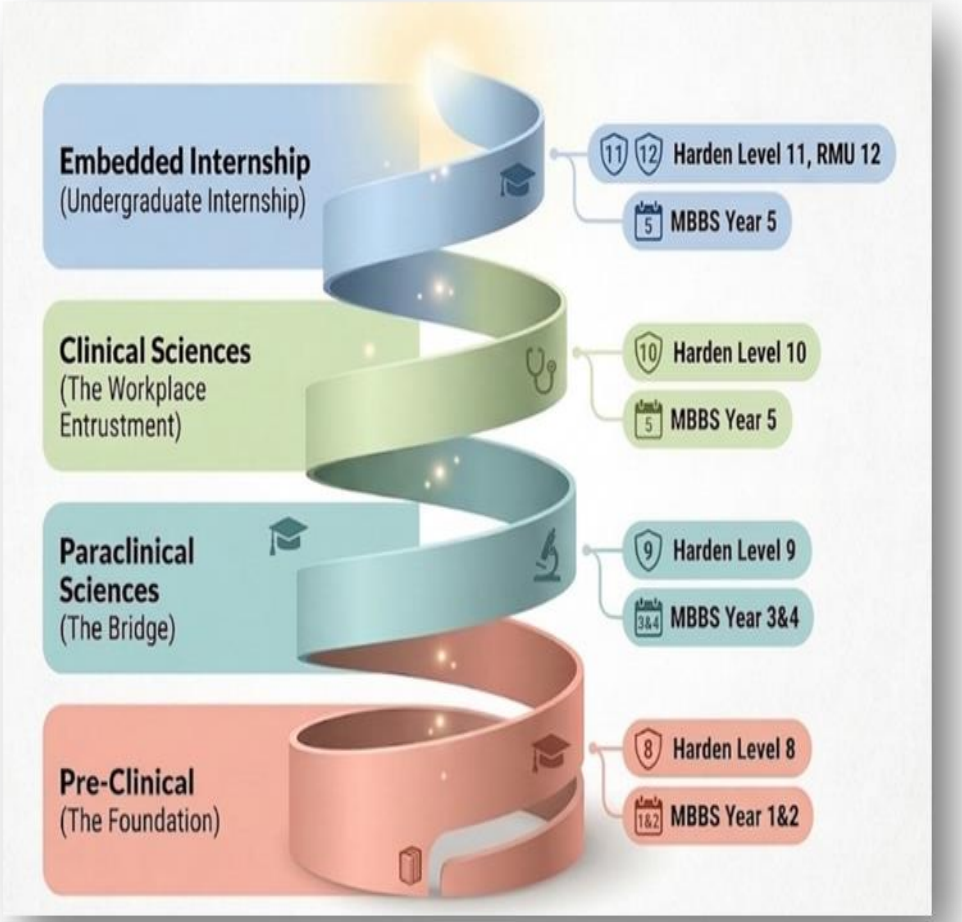
RMU – 12

Integrated Modular MBBS Curriculum 2026

Isolation to Beyond Boundaries



Rawalpindi Medical University

Department of Paediatrics

Integrated Modular Curriculum
Final year MBBS

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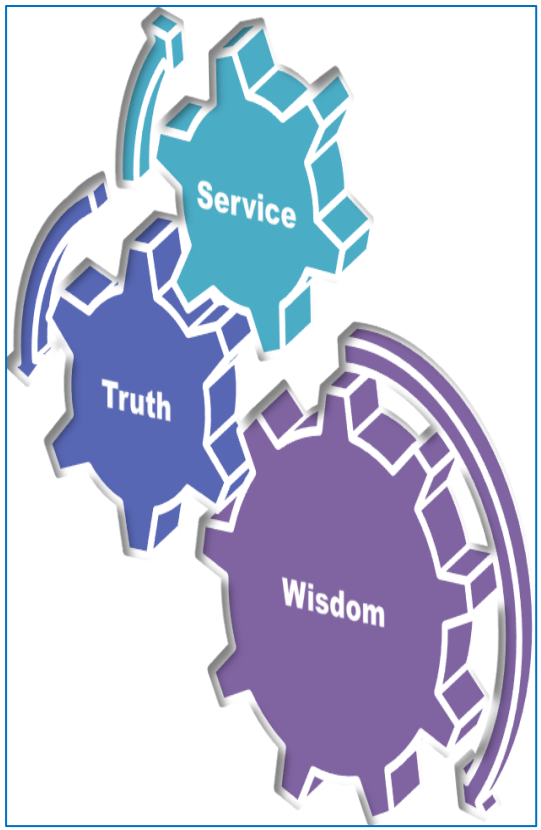
Curriculum Mission and Vision

RMU Motto



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.

Figure 1- RMU 12 Integrated Modular Curriculum

Isolation to beyond boundaries Competency Framework

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.

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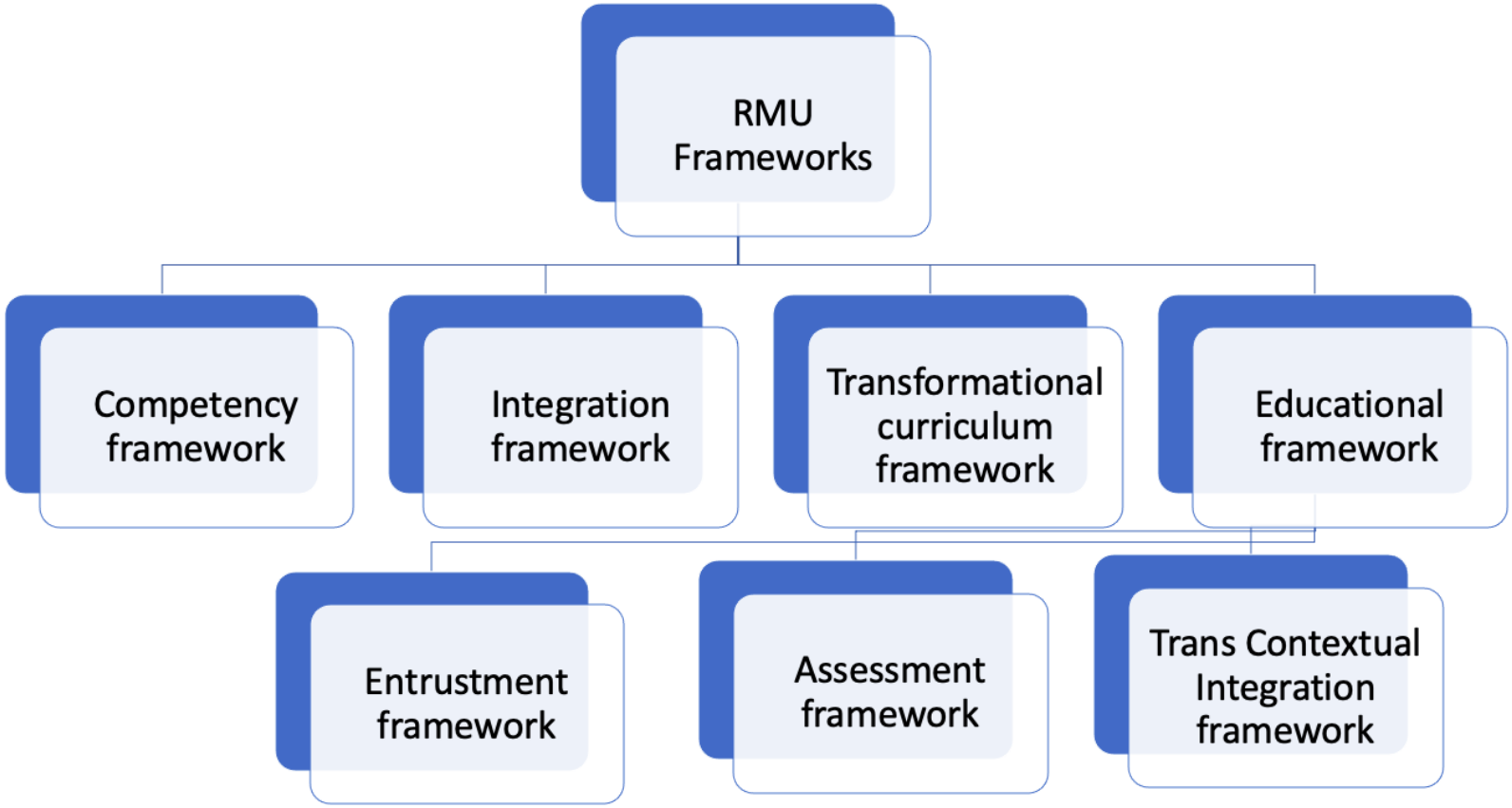
RMU Frameworks
Competency framework
Integration framework
Transformational curriculum framework
Educational framework
Entrustment framework
Assessment framework
Trans Contextual Integration framework

Figure 2 – Structured framework of RMU 12 Integrated Modular Curriculum 2026
Isolation to beyond boundaries

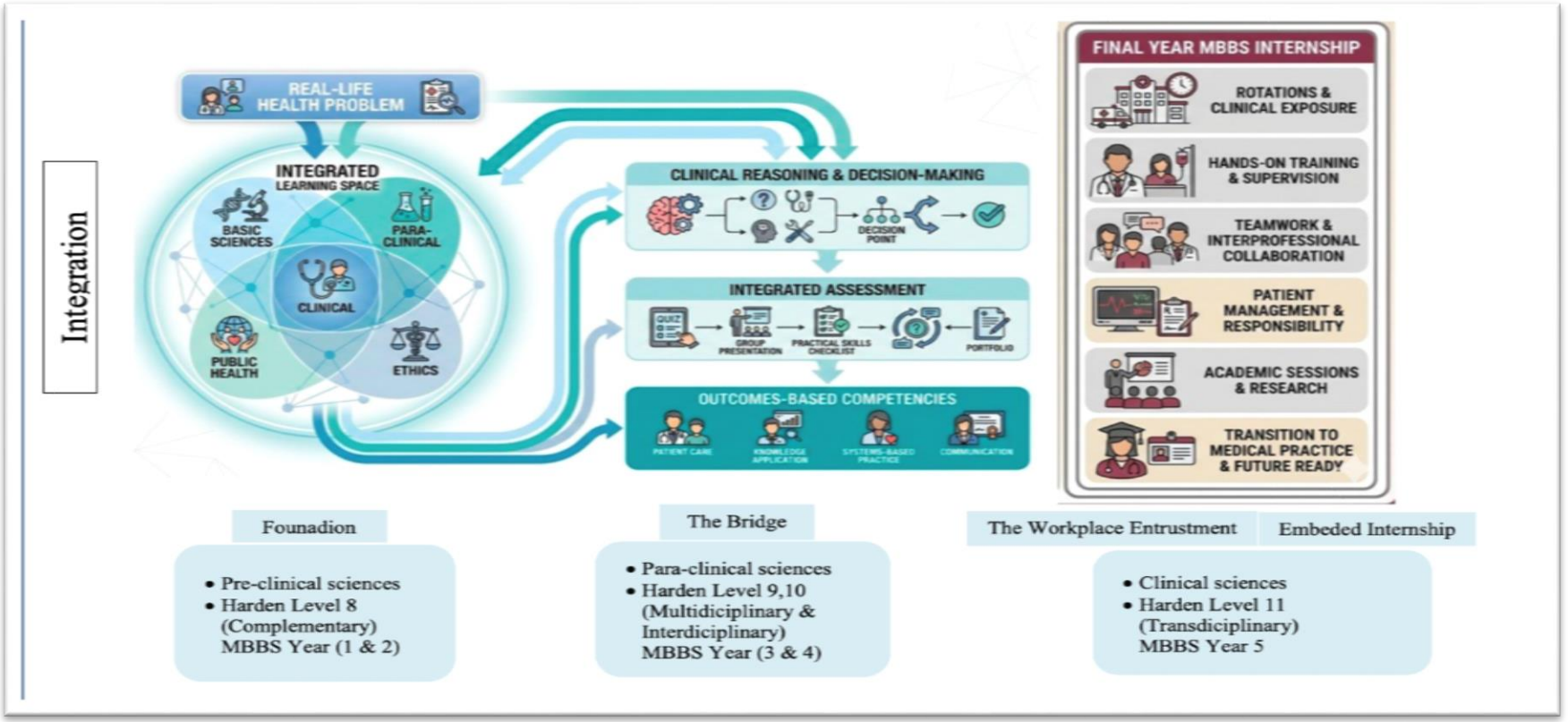

Figure 3 – Transformational Curriculum Framework of RMU 12 Integrated Modular Curriculum 2026
Isolation to Beyond Boundaries

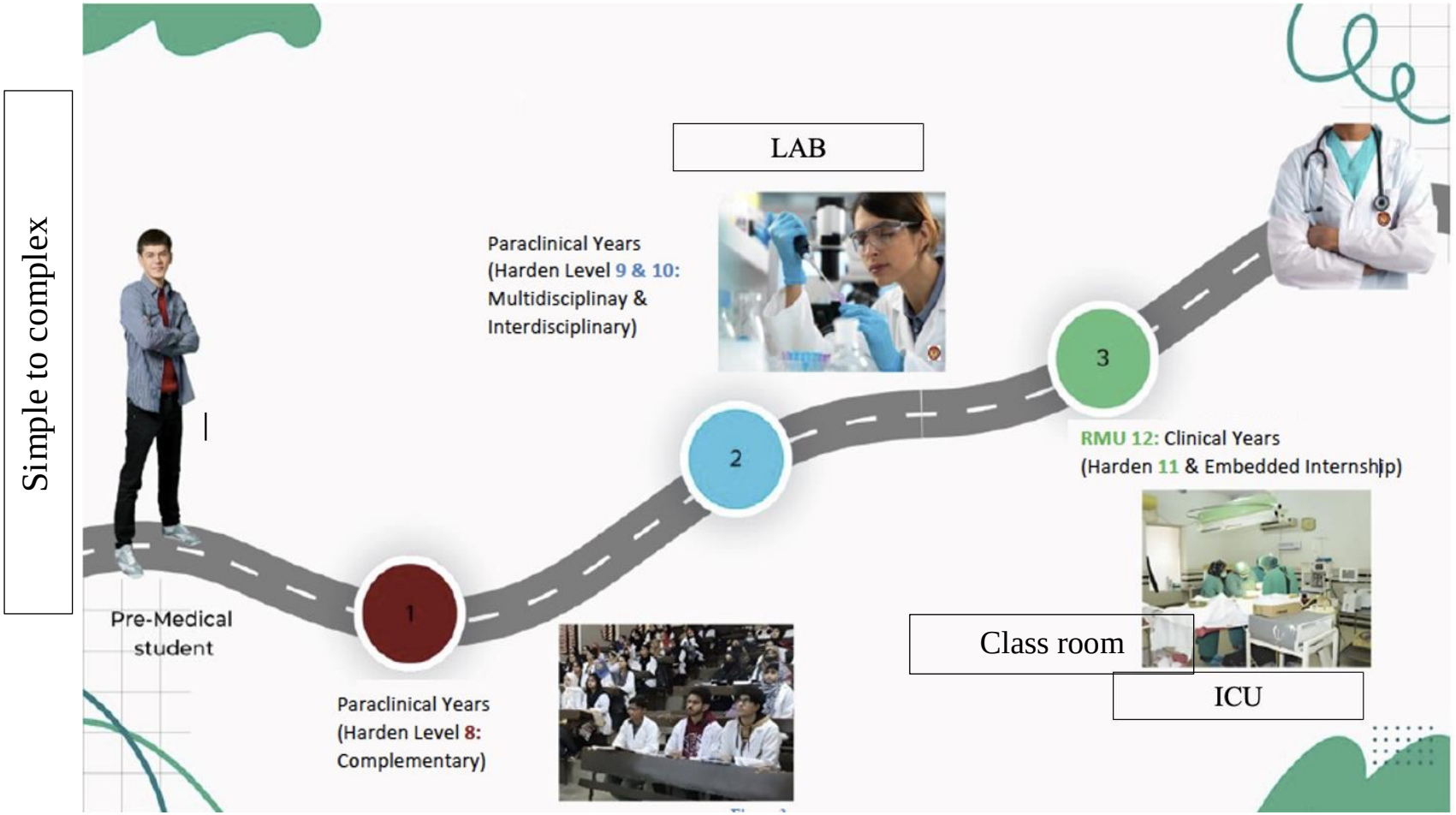

Figure 4 – Educational Framework of RMU 12 Integrated Modular Curriculum 2026
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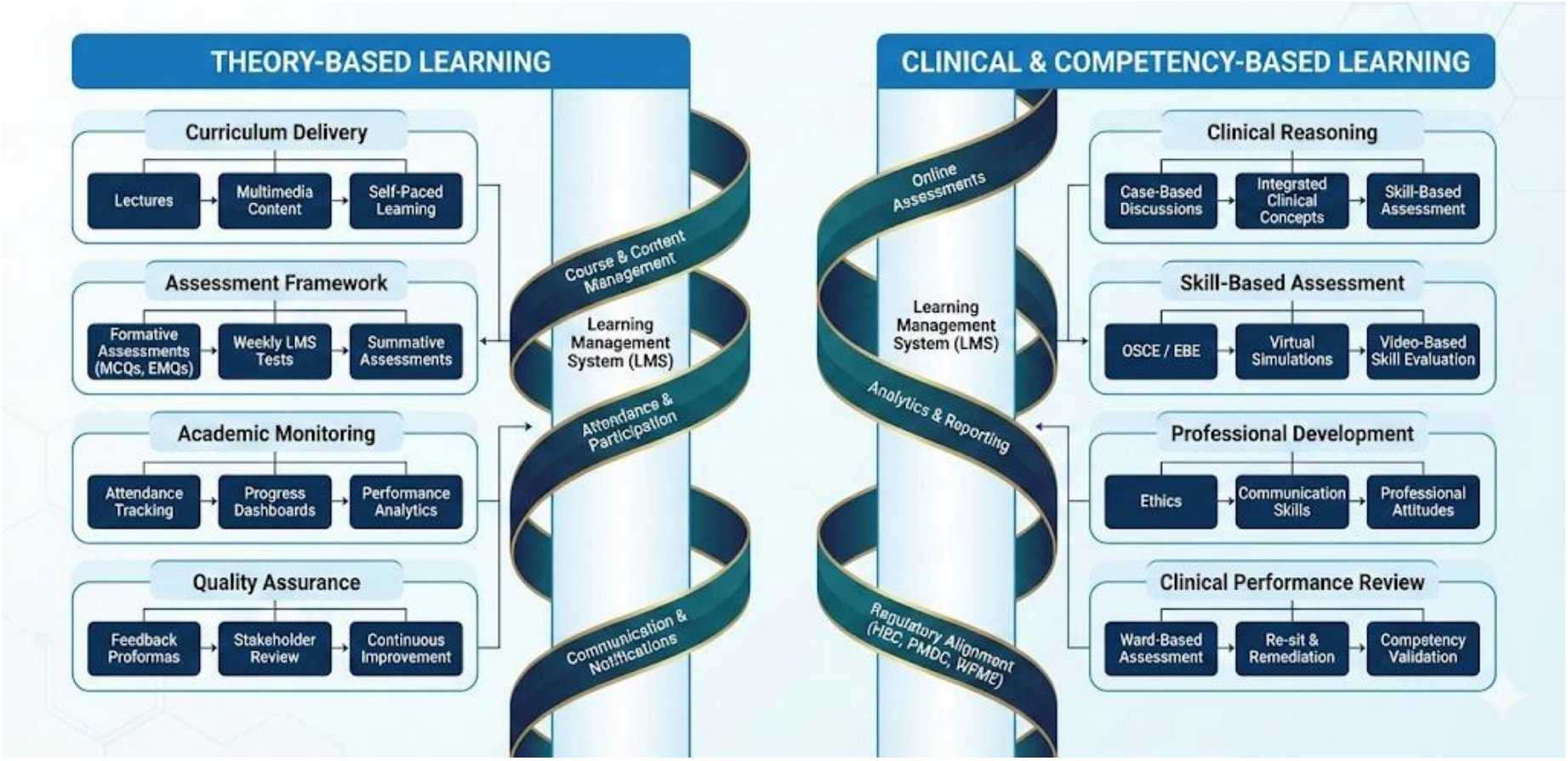
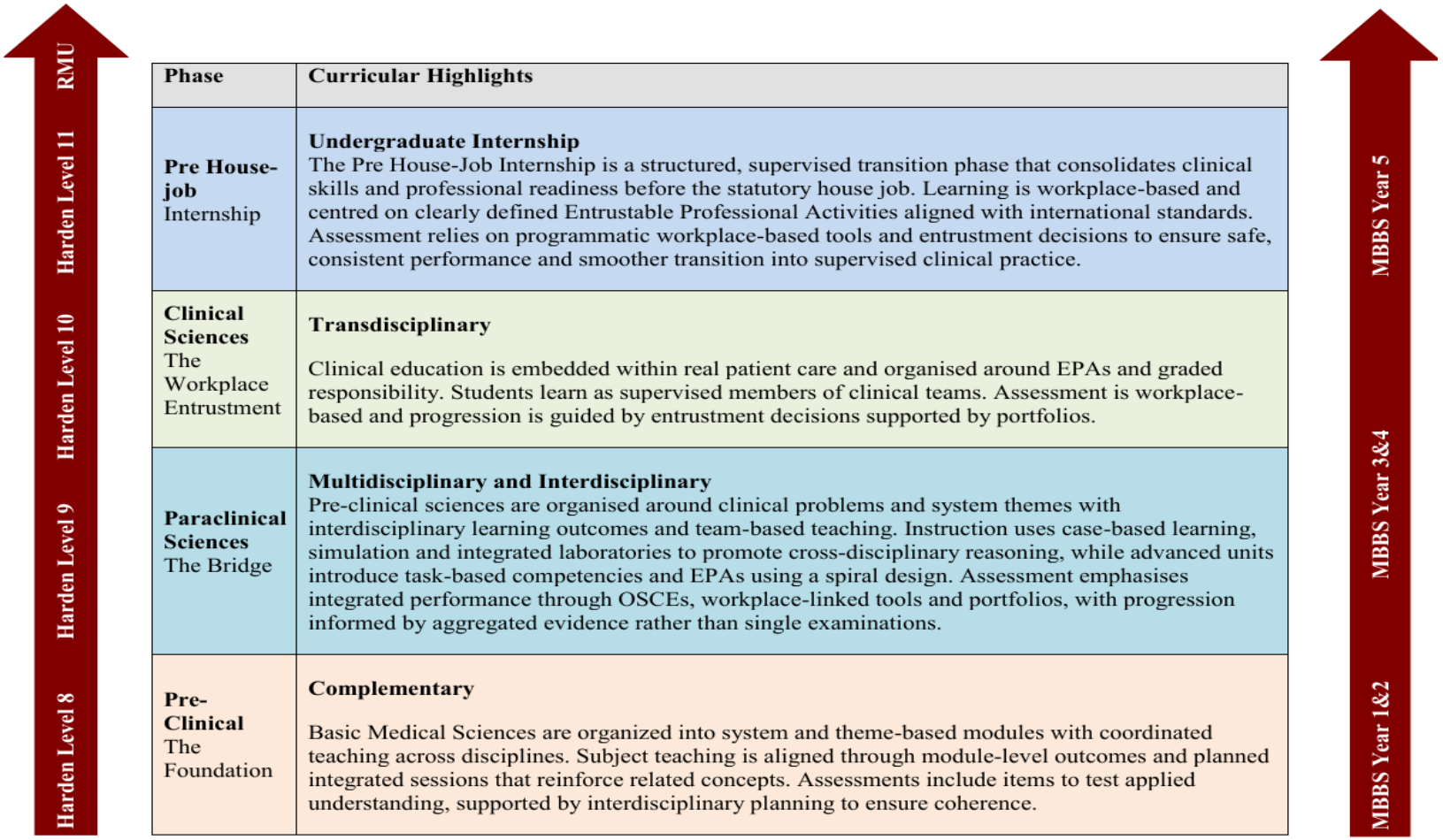


Figure 5 – Entrustment Framework of RMU 12 Integrated Modular Curriculum 2026 Isolation to beyond boundaries



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.

Figure 6 – Assessment framework of RMU 12 Integrated Modular Curriculum 2026 Isolation to beyond boundaries

Assessment

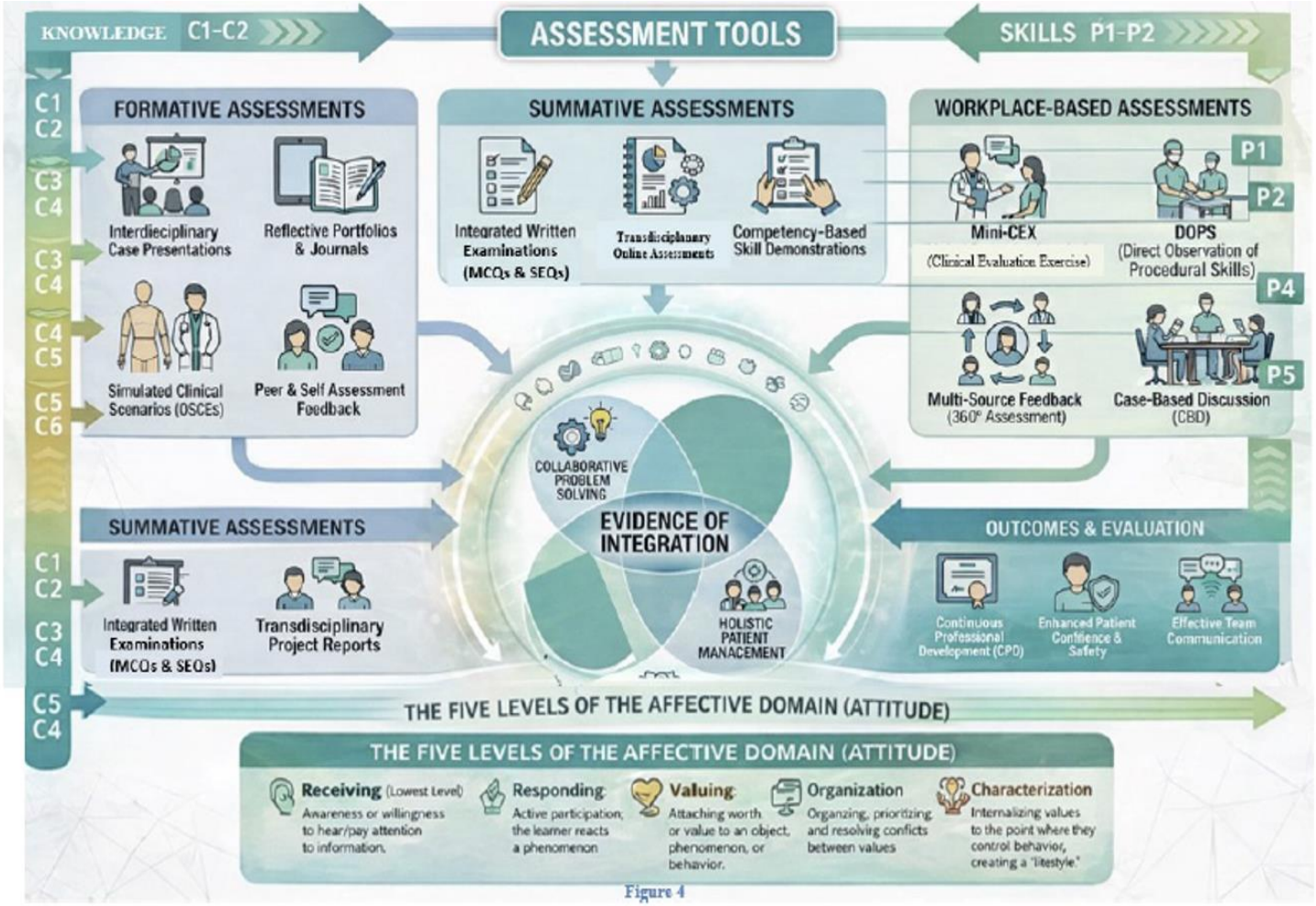
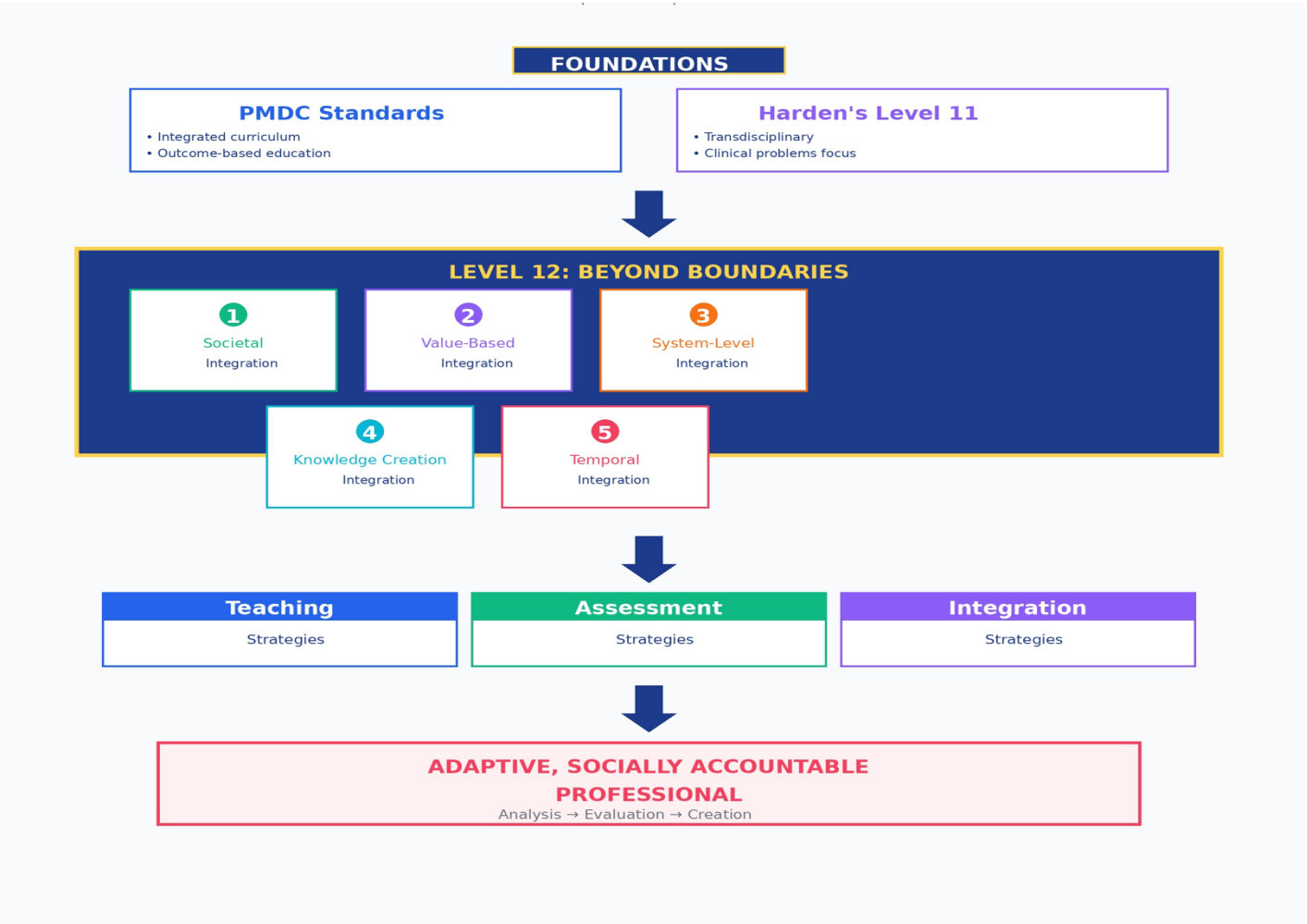


Figure 7 – Competency framework of RMU 12 Integrated Modular Curriculum 2026 Isolation to beyond boundaries



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.

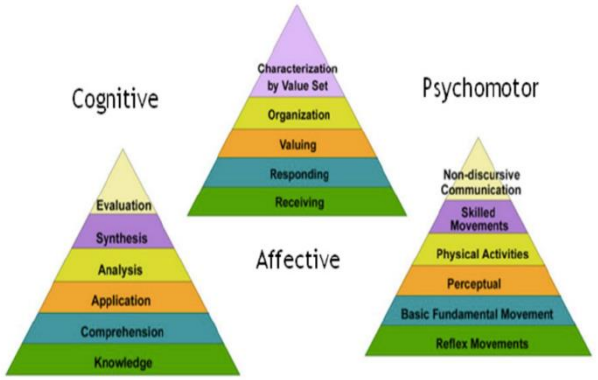


Figure 8 – Blooms Taxonomy

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 curriculum 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.

Figure 9 – Miller's Pyramid of Clinical Competence

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.

RMU 12 Trans Contextual Integration Framework (TCIF)

Introduction

Modern medical education emphasizes integration as a cornerstone for producing competent, reflective, and patient-cantered 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 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 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

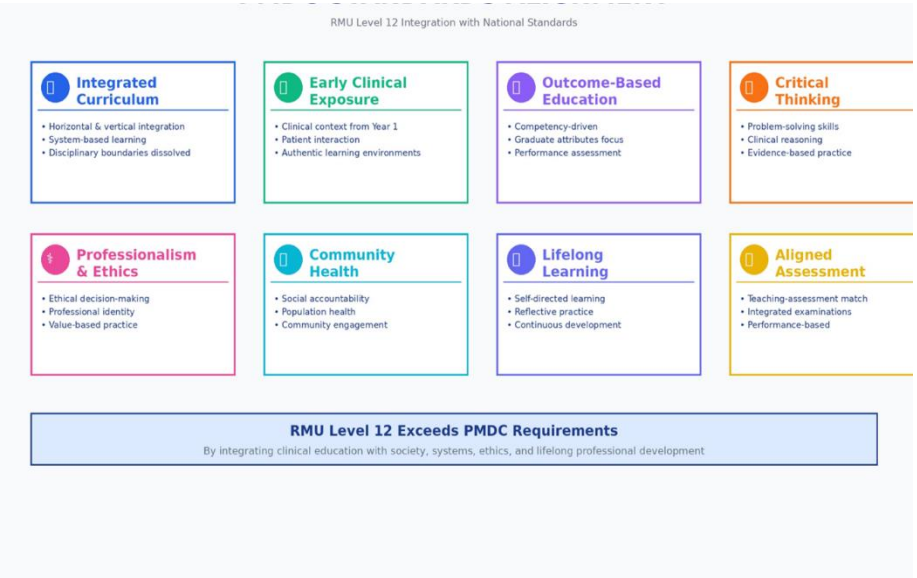
- Transcends Harden's Level 11 through integration with society, systems, ethics, and lifelong learning
- Fully aligned with PMDC undergraduate medical education standards
- Emphasizes higher-order thinking: Analysis, Evaluation, and Creation (Bloom's Taxonomy)
- Produces socially accountable, adaptive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



Harden's Integration Ladder RMU RMU 12 Isolation to Beyond Boundaries

Figure 11 –RMU 12 Isolation to Beyond Boundaries

2. RMU-12 —Beyond Boundaries

2.1 Conceptual Definition

RMU 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

Figure 12 – Five Pillars of RMU 12 Integration

2.3 Five Pillars of Level 12 Integration

A. Societal Integration: Patient-in-Society Problems

Level 11: Patient-centered clinical problems

RMU 12: Patient-in-society problems

RMU Implementation: (Methodology)

- 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 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 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.

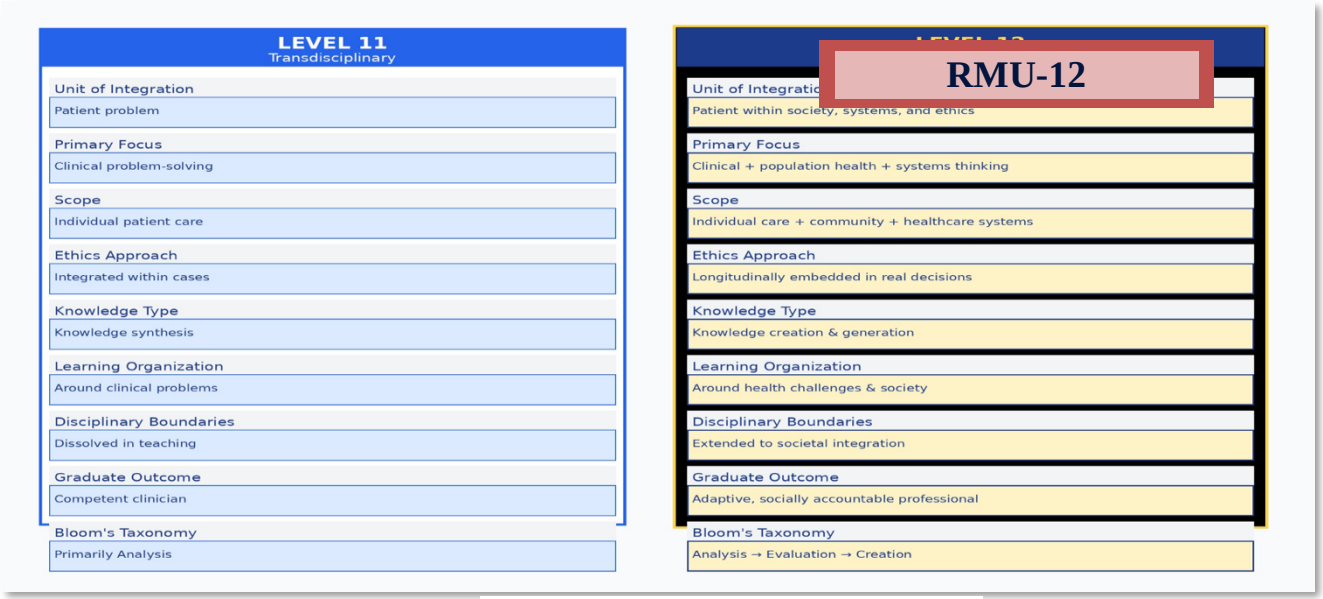


Figure 13 – Level 11 vs RMU 12

D. Knowledge Creation: Beyond Synthesis
Level 11: Knowledge synthesis

RMU 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 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.

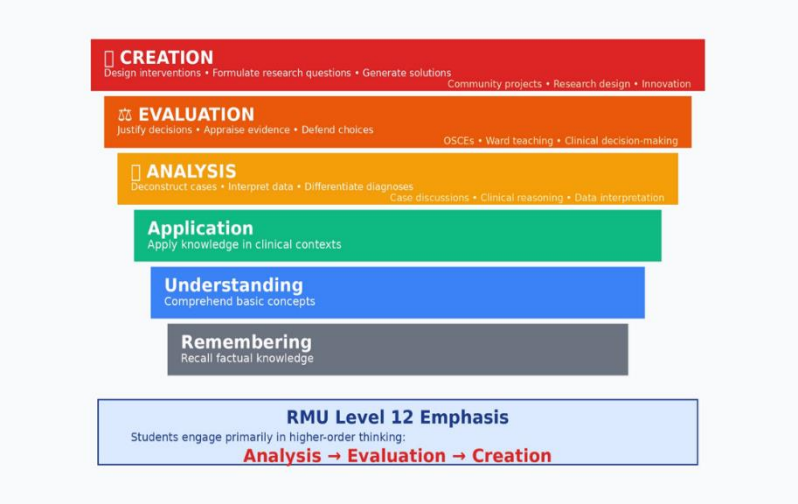


Figure 14 – Bloom's Taxonomy in RMU 12

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

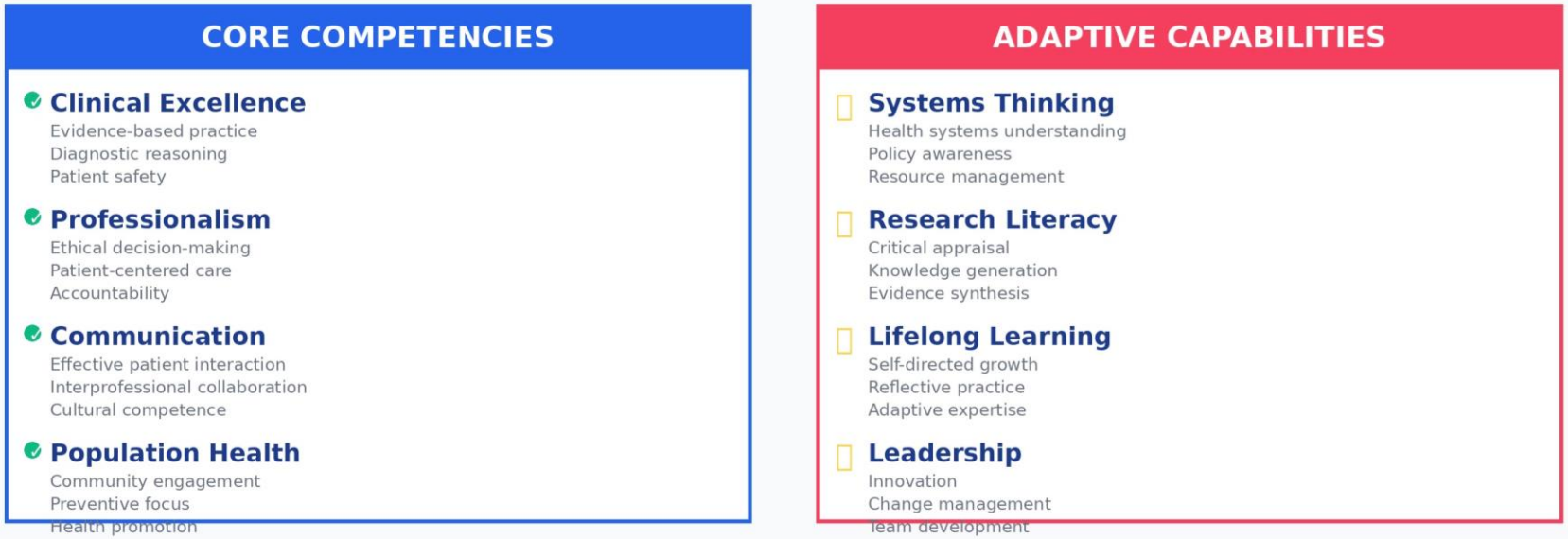


Figure 15 – Graduate Outcomes in RMU 12

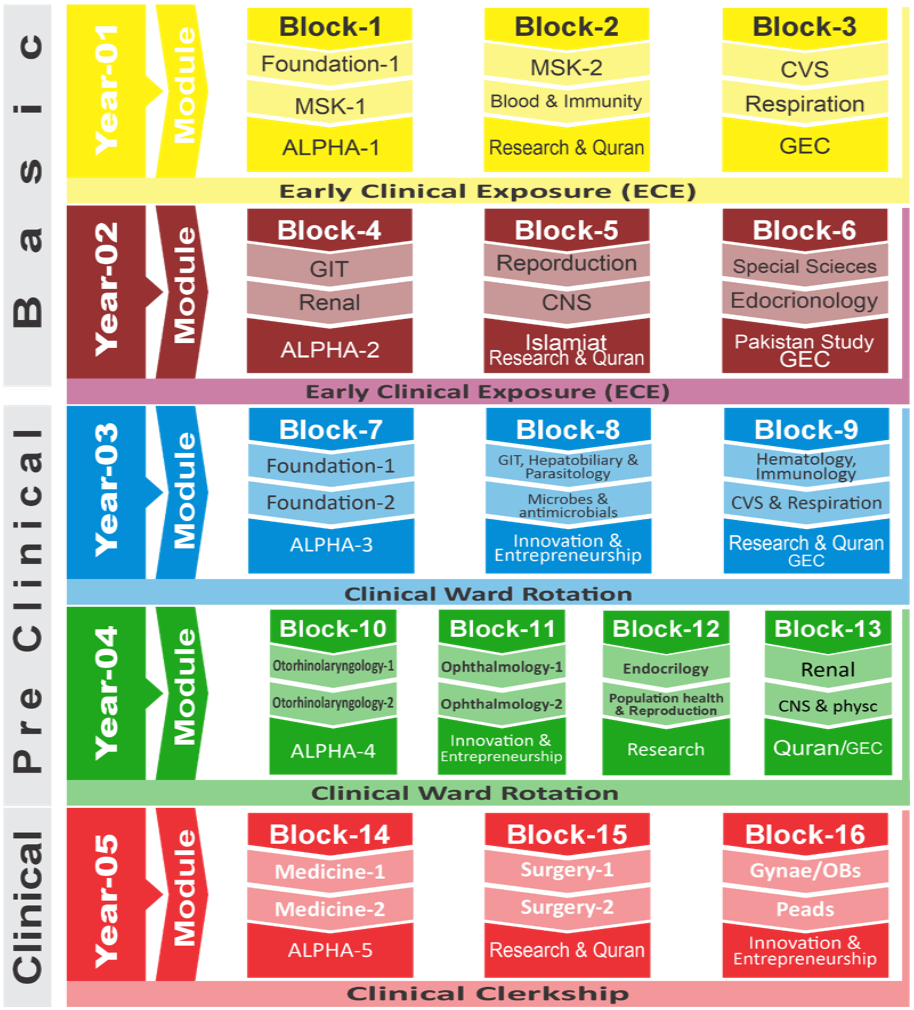


Figure 16 – Modules from basic to Clinical in RMU 12

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

Figure 17 – RMU 12 Symptom Based Integrated Clinical Clerkship

Symptom Based Integrated Clinical Clerkship
Rawalpindi Medical University

Level 12 Clinical Clerkship

(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 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:

Students experience:

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

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 (RMU 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. RMU 12 Embedded Clerkship

The RMU 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 12

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

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

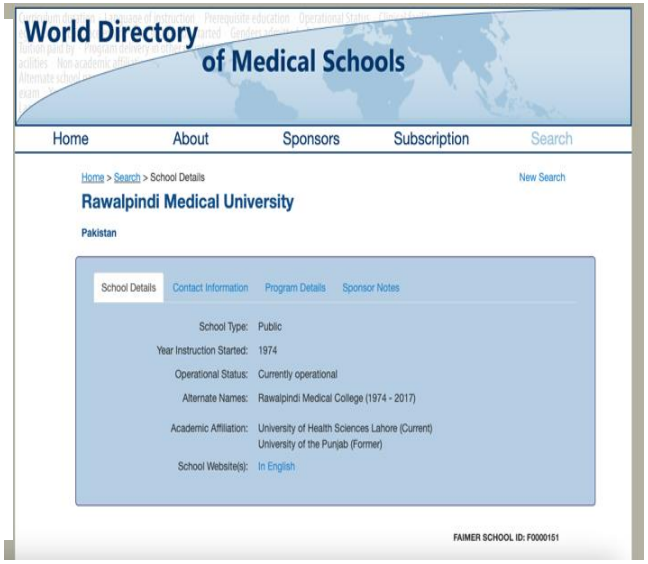
Reference Documents

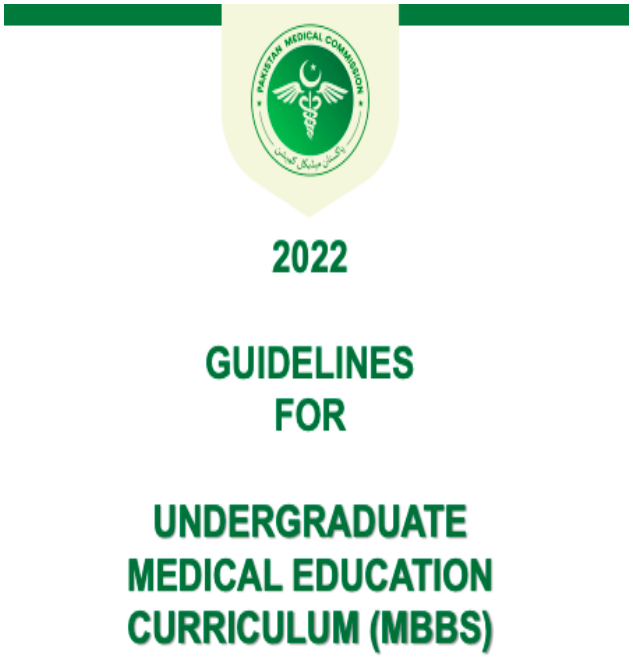
FAIMER™
A Division of Intealth

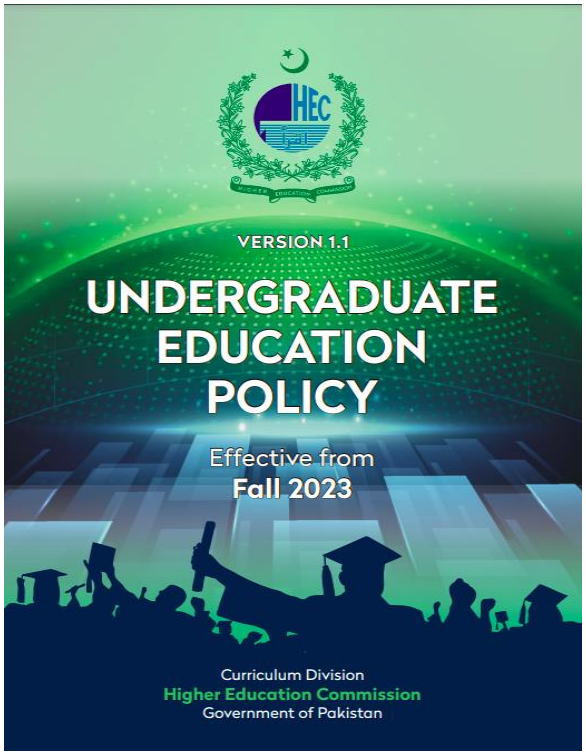
Foundation for Advancement of International Medical Education and Research

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

Figure 19 – Core competencies of a health professional

Seven-star doctor

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

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

- Takes a focused historyPerform 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 (Behaviour 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.

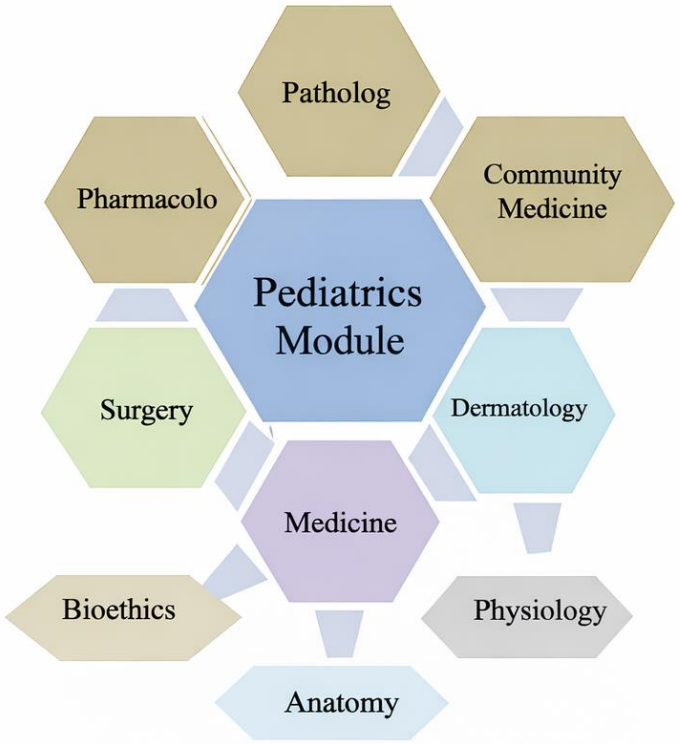
6. Scholar and Researcher

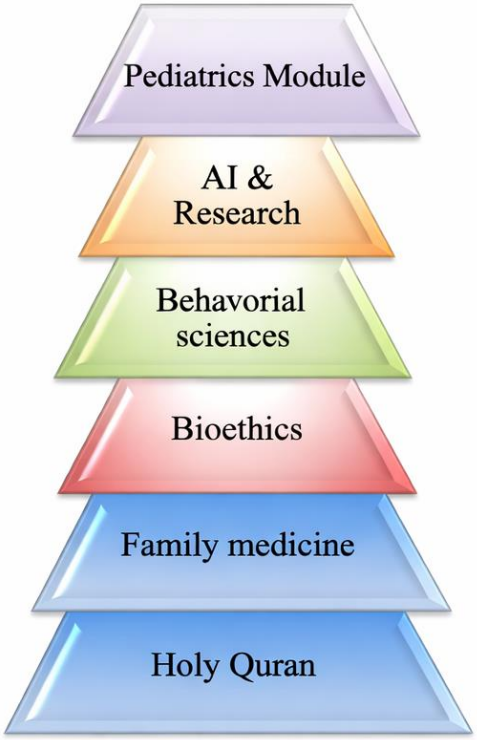
- Identifies a researchable problem and critically reviews the literature
- Phrases succinct research questions and formulates hypotheses
- Identifies the appropriate research design(s) in epidemiology and analytical tests in biostatistics to answer the research question.
- Collects, analyzes and evaluates data, and presents results.
- 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


Patholog
Pharmacolo
Community Medicine
Pediatrics Module
Surgery
Dermatology
Medicine
Bioethics
Physiology
Anatomy


Pediatrics Module
AI & Research
Behavorial sciences
Bioethics
Family medicine
Holy Quran

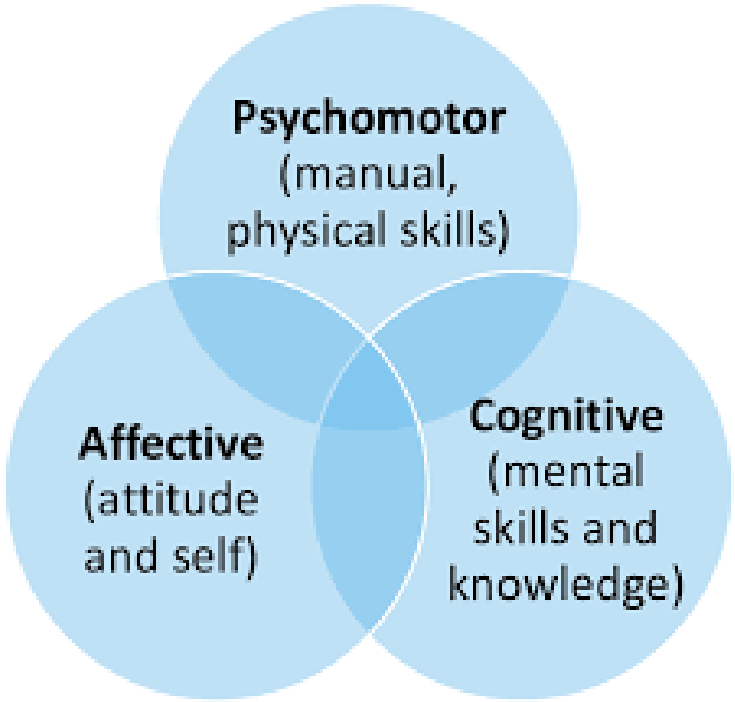
Study Guide: Terms & Abbreviations

Contents

Tables & Figures

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


Psychomotor
(manual,
physical skills)
Affective
(attitude
and self)
Cognitive
(mental
skills and
knowledge)

Section – II Educational Strategies

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.

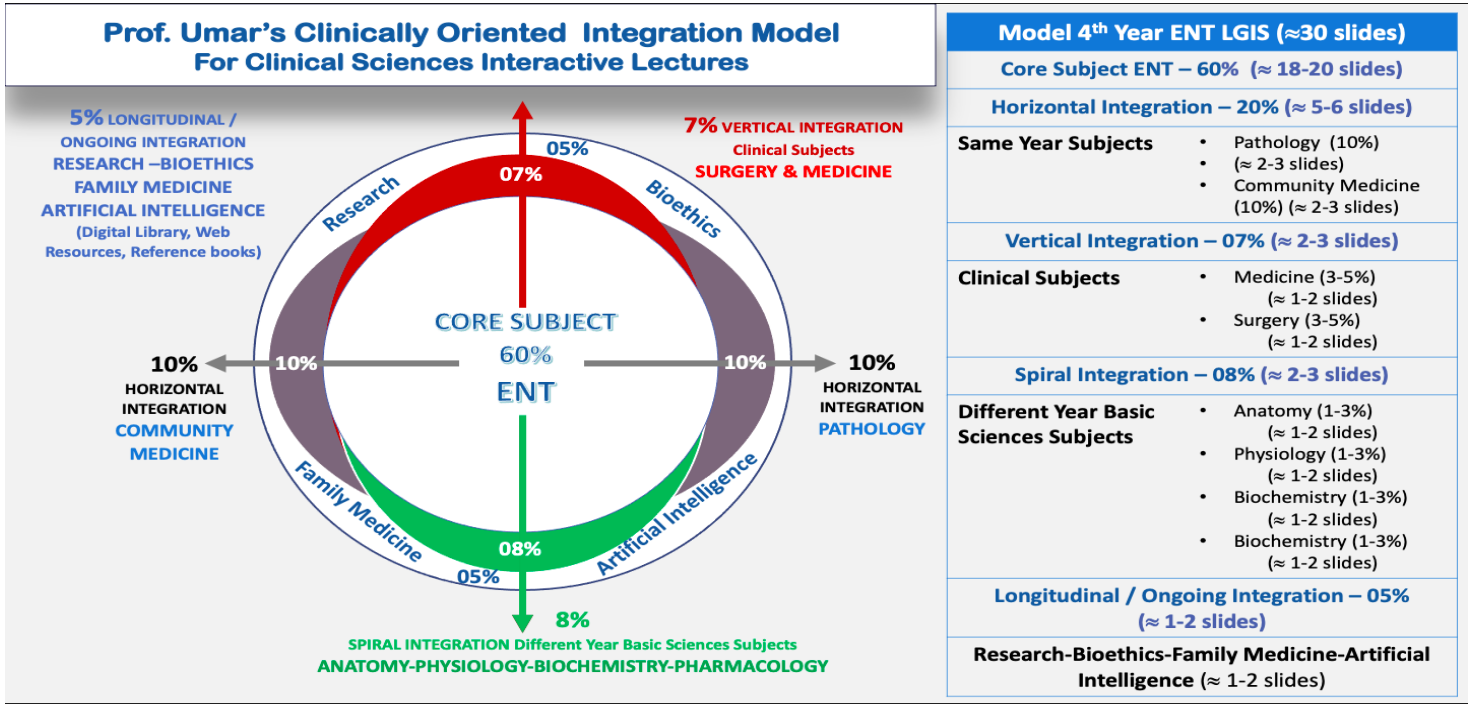


Figure 21 – Prof Umar Model of Integrated Lecture

1. 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

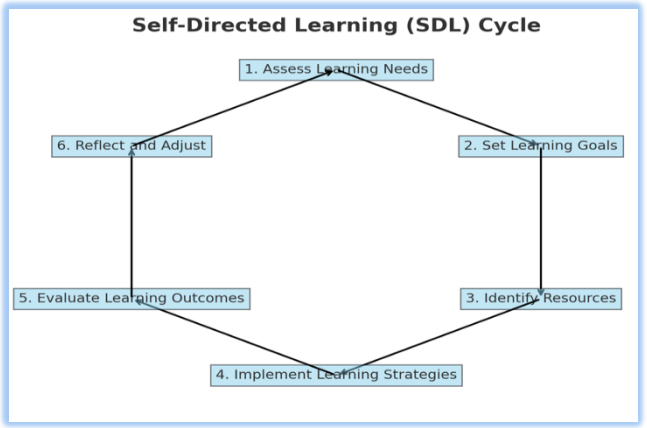
S.No	Topics	Approximate %
1	Title Of SGD	
2	Learning Objectives from Study Guides	
3	Horizontal Integration	5%+5% = 10%
4	Core Concepts of the Topic	70%
5	Vertical Integration	10%
6	Related Advance Research points	3%
7	Biomedical Ethical points	2%
8	Spiral integration	5%

Table 3. Steps of taking Small Group Discussions

2. 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



3. Transdisciplinary Clinical Reasoning Forum (TCRF)

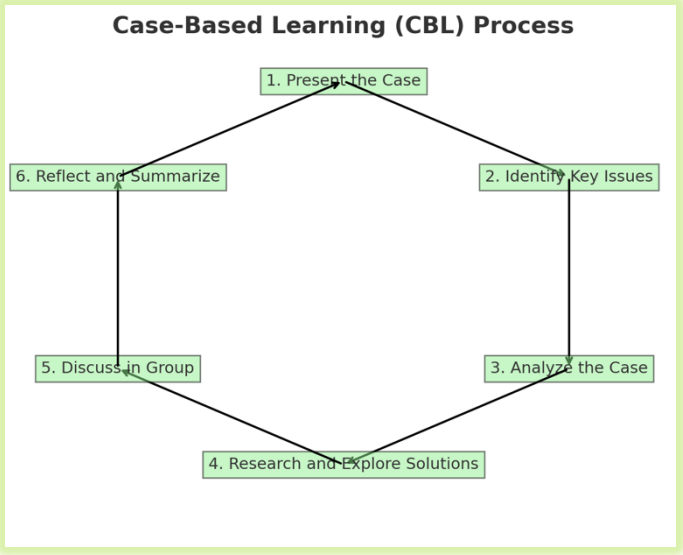
- It's a learner centered model which engages students in discussion of specific scenarios that resemble typically are real world examples.
- Case scenario will be given to the students
- Will engage students in discussion of specific scenarios that resemble or typically are real-world examples.
- Learning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

iv.



Section – III Themes, Learning Objectives, Teaching Strategies and Tools of Assessment

Themes For Pediatrics

Week	Theme No.	Topics
Week 1	Theme 1	Neonatology, Gastroenterology
Week 2	Theme 2	Nutrition/infectious diseases/CVS
Week 3	Theme 3	Nephro/Respiratory/Endocrinology)
Week 4	Theme 4	Hematology/CNS

What Makes This RMU-12

- No subject headings.
- Knowledge domains are embedded within clinical reasoning.
- The organizing principle is the **patient problem**, not disciplines.
- Learning mimics authentic clinical decision-making.

Students integrate:

- Anatomy (implicitly)
- Pathophysiology (implicitly)
- Pharmacotherapy (within management)
- Radiological Imaging interpretation (within reasoning)
- Internal Medicine (within management)
- Public health (within prevention)

But none are taught separately.

Teaching Format

- Small group facilitated learning
- Faculty from different backgrounds present but not teaching in silos
- Students build the care pathway themselves

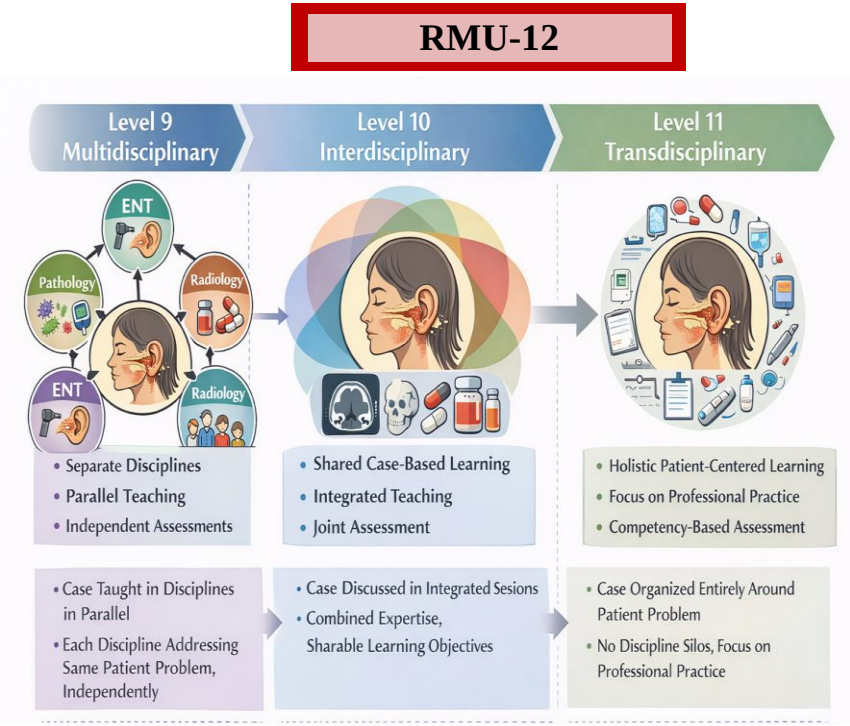


Figure 22 – Progression in Integration Approaches in Medical Education

- Assessment based on competence and clinical reasoning

Academic Justification Statement

"The case has been designed to reflect RMU-12, where learning is structured around authentic patient problems rather than disciplinary categories. Knowledge from biomedical, clinical, and public health domains is integrated seamlessly within professional practice."

TIME TABLE (4 Weeks) Final Year MBBS Annual Calendar / RMU 12 Schedule 2026

Final Year MBBS Annual Calendar / RMU 12 Schedule 2026Module 1 (Neonatology, Gastroenterology)

DAY	DATE	LGIS 8:00 AM – 9.:00 AM	BED SIDE CLERKING 9.00AM – 12PM	SGD 12:00 TO 02:00PM FRIDAY (11:00 TO12:00PM)	SDL (02:00 TO 04:00PM)	SHADOW INTERNSHIP / SDL 2:00 PM – 6:00 PM
Monday	30-03-2026 Introduction/ Orientation/ (08:00 to 08:30)	Newborn Care / Prematurity/RDS Facilitator Dr. Aqeela Ayub Presenters: 01,02, 03	9 to 9:30 report to the clerkship coordinator fr Assesment check and feed back clinicalClerkship 9:30 to 11:00 a.m Round participation 11 to 12:00 p.m Case allotment ▪ History ▪ Examination ▪ Formulating the DDs ▪ Summary making ▪ Management plan ▪ Documentation: Progress notes in SOAP format (On Work book)	Dr. Muneeba Iqbal Pediatric History taking / Newborn Examination	Care of normal newborn, Low birth weight baby , IUGR,	▪ Shadowing of HO/PGT in ER/ NICU/ PICU/ HDU. ▪ Admissions workflow. ▪ follow-up tasks, facilitation. ▪ documentation practice ▪ observe procedural skills ▪ Reflective enteries ▪ Portfolio summary ▪ Log-Book ▪ feedback forms ▪ patient-centred notes
Tuesday	31-03-26	Birth Asphyxia Facilitator Dr. Jawaria Zain Presenters: 01,02, 03		Dr. Huma Asghar Neonatal Sepsis(CBD) / Interpatient of ABGs	IDM(CBD), Metobolic hypocalcemia/ hypoglycemia disorder	
Wednesday	01-04-26	CPC		Dr. Syeda Mamoona Qudrat NRP / Hands on Training	Neonatal seizures, Common skin condition of neonates	
Thursday	02-04-26	Neonatal Jaundice Facilitator Dr. Sadaf Ijaz Presenters: 01,02, 03		Dr. Annam Asif TTN Congenital Pneumonia(CBD)	Pyloric stenosis, myelomeningocele, hydrocephalus, common congenital abnormalities, birth trauma	
Friday	03-04-26			Dr. Naila Iqra		

		Acute /Chronic Diarrhea Facilitator Dr. Maria Shamsher Presenters: 01,02, 03	▪ Patient education ▪ 1 Complete case write-up &1 Mini CEX dully signed by Senior registrar/ WK	Long case (Chronic Diarrhea)	Short Case (Abdominal Examination)	Growth & Development, Interpretation of centile charts	
Saturday	04-04-26	Chronic Liver Disease Facilitator Dr. Asad Shabbir Presenters: 01,02, 03		Dr. Nazia Yousaf Case based discussion Jaundice/Hepatomegaly Ascites		Acute Hepatitis, Acute Hepatic failure, liver cirrhosis	

Note one case presentation, 1 Mini CEX,1Complete case write-up, weekly portfolio summary required by the END of week

Day	**Date**	**LGIS 8:00AM – 9.:00AM**	**BED SIDE CLERKING 9.00AM – 12:00PM**	**SGD 12:00 to 02:00pm Friday (11:00 to12:00pm)**	**SDL (02:00 to 06:00pm)**	**SHADOW INTERNSHIP / SDL 2:00 PM – 6:00 PM**
Monday	06-04-2026	Malnutrition Facilitator Dr. Syrah Liaqat Presenters: 01,02, 03	9 to 9:30 report to the clerkship coordinator for Assessment check and feed back clinical Clerkship 9:30 to 11:00 a.m	Dr. Qurat ul Ain (RTH) Long Case (Failure to thrive) Short case (GPE Centile charts)	Rickets, Vitamin A deficiency, iodine deficiency	▪ Shadowing of HO/PGT in ER/ NICU/ PICU/ HDU. ▪ Admissions workflow.
Tuesday	07-04-2026	Measles/Mumps/Rubella Facilitator Dr. Muneebal Iqbal Presenters: 01,02, 03		Dr. Aqeela Ayub Approach to a child with fever and / EPI schedule/EPI room visit	IMNCI, Chicken Pox, A	

			Round participation 11 to 12:00 p.m Case allotment ▪ History ▪ Examination ▪ Formulating the DDs ▪ Summary making ▪ Management plan ▪ Documentation: Progress notes in SOAP format (On Work book) ▪ Patient education ▪ 1 Complete case write-up &1 Mini CEX dully signed by Senior registrar/ WK	maculopapular rash (CBD, with pictures)			▪ follow-up tasks, facilitation. ▪ documentation practice ▪ observe procedural skills ▪ Reflective enteries ▪ Portfolio summary ▪ Log-Book ▪ feedback forms ▪ patient-centred notes
Wednesday	08-04-2026	CPC		Dr. Jawaria Zain		Meningococcemia	
				Diarrheal diseases ARI & IMCI(CBD)	Imaging (Xray, CT Scan), ECG		
Thursday	09-04-2026	Enteric/Malaria/ Facilitator Dr. Huma Asghar Presenters: 01,02, 03		Dr. Sadaf Ijaz		Behavioral disorder in Pediatrics / Autism/ADHD	
				Dengue fever and fluid management (CBD)			
Friday	10-04-2026	Approach to a child with ascending paralysis(Polio/GBS) Facilitator Dr. Syeda Mamoona Qudrat Presenters: 01,02, 03		Dr. Maria Shamsher		PBL on AFP	
				BLS Choking Infant Hand on training			
Saturday	11-04-2026	Acyanotic CHD Facilitator Dr. Annam Asif Presenters: 01,02, 03		Dr. Asad Shabbir		Rheumatic fever, congestive cardiac failure	
				Long Case (CVS)	Short case (CVS)		

Note one case presentation, 1 Mini CEX,1Complete case write-up, weekly portfolio summary required by the END of week

Day	Date	LGIS 8:30 AM – 9.:30 AM	BED SIDE CLERKING 9.30AM – 12PM	SGD 12:00 to 02:00pm Friday (11:00 to12:00pm)	SDL (02:00 to 06:00pm)	SHADOW INTERNSHIP / SDL 2:00 PM – 6:00 PM
Monday	13-04-2026	Cyanotic CHD Facilitator Dr. Naila Iqra Presenters: 01,02, 03	9 to 9:30 report to the clerkship coordinator for Assessment check and feed back clinical Clerkship 9:30 to 11:00 a.m Round participation 11 to 12:00 p.m Case allotment ▪ History ▪ Examination ▪ Formulating the DDs ▪ Summary making ▪ Management plan ▪ Documentation: Progress notes in SOAP format (On Work book) ▪ Patient education	Dr. Syrah Liaqat Long Case(RF)	Infective endocarditis hypotension	▪ Shadowing of HO/PGT in ER/ NICU/ PICU/ HDU. ▪ Admissions workflow. ▪ follow-up tasks, facilitation. ▪ documentation practice ▪ observe procedural skills ▪ Reflective enteries ▪ Portfolio summary ▪ Log-Book ▪ feedback forms
Tuesday	14-04-2026	Nephrotic/Nephritic Syndrome Facilitator Dr. Nazia Yousaf Presenters: 01,02, 03		Dr. Qurat ul Ain (RTH) Long Case(Nephrotic Syndrome)	UTI Uro-Obstructive disorder	
Wednesday	15-04-2026	CPC		Dr. Muneeba Iqbal AKI/CKD	AKI/CKD PBL	
Thursday	16-04-2026	Respiratory Infections(Croup, Epiglottitis ,Diphtheria) Dr. Sadaf Ijaz Presenters: 01,02, 03		Dr. Huma Asghar Asthma/Nebulization/ inhaler in Pediatrics	Asthma / bronchiolitis	
Friday	17-04-2026	Pneumonia/Tuberculosis Facilitator Dr. Jawaria Zain Presenters: 01,02, 03		Dr. Syeda Mamoona Qudrat Long Case(chronic cough)	TB & Plural effusion	
Saturday		Type 1 DM		Dr. Annam Asif		

	18-04-2026	Dr. Aqeela Ayub Facilitator Presenters: 01,02, 03	▪ 1 Complete case write-up &1 Mini CEX dully signed by Senior registrar/ WK	Long case (DM type 1) PBL Scenario on ambiguous genetalia	Hypothyroidism cretinism Ambiguous genetalia (PBL)	▪ patient-centred notes skills

Note one case presentation, 1 Mini CEX,1Complete case write-up, weekly portfolio summary required by the END of week

<table>
<tr><th>Day</th><th>Date</th><th>LGIS
8:30 AM – 9.:30 AM</th><th>BED SIDE CLERKING
9.30AM – 12PM</th><th colspan="2">SGD
12:00 to 02:00pm
Friday (11:00 to12:00pm)</th><th>SDL
(02:00 to 06:00pm)</th><th>Shadow Internship / SDL
2:00 PM – 6:00 PM</th></tr>
<tr><td>Monday</td><td>20-04-2026</td><td>Anemia with HSM and without HSM
Facilitator
Dr. Maria Shamsher
Presenters: 01,02, 03</td><td rowspan="2">9 to 9:30 report to the clerkship coordinator for Assessment check and feed back clinical Clerkship
9:30 to 11:00 a.m Round participation 11 to 12:00 p.m Case allotment
▪ History
▪ Examination</td><td colspan="2">Dr. Naila Iqra
Long Case(Thalassemia Major)</td><td>Nutritional anemia, Bleeding disorders(CBD)</td><td rowspan="2">▪ Shadowing of HO/PGT in ER/ NICU/ PICU/ HDU.
▪ Admissions workflow.
▪ follow-up tasks, facilitation.
▪ documentation practice</td></tr>
<tr><td>Tuesday</td><td>21-04-2026</td><td>ITP/Aplastic Anemia
Facilitator
Dr. Asad Shabbir
Presenters: 01,02, 03</td><td>Dr. Nazia Yousaf</td><td>Long Case(Leukemia)</td><td>Lab Data(CBC,SE,RFTs,LFTs,PPA scoring,UrineRE and CS)</td><td>Lymphoma/Leukemia</td></tr>
</table>

			▪ Formulating the DDs ▪ Summary making ▪ Management plan ▪ Documentation: Progress notes in SOAP format (On Work book) ▪ Patient education ▪ 1 Complete case write-up &1 Mini CEX dully signed by Senior registrar/ WK				▪ observe procedural skills ▪ Reflective enteries ▪ Portfolio summary ▪ Log-Book ▪ feedback forms ▪ patient-centred notes
Wednesday	22-04-2026	CPC		Dr. Syrah Liaqat		Procedures(LP,Ascitic tap,Pleural tap,exchange transfusion,PD) observed and learn with on call team	
				SLE/JIA(CBD)	Locomotor system examination		
Thursday	23-04-2026	Febrile Fits / Meningitis Facilitator Dr. Qurat ul Ain (RTH) Presenters: 01,02, 03		Dr. Jawaria Zain		Epilepsy, seizures disorder	
				Long Case(Epilepsy) Afebrile seizures	Short Case(Motor System examination)		
Friday	24-04-2026	Cerebral Palsy Facilitator Dr. Muneeba Iqbal Presenters: 01,02, 03		Dr. Huma Asghar		Developmental delay Developmental assessment	
				Long Case(CP)	Short Case(cerebellar system,cranial nerves)		
Saturday	25-04-2026	Assessment		Assessment			

Note one case presentation, 1 Mini CEX,1Complete case write-up, weekly portfolio summary required by the END of wee

TIME TABLE (4 Weeks)
Final Year MBBS Annual Calendar / LGIS Schedule 2026
Paediatric Department HFH/BBH/RTH

Day	Date	LGIS 8:30 AM – 9.:30 AM	Venue Respective Wards)
Monday	30-03-2026	Prematurity/RDS Newborn Care	HFH/BBH
Tuesday	31-03-2026	Birth Asphyxia	HFH/BBH
Wednesday	01-04-2026	CPC	HFH/BBH
Thursday	02-04-2026	Neonatal Jaundice	HFH/BBH
Friday	03-04-2026	Acute /Chronic Diarrhea	HFH/BBH
Saturday	04-04-2026	Chronic Liver Disease	HFH/BBH

Day	Date	LGIS 8:30 AM – 9.:30 AM	Venue(Respective Wards)
Monday	06-04-2026	Malnutrition	HFH/BBH
Tuesday	-04-2026	Measles/Mumps/Rubella	HFH/BBH
Wednesday	08-04-2026	CPC	HFH/BBH
Thursday	09-04-2026	Enteric/Malaria/Dengue	HFH/BBH
Friday	10-04-2026	Approach to a child with ascending paralysis(Polio/GBS)	HFH/BBH
Saturday	11-04-2026	Acyanotic CHD	HFH/BBH

Day	Date	LGIS 8:30 AM – 9.:30 AM	Venue(Respective Wards)
Monday	13-04-2026	Cyanotic CHD	HFH/BBH
Tuesday	14-04-2026	Nephrotic/Nephritic Syndrome	HFH/BBH
Wednesday	15-04-2026	CPC	HFH/BBH
Thursday	16-04-2026	AKI/CKD	HFH/BBH
Friday	17-04-2026	Pneumonia/Tuberculosis	HFH/BBH
Saturday	18-04-2026	Type 1 DM	HFH/BBH

Day	Date	LGIS 8:30 AM – 9.:30 AM	Venue(Respective Wards)
Monday	20-04-2026	Anemia with HSM and without HSM	HFH/BBH
Tuesday	21-04-2026	ITP/Aplastic Anemia	HFH/BBH
Wednesday	22-04-2026	CPC	FH/BBH
Thursday	23-04-2026	Meningitis/Febrile Fits/Epilepsy	HFH/BBH
Friday	24-04-2026	Cerebral Palsy	HFH/BBH
Saturday	25-04-2026	Assessment	HFH/BBH

TABLE OF SPECIFICATION
(THEMES/TOPICS/LEARNING OUTCOMES/EDUCATIONAL STRATEGIES

Theme	Topic	Specific learning object (SLO) At the end of the Session student should be able to	Teaching strategy	Level of cognition			Assessment tools
				C1	C2	C3	
WEEK 1							
Neonatal care	Prematurity/rds Newborn care	Define prematurity and neonatal respiratory distress syndrome (RDS). Identify risk factors and causes of prematurity and RDS. Understand the pathophysiology of prematurity-related complications and Ssurfactant deficiency in RDS. Recognize clinical features and signs of prematurity and RDS . Outline diagnostic evaluation. Describe principles of management, supportive care, prevention strategies, and monitoring for complications .	LGIS PPT		√	√	MCQs, SEQs,SAQs
Neonatal care	Birth asphyxia	Define perinatal asphyxia and understand its diagnostic criteria (Apgar score, umbilical pH, neonatal encephalopathy, organ involvement).	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		Identify causes and risk factors, including biological. Recognize clinical features and pathophysiology. Explain complications and outcomes, including neonatal mortality, cerebral palsy, epilepsy, and long-term neurodevelopmental deficits. Outline management and prevention strategies					
Neonatal care	Neonatal jaundice	Enlist common causes of unconjugated and conjugated hyperbilirubinemia at different days of life Enlist investigations Know indications of phototherapy and exchange transfusion Enlist complications. Management according to cause.	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs
Digestive disorders	Acute/chronic diarrhea	Pathogenesis of the acute and chronic diarrhea Know clinical presentation and common causes of acute diarrhea How to classify dehydration Hydration plan according to dehydration Know the common complication	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		Differential diagnosis of chronic diarrhea How to investigate The management plan and treatment					
Digestive disorders	Chronic liver disease	Define chronic liver disease (CLD) in pediatrics Classify types and causes of pediatric CLD Identify common etiologies (biliary, metabolic, infectious, autoimmune) Understand basic pathophysiology of liver injury and fibrosis Recognize clinical features and warning signs Outline diagnostic investigations and their interpretation Describe principles of management and supportive care Identify complications of chronic liver disease.	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs
WEEK 2							
Nutrition	Malnutrition	Define malnutrition and its types (undernutrition, overnutrition, micronutrient deficiencies)	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		Classify malnutrition (wasting, stunting, SAM) Identify causes and risk factors of malnutrition Recognize clinical features and signs of malnutrition(Marasmus Vs kwashiorkor) Outline assessment methods (anthropometry, growth charts, clinical evaluation) Describe management, prevention, and nutritional rehabilitation					
Infectious diseases	Measles/mumps/rubella	Define measles/mumps/rubella and identify its causative agent and transmission Recognize clinical features/rash Understand pathophysiology Outline diagnostic methods Outline complications Describe management and prevention strategies	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs
Infectious diseases	Enteric fever/malaria/dengue fever	Define dengue/enteric/malaria and identify its causative agent and transmission Recognize clinical features Understand pathophysiology Outline diagnostic methods Outline complications	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		Describe management and prevention strategies					
Acute flaccid paralysis	Approach to a child with acute flaccid paralysis(gbs/polio)	Define acute flaccid paralysis (AFP) Identify common causes (e.g., poliomyelitis, Guillain-Barré syndrome) Understand basic pathophysiology of AFP Differentiate AFP from other types of paralysis Outline diagnostic evaluation (history, examination, CSF analysis, nerve studies) Describe principles of management and supportive care Identify complications (respiratory failure, autonomic dysfunction) Understand surveillance and reporting (polio eradication programs) Discuss prevention strategies (immunization)	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs
Congenital heart diseases	Acyanotic congenital heart disease	Define acyanotic congenital heart disease Classify types (left-to-right shunts vs obstructive lesions)	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		Identify common conditions (ASD, VSD, PDA, coarctation of aorta) Understand basic pathophysiology of these defects Recognize clinical features and signs (murmurs, heart failure, growth delay) Outline diagnostic investigations (echocardiography, chest X-ray, ECG) Describe principles of medical and surgical management Identify potential complications Understand prognosis and follow-up care					
WEEK 3							
Congenital heart diseases	Cyanotic congenital heart diseases	Define cyanotic congenital heart diseases Classify types (e.g., Tetralogy of Fallot, transposition of great arteries) Understand basic pathophysiology of right-to-left shunts and cyanosis	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		Recognize clinical features (cyanosis, clubbing, hypoxic spells) Outline diagnostic evaluation (pulse oximetry, echocardiography, imaging) Describe principles of management and indications for surgical intervention					
Renal disorders	Nephrotic/nephritic syndrome	Define Nephrotic/Nephritic Syndrome Pathogenesis of these disease Causes of nephritic syndrome Know clinical presentation Know how to diagnose these diseases Know the common complication Know the management plan and treatment	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs
Renal disorders	Aki/ckd	Define Acute kidney injury/ chronic kidney disease Know clinical presentation and common causes in children Know how to diagnose How will you investigate Know the common complication	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		Know the management plan and treatment					
Respiratory disorders	Pneumonia/tuberculosis	Pathogenesis of the Pneumonia/Tuberculosis What are different clinical presentation What are the causative organism How will you investigate/Detailed investigations of TB What is PPA Scoring Know the common complication Know the management plan and treatment What is the prevention of these diseases	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs
Endocrinology	Type 1 diabetes mellitus	Define Type 1 Diabetes Mellitus Understand etiology and autoimmune pathophysiology Recognize clinical features (polyuria, polydipsia, weight loss, DKA) Outline diagnostic criteria and investigations	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		Describe principles of insulin therapy and glucose monitoring Identify complications and strategies for prevention and long-term management					
WEEK 4							
Hematological disorders	Anemia with and without hepatospleenomegaly	Define anemia and differentiate between types based on red cell indices and clinical features Understand the pathophysiology of anemia in general, and specific mechanisms leading to hepatosplenomegaly Identify common causes of anemia without hepatosplenomegaly Identify common causes of anemia with hepatosplenomegaly Recognize clinical features and signs associated with both types Outline diagnostic evaluation Describe principles of management and treatment	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs

		strategies according to underlying cause					
Hematological disorders	Itp/aplatic anemia	Define ITP and aplastic anemia, and differentiate between them Understand the pathophysiology and underlying mechanisms of each condition Recognize clinical features, including bleeding tendencies in ITP and pancytopenia symptoms in aplastic anemia Outline diagnostic evaluation (CBC, peripheral smear, bone marrow examination, relevant labs) Describe principles of management, treatment options, and monitoring for complications	LGIS PPT		√	√	MCQs, SEQs,SAQs,EMQs
Neurological disorders	Meningitis/febrile fits/epilepsy	Define meningitis, febrile seizures, and epilepsy Classify types of meningitis (bacterial, viral, tuberculosis), febrile fits (simple, complex), and seizures Identify common causes, risk factors, and triggers for each condition	LGIS PPT		√		MCQs, SEQs,SAQs,EMQs

		Recognize clinical features and warning signs (fever, neck stiffness, altered consciousness, seizure patterns) Outline diagnostic evaluation (CSF analysis, EEG, imaging, lab tests) Describe principles of management, complications, and long-term care, including parental counseling and preventive strategies					
Neurological disorders	Cerebral palsy	Define cerebral palsy Classify types (spastic, dyskinetic, ataxic, mixed) Identify risk factors and causes (prenatal, perinatal, postnatal) Understand basic pathophysiology Recognize clinical features (motor delay, abnormal tone, posture issues) Outline diagnostic evaluation and early detection Describe management (rehabilitation, physiotherapy, supportive care) Identify associated comorbidities (seizures,	LGIS PPT		√		MCQs, SEQs,SAQs,EMQs

		intellectual disability, speech problems)					

Integrated Modular Curriculum Pediatrics Final Year

PEDIATRIC SDL Learning Objectives

At the end of session Student must learn:

Sr #	Specialty	Topic	SPECIFIC LEARNING OJECTIVES (SLO)			Setting	MOA
			Cognition	Skill	Attitude		
1	**neonatology**	Care of Normal Newborn	• Describe physiological changes at birth. • Explain APGAR scoring system. • Outline routine newborn care practices.	• Perform immediate newborn assessment (APGAR scoring). • Demonstrate: oCord care o Thermal protection o Early initiation of breastfeeding • Conduct newborn examination. • Administer routine prophylaxis (Vitamin K, eye care, immunization).	• Promote exclusive breastfeeding. • Educate caregivers on newborn care and danger signs. • Maintain infection prevention n practices	SDL time NICU Well baby Nursery OPD ER mother room vaccination room	LMS Reflective entries in the logbook Portfolio OSCE

PAEDIATRIC SDL LEARNING OBJECTIVES
AT THE END OF SESSION MUST LEARN:

S. No.	Specialty	Topic	Specification learning objectives (SLO)				
			Cognition	**Skill**	**Attitude**	**Setting**	**MOA**
1	Neonatology	Care of normal newborn	Define a normal newborn and its characteristics (term, weight, APGAR). Describe the steps of **immediate newborn care at birth**. Explain the importance of **thermal regulation** and methods to prevent hypothermia. Outline **early initiation of breastfeeding** and its benefits. Describe **cord care**, eye care, and skin care. Identify **normal neonatal reflexes** and physiological parameters. List routine **prophylactic measures** (Vitamin K,	Perform **initial assessment of a newborn** (APGAR scoring). Demonstrate **proper drying and warming techniques**. Assist in **early initiation of breastfeeding**. Demonstrate **correct cord care technique**. Measure and record **weight, length, and head cicumference**. Examine a newborn for **normal reflexes and physical findings**. Administer **Vitamin K**	Empathy and respect towards mother and newborn. Commitment to **safe and clean delivery practices**. Positive attitude towards **exclusive breastfeeding**. Responsibility in**arly detection of neonatal danger signs**. Effective communication with parents regarding newborn care. Cultural sensitivity in handling mother–baby dyad.	Labor room / Delivery room Postnatal ward Neonatal nursery Otpatient department (OPD) Community setting (for follow-up care)	MCQs SEQs Viva voce Case-based discussions

			vaccination – BCG, OPV, Hep B). Recognize **danger signs in a newborn** requiring urgent referral. Explain rooming-in and kangaroo mother care (basic concept). Describe discharge advice and follow-up of a normal newborn.	**injection** correctly (simulation/clinical setting). Counsel mother on **breastfeeding technique and positioning**.			
2		IDM (CBD) metabolic hypoglycemia disorder	Define **Infant of Diabetic Mother (IDM)**. Explain the **pathophysiology of neonatal hypoglycemia in IDM** (maternal hyperglycemia → fetal hyperinsulinemia). Identify **risk factors** for hypoglycemia in newborns. Describe the **clinical features of neonatal hypoglycemia** (jitteriness, lethargy, seizures, apnea). State the **diagnostic criteria and blood**	Measure and interpret **blood glucose levels** using glucometer. Perform **initial assessment of a newborn at risk of hypoglycemia**. Initiate **early feeding** in at-risk newborns. Calculate and administer **IV dextrose infusion** correctly.	Vigilance in identifying **high-risk newborns (IDM)**. Promptness in managing **neonatal emergencies**. Empathy and reassurance towards anxious parents. Responsibility in preventing **long-term neurological damage**. Teamwork with obstetric and	Labor room Neonatal nursery / NICU Postnatal ward Pediatric ward Outpatient follow-up clinic	MCQs SEQs Viva voce Case-based discussions

			glucose thresholds for hypoglycemia. Outline **screening protocols** for at-risk newborns (especially IDM). Describe **management of neonatal hypoglycemia** (feeding, IV dextrose). Explain **complications of untreated hypoglycemia** (neurological damage). Describe **preventive strategies** in IDM (early feeding, monitoring). Differentiate hypoglycemia in IDM from other metabolic causes.	Monitor and chart **glucose levels serially**. Recognize and manage **hypoglycemic emergencies** (simulation/clinical setting). Counsel mother regarding **feeding and monitoring** of IDM.	neonatal care providers.		
3		Neonatal seizures common skin condition of neonates	Define **neonatal seizures** and differentiate them from jitteriness. Classify types of neonatal seizures (subtle, clonic, tonic, myoclonic). Describe common **etiologies**	Recognize different types of **neonatal seizures clinically**. Perform **initial stabilization (ABC)**.	Act promptly in neonatal emergencies. Show responsibility in preventing	NICU Neonatal nursery Pediatric ward Emergency department	MCQs, SEQs OSCE/OSPE Mini-CEX Case-based discussion Supervisor feedback

			(hypoxic-ischemic encephalopathy, hypoglycemia, hypocalcemia, infections). Explain the **pathophysiology** of neonatal seizures. Identify **clinical features** and subtle presentations. Outline **diagnostic approach** (blood glucose, electrolytes, sepsis workup, EEG). Describe **acute management protocol**. List **first-line and second-line anticonvulsants** (e.g., phenobarbital). Recognize **complications and prognosis**. □ Differentiate seizures from benign neonatal movements.	Check and interpret **blood glucose** rapidly. Initiate **emergency management** (e.g., dextrose, calcium). Assist in administration of **anticonvulsant therapy**. Monitor vitals and neurological status. □ Document seizure episodes accurately	neurological damage. Communicate effectively with parents. Work efficiently in a multidisciplinary team.		

4		pyloric stenosis myelomeningocele, hydrocephalus, common congenital abnromalities birth trauma	Define hypertrophic pyloric stenosis. Describe **etiology and risk factors** (male predominance, first-born). Explain **pathophysiology** (gastric outlet obstruction → projectile vomiting). Identify **clinical features** (non-bilious vomiting, olive-shaped mass, dehydration). Describe characteristic **electrolyte imbalance** (hypochloremic metabolic alkalosis). Outline **diagnostic modalities** (ultrasound). Describe **management** (fluid correction +	Perform abdominal examination (palpation of pyloric "olive"). Assess dehydration clinically. Interpret electrolyte reports. Assist in preoperative stabilization. Counsel parents regarding surgery.	Prompt recognition and referral Empathy towards parents Safe preoperative care attitude	Pediatric ward Surgical unit Emergency department	MCQs, SEQs, OSCE, Case discussion, Mini-CEX

			Ramstedt pyloromyotomy). Recognize complications if untreated.				
5		growth & development intereptation of centile charts	Define **growth and development** and differentiate between them. Describe normal patterns of **physical growth** (weight, length/height, head circumference). Explain the concept of **growth charts and centiles (percentiles)**. Interpret different centile lines (e.g., 3rd, 50th, 97th). Describe **WHO growth standards** and their use. Identify normal vs abnormal growth patterns.	Measure and record **weight, height/length, and head circumference** accurately. Plot measurements correctly on **growth (centile) charts**. Interpret plotted data and identify abnormalities. Assess growth trends over time (serial measurements).	Appreciate importance of **regular growth monitoring**. Show concern for early detection of growth disorders. Communicate findings clearly and sensitively to parents. Promote proper nutrition and healthy practices. □ Avoid unnecessary alarm while reassuring parents.	Pediatric OPD Well-baby clinic Community health center □ Pediatric ward	MCQs SEQs Viva voce □ Case-based discussions

			Recognize **growth faltering / failure to thrive**. Interpret **crossing of centile lines** and its clinical significance. Differentiate causes of **short stature** and **obesity** based on charts. □ Understand factors affecting growth (nutrition, genetics, chronic illness).	Identify children requiring further evaluation or referral. □ Counsel parents regarding child growth and nutrition.			
6		Acute hepatitis, acute hepatic failure liver cirrhosis	Define acute hepatitis. List common causes (viral – HAV, HBV, HCV, HEV; drugs; toxins). Describe **pathophysiology** of hepatocellular injury. Identify **clinical features** (jaundice, malaise, anorexia, dark urine).	Take focused history (risk factors, drug use). Perform clinical examination (jaundice, hepatomegaly). Interpret LFTs and viral markers.	Infection control awareness Patient counseling and reassurance □ Preventive healthcare promotion	Pediatric ward OPD □ Emergency	MCQs, SEQs, OSCE, Case discussion, Viva

			Interpret **liver function tests (LFTs)**. Describe **serological markers** for viral hepatitis. Outline **management principles** (supportive care, monitoring). Recognize complications (cholestasis, fulminant hepatitis). Describe preventive measures (vaccination, hygiene).	Identify severity and need for referral. □ Counsel patients regarding hygiene and transmission prevention.			
7		Rickets, vitamin A deficiency, iodine deficiency	Define rickets and differentiate it from osteomalacia. Describe **etiology** (vitamin D deficiency, calcium deficiency, malabsorption).	Perform clinical examination for skeletal deformities. Assess growth parameters.	Emphasis on prevention Nutritional awareness Parental education and reassurance	Pediatric OPD Community health setup Pediatric ward	MCQs, SEQs, OSCE (X-ray interpretation), Viva

			Explain **pathophysiology** (defective mineralization of growing bone). Identify **clinical features**: Bow legs/knock knees Rachitic rosary Wrist widening Delayed milestones Interpret **laboratory findings** (low calcium/phosphate, high ALP). Recognize **radiological features** (cupping, fraying, metaphyseal widening). Outline **management** (vitamin D,	Interpret X-rays and lab reports. Counsel parents regarding diet and sunlight exposure. Prescribe appropriate supplementation.			

			calcium supplementation). Describe preventive strategies (sunlight exposure, nutrition).				
8		IMNCI, Chicken pox, A	Define IMNCI and its objectives. Describe the **components of IMNCI strategy** (improving case management, health systems, family/community practices). Explain the **age classification** (0–2 months, 2 months–5 years). Describe **assessment, classification, and management approach** in IMNCI. Identify **general danger signs** in children. Explain color-coded classification	Perform systematic **IMNCI assessment** of a child. Identify and classify illness using IMNCI charts. Recognize **danger signs** quickly. Decide appropriate **treatment or referral**. Counsel caregivers effectively. Demonstrate correct drug dosing (e.g., ORS, antibiotics).	Patient-centered approach to child care. Respectful communication with caregivers. Commitment to reducing child mortality. Preventive healthcare mindset.	Basic health units (BHU) Rural health centers (RH Pediatric OPD Community settings	MCQs, OSCE (IMNCI chart station), Mini-CEX, Case-based discussion

			(Pink, Yellow, Green). Describe management of common conditions: Pneumonia Diarrhea Malnutrition Fever Outline neonatal care within IMNCI (feeding, infection, jaundice). Explain **counseling of caregivers** (feeding, fluids, danger signs).				
9		Meningococcemia	Define meningococcemia. Identify the causative organism: Neisseria meningitidis.	Perform rapid **initial assessment (ABC)** in a critically ill child. Recognize **petechial/pu**	Maintain high index of suspicion for life-threatening infections. Act **urgently**	Pediatric emergency ICU / PICU Pediatric ward	MCQs SEQs Viva voce □ Case-based discussions

			Describe **epidemiology and transmission** (respiratory droplets, close contact). Explain **pathophysiology** (bacteremia → endotoxin release → septic shock, DIC). Recognize **clinical features**: Fever Petechial/purpuric rash Hypotension Altered consciousness Identify **meningococcal rash** and its significance. Describe complications:	**rpuric rash** early. Initiate **emergency managemen t** (oxygen, IV access, fluids). Administer **empirical IV antibiotics promptly**. Monitor vital signs and signs of shock. Interpret laboratory findings (CBC, coagulation profile). □ Counsel family regarding severity and need for urgent care	**and decisively** in septic shock. Demonstrat e teamwork in emergency and ICU settings. Communica te clearly and compassion ately with family. □ Emphasize infection control and prophylaxis.		

			Septic shock Disseminated intravascular coagulation (DIC) Waterhouse–Friderichsen syndrome Outline **diagnostic investigations** (blood culture, CSF analysis if stable). Describe **management principles**: Immediate IV antibiotics (e.g., ceftriaxone) Fluid resuscitation ICU care Explain **prophylaxis** for close contacts				

			(rifampicin, vaccination).				
10		Behavioral disorder in pediatrics/autism /ADHD	Define behavioral disorders in children. Classify common disorders (neurodevelopmental, emotional, conduct disorders). Identify risk factors (genetic, environmental, psychosocial). Recognize importance of early diagnosis and intervention. **Autism Spectrum Disorder (ASD)** Define Autism Spectrum Disorder. Describe core features:	Take detailed **developmental and behavioral history**. Use basic **screening tools** for autism and ADHD. Observe child behavior during clinical interaction. Differentiate normal vs abnormal behavior. Counsel parents regarding diagnosis and management. Refer appropriately to specialists (psychologist, psychiatrist,	Show empathy and patience with children and families. Avoid labeling or stigmatizing the child. Maintain confidentiality and professionalism. Encourage early intervention and parental involvement. Adopt a multidisciplinary team approach.	Pediatric OPD Developmental clinics Child psychiatry unit Community and school settings	MCQs SEQs Viva voce Case-based discussions

			Impaired social interaction Communication difficulties Restricted/repetitive behaviors Identify early warning signs (lack of eye contact, delayed speech). Explain etiology and neurodevelopmental basis. Outline diagnostic criteria (DSM-5 concept). Describe management (behavioral therapy, speech	speech therapist).			

			therapy, parental training). **Attention Deficit Hyperactivity Disorder (ADHD)** Define Attention Deficit Hyperactivity Disorder. Describe subtypes (inattentive, hyperactive-impulsive, combined). Identify clinical features (inattention, hyperactivity, impulsivity). Explain diagnostic criteria and age of onset. Outline management (behavioral therapy, stimulants				

			e.g., methylphenidate).				
11		PBL on AFP	Define AFP and its epidemiological significance. List **causes of AFP** in children: Poliovirus infection Guillain-Barré syndrome (GBS) Transverse myelitis Trauma Other viral infections (Enterovirus, West Nile Virus) Describe **pathophysiology** of poliomyelitis vs GBS. Identify **clinical features** of AFP:	Perform **neurological examination** focusing on motor power and reflexes. Differentiate **flaccid vs spastic paralysis** clinically. Collect **stool specimens for virological analysis**. Monitor respiratory function (risk of diaphragmatic involvement in GBS/polio). Counsel family regarding prognosis and	Act promptly in suspected polio cases (public health importance). Communicate clearly with parents about infectious vs non-infectious causes. Show empathy and reassurance for long-term disability risk. Maintain confidentiality and ethical reporting	Pediatric ward OPD Community surveillance program	MCQs SEQs Viva voce

			Asymmetrical vs symmetrical weakness Flaccidity vs spasticity Reflexes status Recognize **red flags for polio**. Outline **diagnostic approach**: Stool sample for poliovirus Nerve conduction studies (for GBS) MRI if myelitis suspected Discuss **management principles**: Supportive care Rehabilitation	supportive care.	(surveillance). Promote immunization and public health awareness.		

			IVIG for GBS if indicated Infection control Explain the role of **AFP surveillance** in polio eradication programs. □ Describe **prevention strategies** (OPV/IPV immunization).				
12		Rheumatic fever, congestive cardiac failure	Define rheumatic fever and its epidemiology. Identify the **etiology** (post-group A streptococcal pharyngitis). Describe **pathophysiology** (autoimmune response → inflammation of heart, joints, CNS). List **major and minor manifestations**	Perform **cardiac and joint examination** to identify RF manifestations. Recognize signs of **carditis** (murmur, heart enlargement). Interpret **lab tests** (ASO	Emphasize early diagnosis and treatment of streptococcal infections. Demonstrate empathy for children with chronic RF complications. Promote preventive healthcare	Pediatric OPD Pediatric ward Cardiology clinic	MCQs, SEQs, OSCE (cardiac/joint exam), Case discussion, Viva

			according to **Jones criteria**: Major: carditis, arthritis, chorea, erythema marginatum, subcutaneous nodules Minor: fever, arthralgia, raised ESR/CRP, prolonged PR interval Identify **laboratory findings** (ASO titer, CRP, ESR). Describe **diagnostic criteria** (Jones criteria, modified). Outline **management principles**: Anti-inflammatory (aspirin, steroids if severe)	titer, ESR, CRP). Monitor for **progression or complications**. □ Counsel patients and family on **adherence to prophylaxis**.	and awareness. □ Encourage adherence to secondary prophylaxis.		

			Antibiotics (penicillin) Supportive care Explain **prevention**: primary (treat streptococcal infections) and secondary (long-term prophylaxis). Recognize **complications** (chronic rheumatic heart disease, valvular lesions).				
13		Infective endocarditis hypotension	Understand the pathophysiology of infective endocarditis (IE) and the mechanisms leading to hypotension, including septic shock, severe valvular dysfunction, and heart failure. Identify the common causative	Perform focused cardiovascular and systemic examination in patients with suspected IE and hypotension. Interpret diagnostic tests and investigation	Demonstrate timely recognition and escalation of critically ill patients. Exhibit effective communication and teamwork with multidisciplinary teams,	Hospital ward, intensive care unit, outpatient clinic, emergency department, and perioperative setting if surgical intervention is required.	Case-based discussions, problem-based learning sessions, viva voce, OSCE, direct observation of clinical skills, mini-CEX, multiple-choice

			organisms of IE and risk factors that predispose patients to hypotension in this condition. Recognize the clinical features of IE complicated by hypotension, including signs of sepsis, low perfusion, pulmonary edema, and multi-organ dysfunction. Interpret relevant investigations, such as blood cultures, echocardiography, ECG, and laboratory tests, to assess severity and underlying causes of hypotension. □ Understand complications, prognosis, and treatment principles, including	s to guide management decisions. Initiate immediate management for hypotension in IE, including fluid resuscitation, vasopressor support, oxygen therapy, and empiric intravenous antibiotics. Recognize indications for urgent ICU transfer or surgical intervention (e.g., valve replacement) in critically ill patients. □ Monitor patient response to	including cardiology, infectious disease, and critical care units. Counsel patients and families regarding disease severity, treatment plan, and prognosis. □ Maintain professional, ethical, and empathetic care in the management of severe infections.		questions, short-answer questions, and simulation exercises.

			hemodynamic support and antibiotic therapy.	treatment and adjust therapy as needed.			
14		URI Uro-Obstructive disorder	Understand the pathophysiology of urinary tract infections and how obstructive uropathy (e.g., stones, benign prostatic hyperplasia, strictures, tumors) predisposes to infection. Identify common causative organisms and risk factors for complicated UTI in patients with urinary obstruction. Recognize the clinical features of UTI with obstruction, including dysuria, frequency, flank pain, fever, hypotension (in	Perform a focused abdominal, flank, and genitourinary examination in patients with suspected UTI and obstruction. Collect urine samples aseptically and interpret laboratory results. Initiate prompt management, including fluid therapy, appropriate antibiotics, analgesia, and supportive care.	Demonstrate timely recognition and escalation of critically ill patients with UTI and obstruction. Collaborate effectively with multidisciplinary teams, including urologists, nephrologists, and nursing staff. Counsel patients and families regarding disease, treatment plan,	Hospital ward, outpatient clinic, intensive care unit (for severe sepsis), emergency department, urology units, and community follow-up.	Case-based discussions, problem-based learning sessions, OSCE, viva voce, direct observation of clinical skills, mini-CEX, multiple-choice questions, short-answer questions, and simulation exercises.

			severe cases), and signs of pyelonephritis or sepsis. Interpret relevant investigations, including urinalysis, urine culture, blood tests (CBC, renal function), and imaging studies (ultrasound, CT urography) to detect obstruction and assess severity. Understand the potential complications and prognosis, including acute kidney injury, hydronephrosis, sepsis, and renal abscess.	Recognize indications for urgent intervention, such as surgical relief of obstruction (stenting, nephrostomy, or stone removal). Monitor patients for response to therapy and identify early signs of complications.	preventive measures, and follow-up care. Maintain professional and ethical behavior, particularly when performing procedures or discussing prognosis.		
15		AKI / CKD / PBL	Understand the pathophysiology, etiology, and differences between AKI and CKD, including prerenal, renal, and	Perform a focused history and physical examination in patients with	Demonstrate timely recognition and escalation of critically ill patients	Hospital ward, intensive care unit, outpatient clinic, dialysis unit, emergency	Case-based discussions, problem-based learning sessions, viva voce,

			postrenal causes of AKI and common causes of CKD such as diabetes, hypertension, and glomerulonephritis. Identify the clinical features of AKI and CKD, including oliguria/anuria, edema, hypertension, uremic symptoms, and electrolyte disturbances. Interpret relevant investigations, including renal function tests (creatinine, urea), electrolytes, urinalysis, and imaging (ultrasound) to determine severity and underlying cause. Understand complications and prognosis,	suspected AKI or CKD. Interpret laboratory and imaging results to determine stage, severity, and underlying cause. Initiate immediate management for AKI, including fluid resuscitation, electrolyte correction, and monitoring of urine output. Counsel patients regarding CKD management, including diet, lifestyle modification	with AKI or CKD complications. Collaborate effectively in multidisciplinary teams, including nephrologists, dietitians, and nursing staff. Provide patient-centered counseling with empathy, explaining disease, prognosis, and lifestyle adjustments. □ Maintain professionalism, confidentiality, and ethical standards,	department, and community follow-up.	OSCE, direct observation of clinical skills, mini-CEX, short-answer questions, multiple-choice questions, and simulation exercises.

			including fluid overload, hyperkalemia, metabolic acidosis, cardiovascular risks, and anemia. □ Comprehend management principles, including supportive care, fluid and electrolyte management, dialysis indications, and prevention of CKD progression.	s, medication adherence, and follow-up. □ Recognize indications for dialysis and coordinate care with the nephrology team.	especially in end-stage renal disease management.		
16		Asthma / bronchiolitis	Understand the pathophysiology, etiology, and risk factors of asthma and bronchiolitis, including airway inflammation, bronchospasm, and triggers. Identify clinical features of asthma (wheezing, dyspnea, cough, chest tightness)	Perform a focused respiratory and systemic examination in children and adults with suspected asthma or bronchiolitis. Assess severity using clinical	Demonstrate timely recognition and escalation of severe or critically ill patients. Communicate effectively with patients and caregivers	Outpatient clinic, hospital ward, pediatric emergency unit, intensive care unit (for severe cases), community settings for education and follow-up.	Case-based discussions, problem-based learning sessions, OSCE, viva voce, direct observation of clinical skills, mini-CEX, multiple-choice

			and bronchiolitis (wheezing, tachypnea, nasal flaring, feeding difficulties in infants). Recognize signs of severe disease and complications, such as respiratory failure, hypoxemia, or status asthmaticus. Interpret relevant investigations: pulse oximetry, arterial blood gases, chest X-ray, spirometry (in asthma), and viral studies (in bronchiolitis). Understand management principles, including pharmacological therapy (bronchodilators, corticosteroids), oxygen therapy, supportive care,	scoring systems (e.g., respiratory distress score, PEFR in asthma). Administer and demonstrate correct use of inhalers, nebulizers, and oxygen therapy. Initiate emergency management in severe cases, including high-flow oxygen, bronchodilators, corticosteroids, and airway support if required. Monitor patient response and	regarding disease, trigger avoidance, medication use, and follow-up care. Exhibit empathy and professionalism, particularly when managing pediatric patients. Work collaboratively with a multidisciplinary team, including pediatricians, respiratory therapists, and nurses.		questions, short-answer questions, and simulation exercises.

			and preventive strategies.	recognize early deterioration requiring escalation of care.			
17		TB & Pleural effusion	Understand the pathophysiology, etiology, and risk factors of tuberculosis and its pleural involvement leading to effusion. Identify the clinical features of pleural TB, including fever, cough, pleuritic chest pain, dyspnea, and systemic symptoms such as weight loss and night sweats. Recognize complications such as empyema, fibrothorax, and respiratory compromise.	Perform focused respiratory and systemic examination to detect signs of pleural effusion and TB. Collect and interpret pleural fluid samples safely and aseptically. Identify indications for pleural fluid aspiration or chest tube insertion. Initiate and monitor anti-tubercular	Demonstrate timely recognition and escalation of critically ill patients with pleural effusion. Communicate effectively with patients and families regarding diagnosis, treatment plan, adherence to therapy, and preventive measures. Exhibit empathy,	Hospital ward, outpatient clinic, emergency department, radiology and lab units, community follow-up for TB control programs.	Case-based discussions, problem-based learning sessions, OSCE, viva voce, direct observation of clinical skills, mini-CEX, multiple-choice questions, short-answer questions, and simulation exercises.

			Interpret relevant investigations: chest X-ray, ultrasound, pleural fluid analysis (biochemistry, cytology, ADA levels), microbiology (AFB staining, culture, PCR), and relevant blood tests. Understand the principles of management, including anti-tubercular therapy, drainage of effusion when indicated, and monitoring for treatment response and drug toxicity.	therapy according to national or WHO guidelines. Recognize complications and deterioration that require urgent intervention or referral.	professionalism, and cultural sensitivity while counseling patients. Collaborate with multidisciplinary teams, including pulmonologists, infectious disease specialists, and nursing staff.		
18		Hypothyroidism cretinism ambiguous genetalia (PBL)	Understand the pathophysiology, etiology, and risk factors of congenital and acquired hypothyroidism, including maternal	Perform focused history and examination to detect signs of hypothyroidism,	Demonstrate sensitivity and empathy while managing children and families	Neonatal and pediatric ward, outpatient clinics, endocrine units, laboratory and imaging	Case-based discussions, problem-based learning sessions, OSCE, viva voce, direct

			iodine deficiency and thyroid dysgenesis. Recognize the clinical features of hypothyroidism in children and adults, including growth retardation, developmental delay, lethargy, constipation, and myxedema. Understand the pathophysiology and clinical features of cretinism, including stunted growth, intellectual disability, coarse facial features, and delayed milestones. Identify causes of ambiguous genitalia, including disorders of sex development (DSD), congenital adrenal hyperplasia,	cretinism, and ambiguous genitalia, including growth parameters and developmental assessment. Order and interpret appropriate laboratory and imaging investigations to confirm diagnosis and guide management. Initiate thyroid hormone replacement therapy and monitor response in hypothyroid patients. Identify indications	with endocrine disorders and ambiguous genitalia. Maintain professionalism and confidentiality, particularly in disorders of sex development. Collaborate effectively with multidisciplinary teams, including pediatric endocrinologists, geneticists, surgeons, and psychologists. Show commitmen	departments, community screening programs, and multidisciplinary care settings.	observation of clinical skills, mini-CEX, multiple-choice questions, short-answer questions, and simulation exercises.

			androgen insensitivity syndrome, and chromosomal abnormalities. Interpret investigations, including thyroid function tests, newborn screening, karyotyping, hormonal assays (17-hydroxyprogesterone, cortisol, testosterone, estradiol), and imaging (ultrasound of genitalia, pelvic imaging). Understand principles of management, including thyroid hormone replacement, hormonal therapy, surgical correction if indicated, and	for endocrinology or surgical referral in cases of ambiguous genitalia. Provide patient and family education on long-term management, follow-up, and psychosocial support.	t to preventive strategies, such as neonatal screening programs and iodine supplementation.		

			multidisciplinary care.				
19		Nutritional anemia, bleeding disorders (CBD)	Understand the pathophysiology, etiology, and classification of nutritional anemias (iron deficiency, vitamin B12 deficiency, folate deficiency) and common inherited or acquired bleeding disorders (e.g., hemophilia, von Willebrand disease, platelet disorders, vitamin K deficiency). Identify clinical features of nutritional anemia, such as pallor, fatigue, tachycardia, and developmental delay in children. Recognize signs of bleeding disorders, including easy bruising, mucosal bleeding,	Perform a focused history and physical examination to detect anemia and bleeding tendencies. Collect and interpret blood samples safely for hematological and coagulation investigations. Initiate management of nutritional anemia with appropriate supplementation (iron, vitamin B12, folate). Recognize urgent	Demonstrate timely recognition and escalation of patients with severe anemia or life-threatening bleeding. Communicate effectively and empathetically with patients and families about chronic management and potential complications. Exhibit professionalism, ethical care, and	Hospital ward, outpatient clinic, emergency department, laboratory, community health programs, and pediatric or hematology follow-up clinics.	Case-based discussion sessions, problem-based learning, OSCE, viva voce, direct observation of clinical skills, mini-CEX, multiple-choice questions, short-answer questions, and simulation exercises.

			prolonged bleeding after trauma or surgery, and hemarthroses. Interpret laboratory investigations, including complete blood count, peripheral smear, serum iron studies, vitamin B12/folate levels, coagulation profile (PT, aPTT, INR), platelet function tests, and specific factor assays. Understand complications, prognosis, and management principles, including nutritional supplementation, specific factor replacement therapy, and supportive care.	indications for intervention in bleeding disorders, such as factor replacement, platelet transfusion, or vitamin K administration. Educate patients and families regarding disease management, dietary measures, and preventive strategies.	attention to cultural considerations in nutritional counseling and genetic counseling. □ Collaborate effectively with multidisciplinary teams, including hematologists, dietitians, and nursing staff.		

20		Lymphoma / Leukemia	Understand the pathophysiology, etiology, and classification of lymphomas (Hodgkin and Non-Hodgkin) and leukemias (acute and chronic). Identify risk factors, genetic predispositions, and environmental influences contributing to hematologic malignancies. Recognize clinical features, including lymphadenopathy, hepatosplenomegaly, pallor, fever, weight loss, night sweats, bleeding tendencies, and recurrent infections. Interpret laboratory and diagnostic investigations, including complete blood count,	Perform a focused history and physical examination to detect hematologic malignancy signs. Collect and handle blood, bone marrow, and lymph node biopsy samples safely and appropriately. Interpret laboratory and imaging results to establish diagnosis, staging, and treatment planning. Recognize indications for urgent intervention	Demonstrate timely recognition and escalation of critically ill patients. Communicate effectively and empathetically with patients and families regarding diagnosis, prognosis, and treatment options. Collaborate with multidisciplinary teams, including hematologists, oncologists, nurses, and psychosocia	Hospital ward, outpatient clinic, hematology/oncology units, laboratory and imaging departments, and community follow-up programs.	Case-based discussions, problem-based learning sessions, OSCE, viva voce, direct observation of clinical skills, mini-CEX, multiple-choice questions, short-answer questions, and simulation exercises.

			peripheral smear, bone marrow examination, immunophenotyping, cytogenetics, imaging (CT, PET-CT), and relevant serology. Understand staging systems (Ann Arbor for lymphoma, FAB/WHO for leukemia), prognosis, and principles of management, including chemotherapy, radiotherapy, hematopoietic stem cell transplantation, and supportive care.	in acute leukemia (e.g., hyperleukocytosis, tumor lysis syndrome) and lymphoma emergencies (e.g., superior vena cava syndrome). □ Counsel patients and families regarding disease, treatment options, potential complications, and long-term follow-up.	l support staff. Maintain professionalism, ethical standards, and cultural sensitivity in the management of hematologic malignancies.		
21		Procedures (LP, Ascitic tap, pleural tap, exchange transfusion, PD) observed and	Understand the **indications, contraindications, and complications** of each procedure:	Observe the proper **preparation of equipment and patient**	Demonstrate **respect, professionalism, and empathy** while	Hospital wards, emergency department, intensive care unit, neonatal	Direct observation of procedural skills (DOPS),

		learn with on call team	Lumbar Puncture: diagnosis of meningitis, intracranial pressure measurement, therapeutic CSF drainage. Ascitic Tap (Paracentesis): diagnosis of ascites etiology, therapeutic relief. Pleural Tap (Thoracentesis): diagnostic evaluation of pleural effusion, therapeutic drainage. Exchange Transfusion: management of severe neonatal hyperbilirubinemia or hemolytic disease.	**positioning** for each procedure. Learn and understand **sterile technique, local anesthesia, and stepwise procedural steps** under supervision. Recognize **real-time monitoring of patient response** during and after the procedure. Document procedural details accurately in patient records, including indications, findings, and post-	performing or observing procedures on patients, especially children and critically ill patients. Maintain **confidentiality, consent, and ethical standards** before and during procedures. Communicate effectively with the on-call team, nurses, and patients' families. □ Show willingness to **learn actively from observation** and ask	unit, procedure rooms, and bedside patient care settings.	mini-CEX, case-based discussion, reflective logs, OSCE stations on procedural steps, viva voce questions on indications, contraindications, and complications.

			Peritoneal Dialysis: management of acute or chronic kidney failure. Know the **anatomical landmarks, aseptic technique, and safety precautions** for each procedure. Recognize **potential complications** and their early signs: infection, bleeding, hypotension, pneumothorax, neurological injury, electrolyte imbalance.	procedure monitoring.	relevant questions appropriately.		
22		Epilepsy, seizures disorder	Understand the **pathophysiology, etiology, and classification** of seizures and epilepsy (generalized, focal, and special syndromes).	Take a **focused history** including seizure type, frequency, triggers, and family history.	Demonstrate **timely recognition and escalation** of patients with ongoing seizures or	Outpatient clinics, hospital wards, emergency department, intensive care unit, and community	Case-based discussions, problem-based learning sessions, OSCE, viva voce, direct observation

			Recognize **provoking factors** (infection, metabolic disturbances, trauma, drugs) and **differentiating epileptic seizures from non-epileptic events** (e.g., syncope, psychogenic seizures). Identify **clinical features**: aura, motor phenomena, loss of consciousness, postictal state, status epilepticus. Interpret **investigations**: EEG, MRI/CT of the brain, metabolic and genetic testing, and routine labs. Understand **management principles**: acute seizure control, long-term anti-	Perform a **neurological and systemic examination** to detect underlying causes or complications. Recognize **emergency situations** (status epilepticus) and initiate immediate management (airway, oxygen, IV benzodiazepines, supportive care). Counsel patients and families regarding **medication adherence, seizure precautions,**	status epilepticus. Communicate **empathetically and non-judgmentally** with patients and families about epilepsy, dispelling myths and stigma. Work effectively in **multidisciplinary teams**, including neurology, psychiatry, nursing, and rehabilitation services. □ Maintain **professionalism, confidentia**	follow-up programs.	of clinical skills, mini-CEX, multiple-choice questions, short-answer questions, and simulation exercises.

			epileptic therapy, lifestyle modification, and seizure precautions. □ Recognize **complications**: status epilepticus, injury during seizures, cognitive impairment, psychosocial impact.	**and lifestyle adjustments**. □ Monitor treatment response and adjust therapy under supervision.	**lity, and ethical care** when managing chronic neurological disorders.		
23		Developmental delay developmental assessment	Understand the **definition, classification, and causes** of developmental delay, including global developmental delay, isolated delays (motor, speech, cognitive), genetic syndromes, metabolic disorders, perinatal complications, and environmental factors. Recognize **red flags for delayed**	Take a **focused developmental history** from parents/caregivers, including perinatal history, milestone attainment, and family/social history. Perform a **systematic developmental**	Demonstrate **sensitivity and empathy** while interacting with children and their families. Maintain professionalism, patience, and cultural competence in counseling	Pediatric outpatient clinic, hospital wards, neonatal follow-up clinics, rehabilitation centers, community health programs, and early childhood development programs.	Case-based discussions, problem-based learning sessions, OSCE, viva voce, direct observation of clinical skills, mini-CEX, multiple-choice questions, short-answer questions, and

			milestones across domains: gross motor, fine motor, language, social, and cognitive development. Understand the principles and tools of **developmental assessment**, including standardized screening instruments (e.g., Denver II, Bayley Scales) and observational assessment. Identify **differential diagnoses** and comorbidities, such as cerebral palsy, intellectual disability, autism spectrum disorder, hearing or visual impairment, and chronic medical conditions.	**assessment** using clinical observation and standardized tools. Screen for **associated medical conditions** and identify children requiring referral for further investigation. Counsel caregivers on **developmentally appropriate stimulation, early intervention, and preventive strategies**. Document developmental progress accurately	and education. Collaborate effectively with **multidisciplinary teams**, including pediatricians, physiotherapists, occupational therapists, speech therapists, psychologists, and educators. Promote **early recognition, timely referral, and preventive strategies** to optimize developmental outcomes.		developmental assessment simulations.

			□ Understand **management principles**, including early intervention, rehabilitation, parental counseling, and multidisciplinary follow-up.	and track over time.			

Reference Books

Recommended resources:

1. Basics of Pediatrics by Pervez Akbar Khan- Revised 10th edition.
2. Nelson essentials of Pediatrics- 9th edition.
3. Nelson textbook of pediatrics-21st edition.
4. Pediatric board study guide- 2nd edition.
5. Gomella NEONATOLOGY-6th edition.
6. Textbook of neonatal resuscitation American academy of pediatrics-8th edition.
7. Bedside techniques, methods of clinical examination-5th edition.
8. Macleod's clinical examination-14th edition.
9. Examination pediatrics by Wayne Harris.

RMU MBBS PAEDIATRICS CLERKSHIP HOURS

Subject/Year	Teaching hours
First Year MBBS	2
Second Year MBBS	4
Third Year MBBS	17
Fourth Year MBBS	10
Final years	236
Total Hours	**269**

FINAL YEAR MBBS PEDIATRIC CLERKSHIP HOURS

Schedule	Schedule duration (4 weeks)	Total Hours
Morning meeting	0.5 hours x 35	11.5 hours
LGIS	1 x 23	23 hours
Bedside Clerkship	2.5 x 23	57.5 hours
Small Group Discussion	2 x 23	46 hours
Shadowing Internship	4 hours/6days a week	92 hours
Module Assessment day	6 hours	6 hours
		236 hours

Section
Assessment

Assessment Policy

This policy is applicable to all the students of the MBBS program of RMU for all modes of teaching (on campus/online/any other) from the date of approval by the RMUAcademic Council.

1. Guiding principles

- RMU has the responsibility to ensure to all the stakeholders that students have achieved the identified outcomes of the medical degree course.
- Assessment requires a variety of methods; no single method can completely ensure that the requisite competence level has been achieved. Hence each assessmentinstrument must be selected based on its utility index.
- Feedback, ensuring that the feedback loop is closed, should be provided to students following all assessments to ensure that students identify gaps in their learning andfaculty can review future curricular and assessment content.
- The quality of the entire assessment including confidentiality of the assessment process must be ensured.
- The assessment process should be clear and transparent so that students know in advance the expectations (from students) and consequences of the assessment.
- Details of the conduct of examinations are available in the Examination policy document.
-

2. Purposes of assessment

- Feedback to students regarding their readiness and deficiencies.
- To ensure appropriate competence has been achieved.
- Feedback to faculty to evaluate the effectiveness of the teaching program.

Table of Specification of Assessment Final year MBBS

Preamble

The Table of Specifications (TOS) is a detailed framework that describes how assessment items are distributed in terms of content among modules in our prestigious medical university's curriculum. The TOS was created with great care to ensure that educational objectives, instructional content, and evaluation criteria are all in line with one other. This allows us to guarantee the validity, integrity, and reliability of assessments while supporting our students' overall growth. This paper offers clarity and transparency by outlining the cognitive levels, domains, and weightings of assessment items. This helps faculty members create tests that appropriately measure students' understanding of critical competencies and knowledge areas. The TOS, which is based on pedagogical ideas and evidence-based practices, symbolizes our dedication to provide our graduates with the necessary skills, knowledge, and professionalism in medical education to achieve success in their chosen industries and contribute significantly to the medical community and society at large.

Rawalpindi Medical University, Rawalpindi
Department of Pediatric Medicine

Table of Specification Module Assessment MBBS Final Year

Component		Marks each item	Marks	Time allocated
\Theory (20%)	20 MCQs	1	20	30
Psychomotor assessment (80%)	4 Short cases	7	28	20
	3 Long Case (History, Examination, Viva)	7	21	15
	1 BLS/NRP	5	5	5
	3 Stations of OSPE	4	12	15
	Log Book	4	4	5
Total marks			**90 Marks**	**90 Minutes**

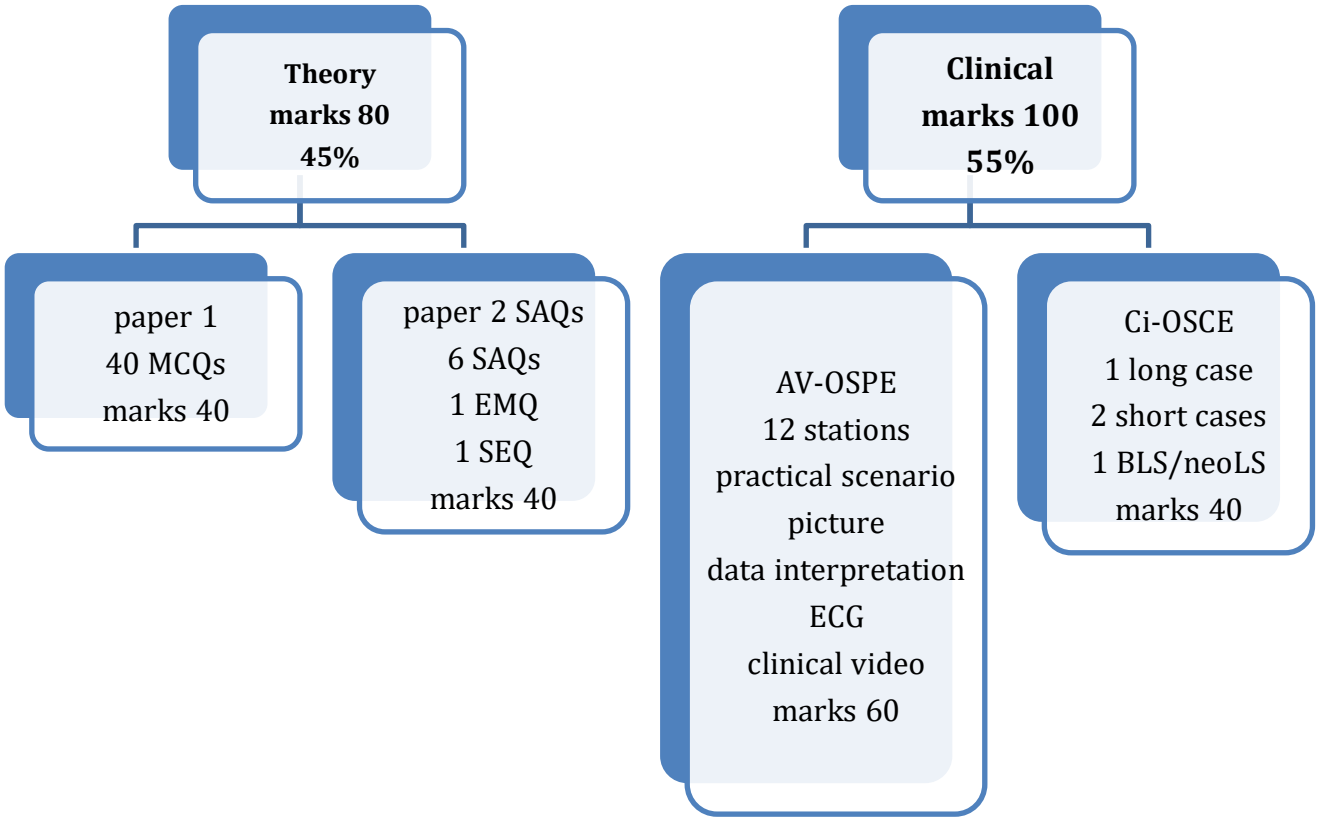
Total Stations = 12
Total Marks = 90
Total Time = 90 Minutes

Rawalpindi Medical University, Rawalpindi
Department of Pediatric Medicine
Table of Specification Module Assessment

S. No.	Domains of Assessment	Integration			Cognition	Weightage		
		CK	HI/VI	SI		CK	HI/VI	SI
1	Neonatology	5			C2 C3	25%		
2	Infectious Diseases	5			C2 C3	25%		
3	Gastroenterology	4	1		C2 C3	20%	5%	
4	Neurodevelopmental Pediatrics		2		C3		10%	
5	Genitourinary		1		C2		5%	
6	Cardiovascular			1	C2			5%
7	Endocrinology			1	C2			5%
		TOTAL				70%	20%	10%

Rawalpindi Medical University, Rawalpindi
Department of Pediatric Medicine

Table of Specification End block Assessment MBBS Final Year



Summary Of TOS

End block Assessment

Component	Details	Marks
Theory Papers	**Paper 1 MCQs** - 40 Multiple Choice Questions (MCQs) per paper **Paper 2 SAQs** 6 Short Essay Questions (SEQs) per paper 1 SEQs 1 EMQ	40 (22%) 40 (22%) Total: 80 marks (45%) Time Allocated: 100 min
Objective Structured Clinical Examination (CiOSCE)	**Long Case** - 1 Long Case - Duration: 15 minutes **Short Cases** - 2 Short Cases - Duration: 10 minutes each **BLS / NNR:** 5 Minutes	21 (12%) 14 (6%) 5 marks Total: 40 marks (22 %) Time allocated: 30 min
Audio-Visual Objective Structured Practical Examination (AV-OSPE)	- 12 slides presented - 5 minutes per slide - Each slide assesses clinical reasoning and decision-making	5 stems/ marks per slide Total: 60 marks (33%) Time allocated: 60 min
Assessment Criteria	- All sections must be completed to pass - Marks based on accuracy, clinical reasoning, and professional standards - Minimum passing grade required for each section	<80% attendance initially marks will be deducted to Half and later on they are not allowed to sit in block exam. Clinical 100 marks (55%) Theory 80 marks (45%) Total marks 180 Time: 190 minutes (3 hours)

TOS for Theory Paper 1 (MCQ)

End block Assessment

S. No.	Domain of Assessment	Integration			Cognition	Weightage		
		CK	Hl/VI	SI		CK	Hl/VI	SI
1	Infectious Diseases	10			C2 C3	25%		
2	Neonatology	10			C2 C3	25%		
3	Gastroenterology	8	2		C2 C3	20%	5%	
4	Neuro-developmental Pediatrics		4		C3		10%	
5	Renal System		2		C2		5%	
6	Cardiovascular			2	C2			5%
7	Endocrinology			2	C2			5%
		TOTAL				**70%**	**20%**	**10%**

TOS for SEQ/EMQ/SAQ

End block Assessment

Question no.	Question type	Domain of Assessment	Total Marks
1	SAQ	Neurology	5
2	SAQ	Infectious Diseases	5
3	SAQ	Cardiovascular	5
4	SAQ	Neonatology	5
5	SAQ	Gastroenterology	5
6	SAQ	Pulmonology	5
7	EMQ	Developmental Pediatrics	5
8	SEQ	Hematology	5

Rawalpindi Medical University, Rawalpindi
Department of Pediatric Medicine
Pre-Annual Assessment (Send up) Final Year MBBS Table of Specification

Stations (5 stems and 5 marks each)	Total 12 stations Total Marks 60
Clinical scenario (counselling/ethics)	1
Picture CT scan, X-ray, clinical picture Genetics, syndrome, procedure	6
ECG	1
Data interpretation	1
Videos Clinical signs	2
Video BLS/neoLS	1

Table Of Specifications Final Professional Exam

Component		Marks	
Theory 50%	30 MCQs	30	60
	4 SAQs	20	
	1 EMQ	5	
	1 SEQ	5	
Clinical 50%	4 Short cases	40	60
	1 BLS	10	
	Log book	10	
Total marks		**120**	

TOS FOR Theory

Pre-Annual Assessment (Send up) Total Marks 60

	Topic Distribution	MCQs-30	SAQs/ EMQ/ SEQ -6
1	Neonatology	3	1
2	Infectious Diseases	3	
3	Gastroenterology	3	1
4	Cardiology	3	
5	Nephrology	3	1
6	Neurology	3	
7	Pediatric Emergency/ Critical Care	3	1
8	Hematology/ Oncology	2	
9	Preventive Pediatrics/ Nutrition	2	1
10	Immunology/ Rheumatology/ Bone Disease	1	
11	Endocrinology	1	
12	Pulmonology	1	1
13	Developmental/ Genetics/ Metabolic	1	
14	Dermatology/ Psychiatry	1	
Total Marks		**30**	**30**

TOS for Clinical

Pre-Annual Assessment (Send up) Total Marks 60

Assessment	Number of stations	Topics		Marks Each Component	Total Marks
Short cases	04	GPE	1	10	40
		Respiratory	1	10	
		CVS	1	10	
		GIT	1	10	
		CNS			
BLS/NRP	01	Pediatric basic life support	1	10	10
Log book	01	Log book record of pediatric clerkship	1	10	10

Rawalpindi Medical University Rawalpindi
Final year MBBS Professional Pediatric Assessments

Table of Specification (TOS) of Pediatric exam

Preamble:

The Table of Specifications (TOS) is a detailed framework that describes how assessment items are distributed in terms of content in examination. The purpose of the TOS is to ensure that educational objectives, instructional content, and evaluation criteria are all in line with one other. This allows us to guarantee the validity, integrity, and reliability of assessments while supporting our students' overall growth. This paper describes structured mode of assessment by outlining the cognitive levels, domains, and weightings of assessment items.

Statutes:

1. **Schedule:** The Final Professional MBBS shall be held at the end of fifth year.

2. **Subjects:** Every candidate shall be required to study the following subjects in Pediatric block

a. **Core subjects-Pediatrics**
b. **Vertically integrated Subjects-** ENT, Eye, Integrated Pathology, Pharmacology & Community Medicine
c. **Horizontally Integrated Subjects-** Medicine, Surgery, Gynae & OBS
d. **Spirally Integrated subjects-** Research, family medicine, HEC General Cluster, ALPHA (Artificial Intelligence, Leadership, Professionalism, Humanities and Arts)
e. **General Cluster ALPHA** (Artificial Intelligence, Leadership, Professionalism, Humanities and Arts)

Final Professional Examination- 200 Marks

Pediatric Block Assessment (Pediatrics)- : 200 Marks (120+ CIA: 80)

3. **Continuous Internal Assessment (CIA):** Continuous Internal Assessment means the assessment based on continuous internal assessment (CIA) tests and assignments given to the students during an academic period. Pediatric assessment will have a CIA of 40%.

4. **Pediatric final Assessments**: Assessment will comprise of two Domains, "theory (Cognitive)" and "practical (Psychomotor)".

5.1. Domains

a. Cognitive domain: Theory/Written assessment
b. Psychomotor domain: Practical/ Performance assessment

5.2. Instructional strategies for assessment: Separate Instructional strategies will be used for cognitive and psychomotor domain, which includes the following

5.2.1. Cognitive Domain (Theory/written)

5.2.1.1. MCQs:

It will be single Best type of Multiple-Choice Questions (MCQs) with one stem & with five options. Integration ratio in multiple choice questions will be 70% core subject knowledge, 10% will be Horizontally integrated subjects, 10% Vertical &10% spiral Integration. Each MCQ will carry One Mark and Time allowed per MCQ will be 1 minute.

5.2.1.2. Short answer Questions (SAQs):

a. **SAQs:** Short essay questions serve as an effective tool for assessing students' comprehension, critical thinking, and formulate them in their own words. Each SEQ will carry 5 Marks and time allowed per SEQ will be 10 minutes.

5.2.2. Clinical (Psychomotor) Component:

There will be two components of clinical exam:

5.2.2.1 Objective structured clinical examination (OSCE)

This component includes 4 stations of audiovisual AVOSCE, one station for neonatal/pediatric basic life support and one for log book.

5.2.2.2 Long and short cases

This component consists of one long case and four short cases

6 **Examination Eligibility:**

Eligibility to appear in professional will be as per RMU Assessment Policy approved by the Academic Council and Syndicate.

7 **Passing Criteria:**

A student will be declared successful in a Final assessment if they score more than 50% separately in theory assessment, OSCE and short/long cases.

8.**Supplementary Examination Criteria:**

The student who is unsuccessful in a final professional Pediatric assessment will have to appear in the supplementary examination

SECTION I:

Marks Distribution of Continuous Internal Assessment (CIA)

Marks breakup of continuous internal assessment:

Breakup of marks for continuous internal assessment (40%) is given in the Table.

- Total Pediatric final Professional Examination Marks : **200**
- Continuous Internal Assessment (40%)marks = **80**
- Annual Marks: (60%) = **120**

Table I: Marks Distribution of Continuous Internal Assessment (CIA)

Blocks /Module	Subjects	Teaching hrs.	Total marks	Total marks
Pediatrics	Pediatrics	**236**	80 marks	80 Marks

Table 2: Original Distribution of Continuous Internal Assessment

Subjects	Teaching hrs	Marks in professional	Theory marks		Clinical					Internal Assessment	Total Marks
PEDIATRICS			**50**		**70**					80	200
	236	200	25	25	21	28	04	05	12		
Grand Total											**200**

SECTION II

Table of specifications of Annual MBBS Final professional Examinations

- Total Final Professional Marks: 200
- Continuous Internal Assessment (40%) 80 Marks
- Clinical & Theory Marks: (60%) =120 Marks

Table 1: Distribution of teaching hrs. & Marks for Final year MBBS

Block	Subjects	Teaching hrs.	Annual Exam 70%		CIA 40%	Total marks
			Theory 25 %	CLINICALS 35%		
PEDIATRICS	PEDIATRICS	236	50	70	80	200
	Total	236	50 marks	70 marks	80 marks	200 marks
GRAND TOTAL						200 Marks

Distribution of Marks of Final Professional MBBS (Pediatrics

Table of Specification Final Professional Exam

Subject	THEORY			CLINICALS		CIA	Total marks
	Component	No of Items	Marks	No of Items stations	Marks	Marks	
PEDIATRIC **Total marks with CIA** **Annual Exam (Theory + Clinical) 50 + 70 120 marks + CIA 80 marks**	**Paper I** MCQ **Paper II** SAQ/SEQ/EMQ	25 5	25 (1 x 25) 25 (5 x 5)	Long Case 03 Short Cases 04 BLS 01 Log Books 01 OSCE 3	21(3x7) 28 (4x7) 05 04 12(3x4)	End Block 12.5 Ward Test 27 Evening Attendance 4 Work books 3.5 Case Presentation 10 CPC 3 LMS 20	
			50		**70**	**80**	
Total Annual +CIA 120+80 200	**Total Marks**		**50 (25%)**	**Total Marks**	**70 (35%)**	**80 (40%**	**200**

	Component		Marks	Total marks
Theory	Paper 1	25 MCQs	25	50
	Paper 2	3 SAQs 1 SEQ 1 EMQ	25	
Clinical	OSCE	1 Long case (3 stations)	21	70
		4 Short cases	28	
		1 BLS	5	
		Log book	4	
	Av-OSPE	Av-OSCE	12	
Internal assessment 40 %		End Block Ward Test Evening Attendance Work books Case Presentation CPC LMS	12.5 27 4 3.5 10 3 20	80
Total marks		**200**		

TOS for Clinical

Final Professional Exam

Assessment		Number of stations	Topics
Long case		3	History taking ,Examination and viva
Short cases		04	GPE, respiratory, CVS, GIT, CNS
OSCE	Log book	01	Log book record of pediatric clerkship
	BLS/NRP	01	Pediatric basic life support
	Av-OSCE	03	Picture, pedigree, X-ray, ECG, Data interpretation, clinical scenario

Table of specification

Final Professional Exam(Theory Component)

	Topic Distribution	MCQs-25	SAQs-5	SEQ-1	EMQ-1
1	Neonatology	3	1	1	1
2	Infectious Disease	3	1		
3	Gastroenterology	3	1		
4	Cardiology	2			
5	Nephrology	2			
6	Neurology	2			
7	Pulmonology	2			
8	Endocrinology	1			
9	Hematology/ Oncology	1			
10	Preventive Pediatrics/ Nutrition	1			

11	Immunology/ Rheumatology/ Bone Disease	1			
12	Pediatric Emergency/ Critical Care	2			
13	Developmental/ Genetics/ Metabolic	1			
14	Dermatology/ Psychiatry	1			
Total Marks: 70		**25**	**25**	**5**	**5**

Table Of Specification For Clinical Component

No.	Component	Station	Marks		Passing criteria
1	**Long case**	Long Case – History Taking	7	21	Total marks=70 Passing marks=49 (70%)
		Long Case – Examination	7		
		Long Case – Viva Voce	7		
2	**Short cases**	Short Case–GIT	7	28	
		Short Case – Respiratory	7		
		Short Case– CVS, CNS	7		
		Short Case– GPE	7		
3	**OSCE**	Work Book, Log Book	4	21	
		BLS/Neonatal Resuscitation	5		
		Av-OSCE (ECG/Instrument/ Lab Data/ Procedure)	4		
		Av-OSCE (X-Ray or CT Scan)	4		
		Av-OSCE (Picture/ Clinical Scenario)	4		
Total Marks			**70**		

Clinical Exam Cycle (Long and short cases)

Final Professional Exam

1 Long Case- History taking	**2** Long Case- Examination	**3** Long Case- Viva
7 Short Case- GPE	**Long and short cases** **Final Year MBBS**	**4** Short Case- GIT
6 Short Case- CVS/CNS	5 minutes/station 50 minutes' minimum cycle,can be increased with Rest Stations **Total Marks 49** Station 1-7= 7 numbers each station	**5** Short Case- Respiratory

Clinical Exam Cycle (OSCE)
Final Professional Exam

Station 8 **Log book/ work book**	**OSCE** **MBBS Final year**	**Station 9** **Neonatal resuscitation/** **Pediatric BLS**
Station 10 **Av-OSPE** **ECG/Instrument/ Lab Data/ Procedure**	5 minutes/station 20 minutes' minimum cycle,can be increased with Rest Stations Station **8-12** Station 8,10,11,12= 4 marks Station 9= 5 marks **Total marks 21**	**Station 11** **Av-OSPE** **X-Ray or CT Scan**
Station 12 **Av-OSCE** **Picture/ Clinical Station**		

Internal Assessment

(Table Of Specification)

Internal Assessment Details and marks distribution

Distribution	Marks	Total
Clerkship-Paediatric Unit (BBH or HFH) Wise Assessment (44.5 Marks) **A. Work place based (WBA)-55.625%** i. Case Presentation (12.5%) ii. Workbook (4.375%) iii.Evening Attendance (5 %) **B. Module exam 33.75%**	 **17.5** **10** **3.5** **4** **27**	 **44.5**
C.END Block Exam (16%)	**12.5**	**12.5**
CPC 3.75% Attended 96-100% 3 marks Attended 91-95% 2 Marks Attended 86-90% 1 Mark Less than 85 percent 0 mark	**3**	**3**
D. LMS 25% Marks 20		
Total		**80**
Unit/ward assessment will be rounded		

- There is no compensation for attendance for missed period(s) of clerkship. Remedial learning can only be used to make up for compensation of clerkship objectives not attendance.

Internal Assessment- 80 Marks

% Wise Breakup

Component	Marks	% of internal assessment
End Block Exam (EBE)	**12.5/80**	**16%**
Clerkship – unit/ward assessment-work place based (WBA) and Module exam assessment	**44.5/80**	**55.625%**
CPC	**3/80**	**3.75%**
LMS	**20/80**	**25%**
Total	**80**	**100%**

Important Note:

Once internal assessment is compiled it CANNOT be altered under ANY circumstance unless a clerical/ human error is detected. He will repeat classes and skillsThere will be no change in calculated internal assessment scores for Supplementary University examination.

Work based assessment (WBA) and Module exam

Marking Details in Paediatric Unit (17.5 + 27 =44.5 marks)

Work Place Based Assessment 17.5 Marks (29.15%)			Module exam 27 Marks (45%)
Case presentation	Clinical work book assessment (5 case write Ups on work book)	4 evening duties in ward/ER per month	Module exam 27 marks (45%)
1 Long Cases 12.5% 10 marks	4.375% 3.5 marks) 5 complete case write Ups) Yes 3.5 marks No <5-zero	5% (4 marks) 4/4 Evening marks 4 3/4 Evening marks 3 2/4 Evening marks 2 1/4 Evening marks 1	Av-OSPE (3 scenario, data interpretation, instruments, picture, Xray etc stations) 20 MCQs (clinical scenario based) OSCE 1 BLS / NRP station, 1 log book station, 4 Short Cases 1 Long Case (History taking, examination and viva) OSCE Short cases marks 4x7=32 Long Case 3x7= 24 BLS 5marks Logbook 4marks AV-OSPE station marks 3x4 = 12 MCQs (clinical scenario based = 20 Total Module exam Marks = 90 Obtained marks / total marks x 27 For Example Student A took 70/90 His ward test assessment according to the given formula will be 70/90x27= 21 out of 27

Final Professional Exam
Table of Specification of Clinicals

Station	Topic	Topic description	Learning Objectives	Marks %
1	**Long case (Marks =21)** **History taking**	RESPIRATORY SYSTEM Pneumonia,Bronchiolitis, Bronchial asthma,chronic cough, Tuberculosis, GASTRO-INTESTINAL SYSTEM Acute andchronic diarrhea, Celiac disease. ChronicLiver Disease (CLD).Wilson disease. NEUROLOGY Meningitis, Encephalitis,Cerebral Palsy ,Stroke ,Hydrocephalous . CARDIOLOGY Cyanotic and Acyanotic congenital heart disease Nephrology Renal Failur/Chronic Kidney Disease Nephrotic syndrome	Able to introduce himself and polite with the patient Able to take demographic details To make list of chief presenting complains Able to extractrelevant information Able to take vaccination, feeding, development, immunization, family and socio economic history Takes informedconsent Takes detailed history	**7**

2	**Examination**	Respiratory system, GIT and Nephrology,Neurology… (same as above)	Introduce yourself Takes informedconsent Uses correct clinical methods systemically including appropriate exposure . Able to pick clinical sign present in thepatient	**7**
3	**Discussion/viva-voce**	Respiratory system, GIT and Nephrology…… (same as above)	Presents skillfully Gives correctfindings Gives logical interpretation offindings anddifferential diagnosis Enumerate andjustify relevant investigation Outline thetreatment plan	**7**
4	**Short case and viva** **4 short cases station (4 x7= 28)**	GENERAL PHYSICAL EXAMINATION RESPIRATORY SYSTEM NEUROLOGY GASTROENTEROLOGY CARDIOLOGY	Perform proper and concerned relevant clinical examination according to instructions givenin professional manner Systematic and appropriate application of clinical methods Able to pick correct signs Logically interprets the clinical findings Justifies diagnosis Make an appropriate management plan	Marks Total = **28** (4x 7) **28**

5	**Logbook/workbook**	Complete logbook with all columns filled including dailytopic discussed, long case presented, morning report, procedures, investigations Complete workbook with fivehistories and morning reportschecked and signed		**4** marks
6	**BLS/ Neonatal resuscitation**	Performance of BLS /Neonatal resusitation steps onsimulator and related viva	Able to performBLS /Neonatal resusitation according torecent guidelines	**5** marks
7	**Av-OSPE Instruments 1 stations**	ETT, Ambu bag, LP needle, BMB needle, oropharyngeal airway, NG tube, Foleys catheter, IV cannulas, Central venous line, Laryngoscope, chest tube	Able to identify the instrument, describes indications, contraindications and complications	**4**marks

8	**Av-OSPE** **Xray/ Radiology** **1 station**	CXR of consolidation, pleural effusion, fibrosis, cavitation, cardiac failure, mediastinal andhilar lymphadenopathy	Able to identify findings, give diagnosis and differential diagnosis, enumerate complications and briefly describestreatment	**4**marks
7	**Av-OSPE** **Picture / scenarios** **1 stations**	Measles , mumps ,rubella varicella,etc…	Able to identify picture , give diagnosis and differential diagnosis, enumerate complications and briefly describestreatment	**4**marks

Research

Cultivating the culture of Research has always been envisioned as one of the main pillars of Rawalpindi Medical University, as a means to develop healthcare professionals capable of contributing to the development of their country and the world. For the purpose thereof, right from the inception of Rawalpindi Medical University, efforts were concentrated to establish a comprehensive framework for research in Rawalpindi Medical University, as a matter of prime importance. With team efforts of specialists in the field of research, framework was made during the first year of the RMU, for the development and promotion of Research activities in RMU, called the Research Model of RMU, giving clear scheme and plan for establishment of required components for not only promoting, facilitating and monitoring the research activities but also to promote entrepreneurship through research for future development of RMU itself.

Figure 30 – RMU Research Model

Biomedical Ethics

Ethical choices, both minor and major, confront us every day in the provision of health care for persons with diverse values living in a pluralistic and multicultural society.

Four commonly accepted principles of health care ethics, excerpted from Beauchamp and Childress (2008), include the:

1. Principle of respect for autonomy,
2. Principle of nonmaleficence,
3. Principle of beneficence, and
4. Principle of justice.

Family Medicine

Family Medicine is the primary care medical specialty concerned with provision of comprehensive health care to the individual and the family regardless of sex, age or type of problem. It is the specialty of breadth that integrates the biological, clinical and behavioural sciences. Family physicians can themselves provide care for the majority of conditions encountered in the ambulatory setting and integrate all necessary health care services.

Artificial Intelligence

Artificial intelligence in medicine is the use of machine learning models to search medical data and uncover insights to help improve health outcomes and patient experiences. Artificial intelligence (AI) is quickly becoming an integral part of modern healthcare. AI algorithms and other applications powered by AI are being used to support medical professionals in clinical settings and in ongoing research. Currently, the most common roles for AI in medical settings are clinical decision support and imaging analysis.

Section – V Learning Management System (LMS)

Vision

To enhance competency-based learning and clinical reasoning skills among Fourth-year medical students by leveraging a robust Learning Management System (LMS) to implement weekly, clinically-oriented assessments in Medicine and Allied specialties.

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.

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:

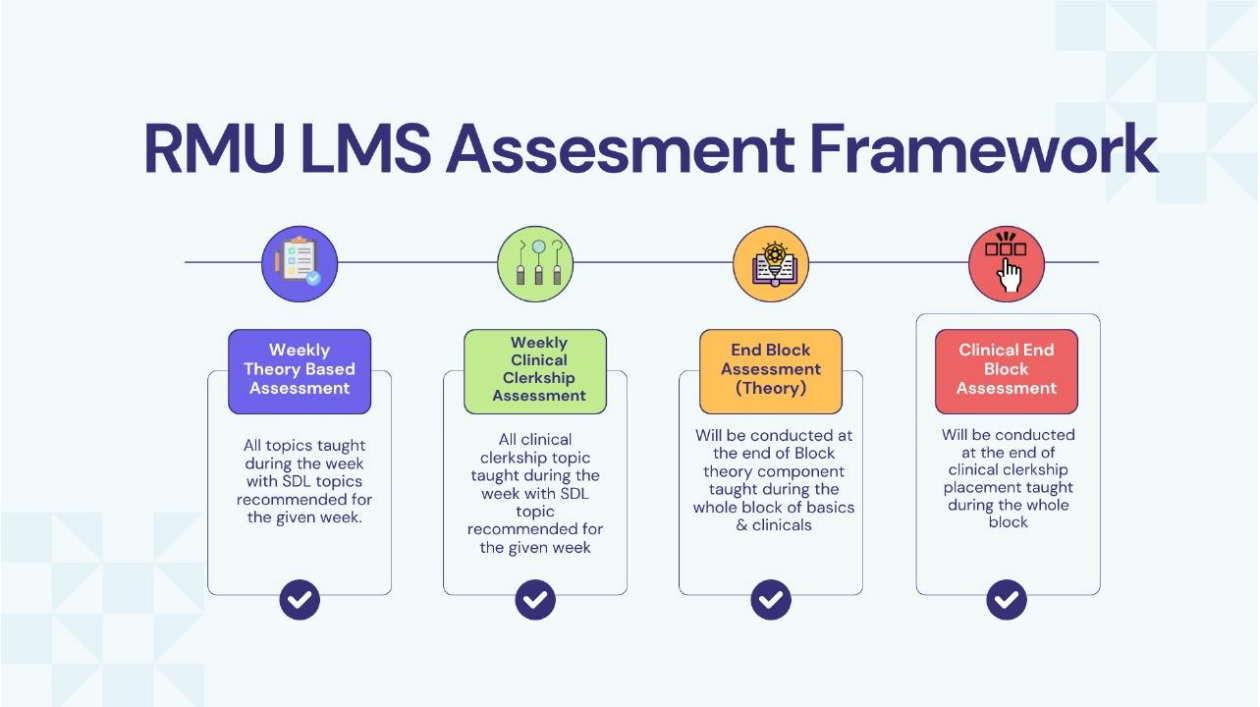


Figure 27: Framework for LMS Assessment for Undergraduate Medical Students

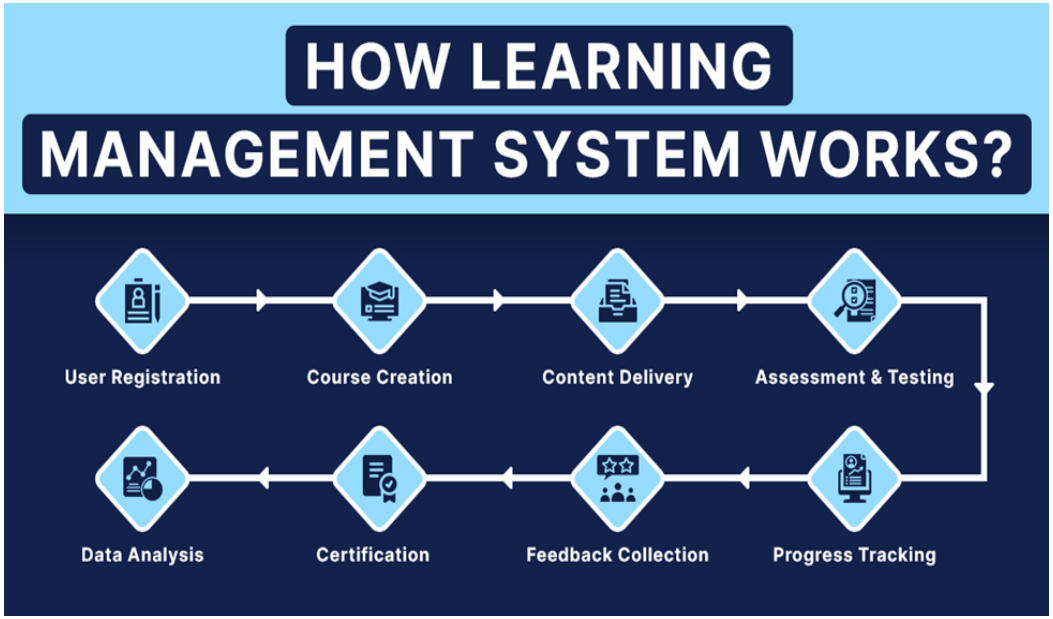


Figure 28: How learning management system works

Implementation of LMS

Table of Specification of weekly LMS of 3rd, 4th & Final Year MBBS

Table 1: Frequency of Assessments & Distribution of MCQs in LMS 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:

Sr. No	Type of Assessment	Calgary Model		
		Must Know (A)	Should know (B)	Nice to know (C) (C)
1.	Summative	50%		50%
2.	Summative	100%		----------

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

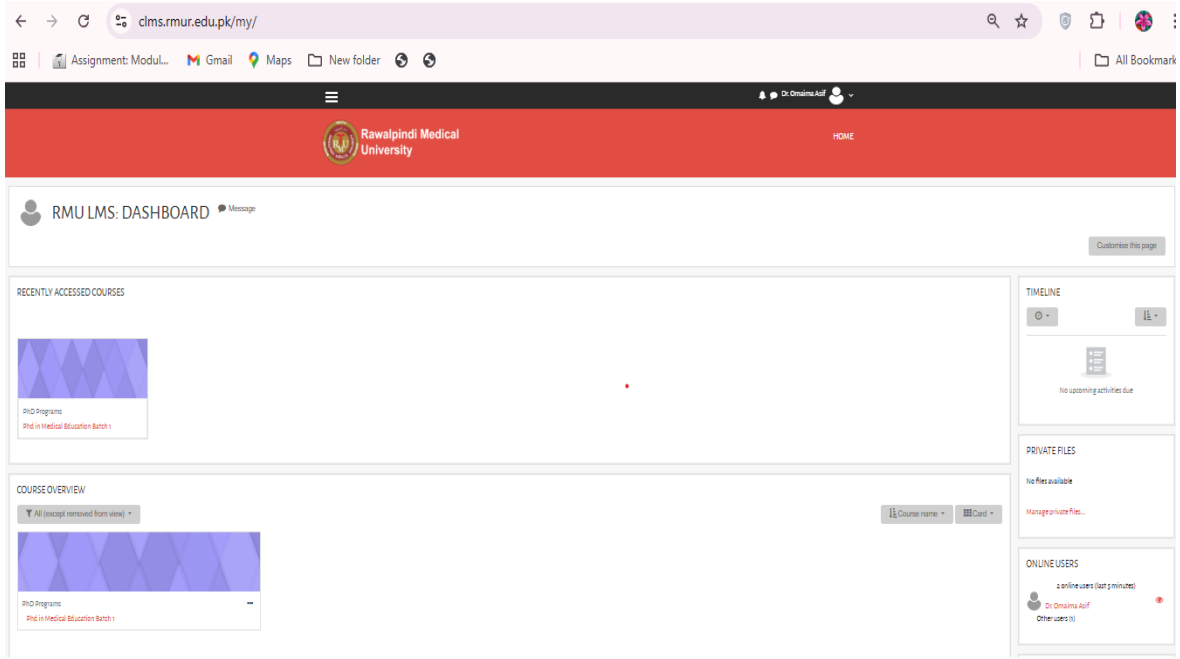
Objectives of a Learning Management System (LMS) for Undergraduate Medical Students

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/

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.

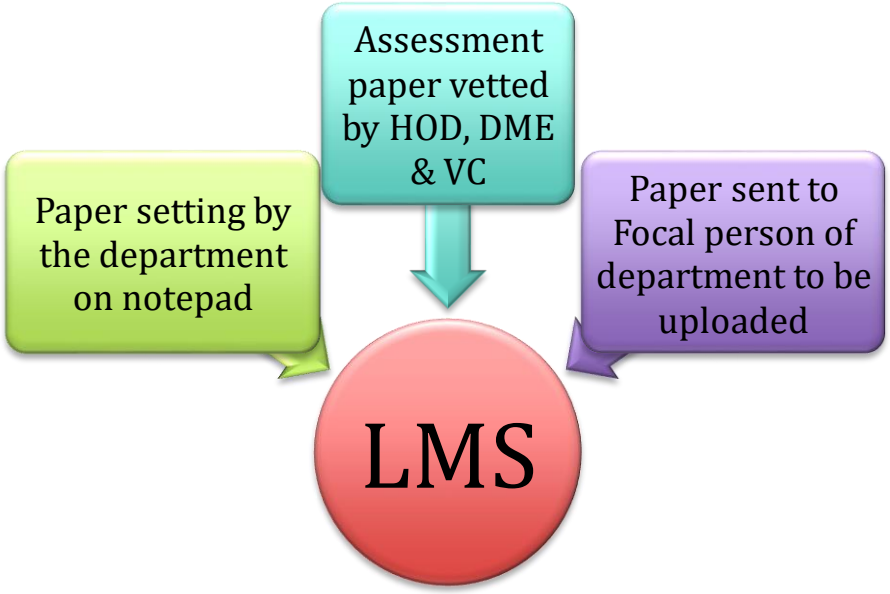
LMS as Part of CIA: What It Means for Students

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.

LMS Assessment Papers



Hierarchy of conducting LMS

Figure 29: LMS Assessment paper setting, vetting, uploading

Sample paper

Papers attached as Annexure

PATHOLOGY

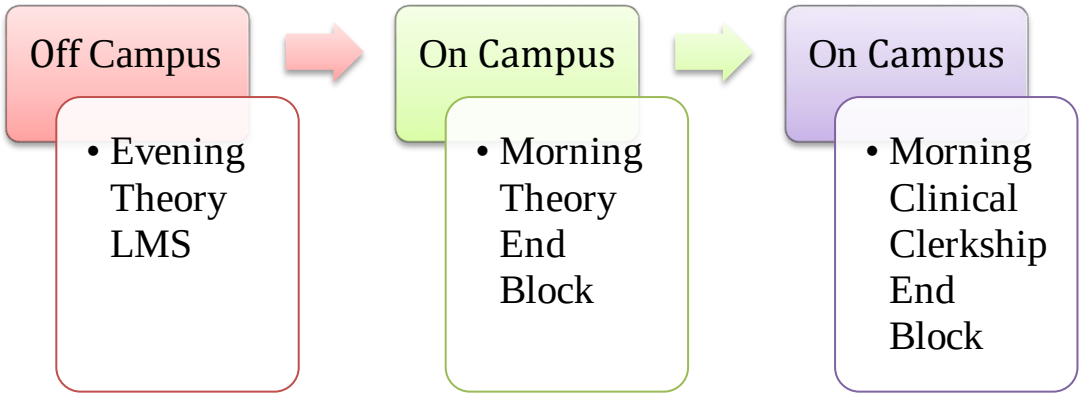
Q: A 7-year-old child develops fever and a vesicular rash that starts on the trunk and spreads to the face and limbs. What is the most likely causative agent?
A. Herpes Simplex Virus-1
B. Epstein-Barr Virus
C. Cytomegalovirus
D. Varicella-Zoster Virus
E. Parvovirus B19
ANSWER: D

Q: In immunocompromised patients, CMV most commonly causes which of the following complications?
A. Hemorrhagic cystitis
B. Retinitis and colitis
C. Meningitis
D. Skin rash and arthralgia
E. Hepatic abscess
ANSWER: B

Q: What is the characteristic histologic finding in tissues infected by cytomegalovirus?
A. Multinucleated giant cells with Cowdry type A inclusions
B. Intracytoplasmic eosinophilic inclusions
C. Owl's eye intranuclear inclusions
D. Councilman bodies
E. Granulomas with caseation
ANSWER: C

Q: A 68-year-old man presents with a painful vesicular rash in a dermatomal distribution. What is the most likely diagnosis?
A. Primary varicella infection
B. Herpes labialis
C. Cytomegalovirus infection
D. Herpes zoster (shingles)
E. Kaposi's sarcoma
ANSWER: D

Assessment Results of LMS MBBS



Theory Based Off Campus Module wise weekly LMS results

3rd Year MBBS (Off Campus Evening) LMS Assessment Results (Theory Based)

	Roll No.	Name	FM-II 1 (90)	% age	FM-II-2 (90	%age	FM-II-3 (90)	% age	FM -III 1 (90)	% age	FM -III wk 2	% age	FM-III Wk 3	% age	GIT wk 1	% age	GIT week 2	% age	GIT wk 3	% age	GIT week 4	% age	GIT wk 5	% age	microbes wk 1	% age
1	1	Aaira Amin	50	56%	81	90%	79	88%	87	97%	81	90%	77	86%	84	93%	90	90%	97	97%	94	94%	82	82%	80	80%
2	2	Abeera Asad	75	83%	79	88%	71	79%	84	93%	88	98%	77	86%	88	88%	94	94%	97	97%	97	97%	80	80%	85	85%
3	3	Adan Farrukh	80	89%	83	92%	0	0%	88	98%	90	100%	80	89%	86	86%	96	96%	96	96%	94	94%	82	82%	90	90%
4	4	Addan Fatima	78	87%	81	90%	85	94%	89	99%	89	99%	74	82%	87	87%	95	95%	97	97%	97	97%	85	85%	87	87%
5	5	Adden Fatima	77	86%	77	86%	78	87%	81	90%	79	88%	60	67%	83	83%	97	97%	95	95%	93	93%	77	77%	93	93%
6	6	Aena Rehman	21	23%	0	0%	79	88%	85	94%	86	96%	45	50%	86	86%	0	0%	96	96%	96	96%	53	53%	88	88%
7	7	Hafsa Sameen	77	86%	84	93%	78	87%	73	81%	87	97%	72	80%	90	90%	96	96%	95	95%	95	95%	84	84%	86	86%
8	8	Aima Ali	76	84%	82	91%	81	90%	88	98%	86	96%	78	87%	83	83%	96	96%	95	95%	96	96%	87	87%	91	91%
9	9	Aiman Imran	72	80%	85	94%	65	72%	0	0%		0%	70	78%	83	83%	96	96%	94	94%	97	97%	84	84%	86	86%
10	10	Aiman Sarfraz	21	23%	82	91%	77	86%	85	94%	89	99%	79	88%	85	85%	96	96%	95	95%	96	96%	87	87%	90	90%
11	11	Aimen Asif	76	84%	72	80%	82	91%	88	98%	85	94%	74	82%	88	88%	95	95%	97	97%	99	99%	83	83%	83	83%
12	12	Aimen Jamil	0	0%	85	94%	75	83%		99%		0%	77	86%	90	90%	98	98%	75	75%	95	95%	78	78%	89	89%
13	13	Aleena Abid	77	86%	81	90%	78	87%	89	0%	88	98%	81	90%	89	89%	93	93%	95	95%	97	97%	84	84%	90	90%
14	14	Aleesha Zafar	80	89%	81	90%	82	91%		0%	89	99%	76	84%	89	89%	96	96%	98	98%	96	96%	68	68%	90	90%
15	15	Alina Batool	76	84%	78	87%	81	90%	91	101%	86	96%	79	88%	88	88%	95	95%	95	95%	95	95%	82	82%	90	90%
16	16	Alisha Zeeshan	22	24%	83	92%	80	89%	87	97%	88	98%	71	79%	90	90%	93	93%	94	94%	99	99%	82	82%	88	88%
17	17	Alishba Naveed	75	83%	85	94%	83	92%	90	100%	92	102%	79	88%	88	88%	99	99%	96	96%	96	96%	84	84%	87	87%
18	18	Alishbaqq Sikandar	77	86%	79	88%	78	87%	88	98%	86	96%	75	83%	86	86%	95	95%	95	95%	96	96%	84	84%	91	91%
19	19	Aliza Tariq	76	84%	84	93%	80	89%	84	93%	90	100%	80	89%	84	84%	97	97%	97	97%	98	98%	84	84%	89	89%
20	20	Amal Abbas	77	86%	82	91%	80	89%	88	98%	85	94%	77	86%	91	91%	95	95%	95	95%	96	96%	84	84%	88	88%
21	21	Ameema Waheed	76	84%	66	73%	0	0%	84	93%	83	92%	76	84%	86	86%	74	74%	97	97%	98	98%	84	84%	86	86%
22	22	Amna .	81	90%	81	90%	79	88%	89	99%	86	96%	78	87%	82	82%	94	94%	95	95%	94	94%	82	82%	90	90%
23	23	Amna Asghar	74	82%	85	94%	80	89%	88	98%	87	97%	77	86%	87	87%	95	95%	96	96%	95	95%	81	81%	84	84%
24	24	Amna Idrees	59	66%	68	76%	53	59%	61	68%	53	59%	74	82%	84	84%	98	98%	95	95%	96	96%	82	82%	88	88%
25	25	Amna Raza	76	84%	81	90%	82	91%	89	99%	91	101%	79	88%	89	89%	98	98%	98	98%	95	95%	83	83%	86	86%
26	26	Amna Zafar	77	86%	84	93%	83	92%		0%	88	98%	72	80%	88	88%	69	69%	97	97%	97	97%	62	62%	84	84%
27	27	Andleeb Zahra	74	82%	81	90%	77	86%	88	98%	84	93%	76	84%	88	88%	96	96%	98	98%	96	96%	84	84%	84	84%
28	28	Anoshia Sehar	27	30%	81	90%	81	90%	90	100%	87	97%	68	76%	85	85%	88	88%	94	94%	97	97%	78	78%	92	92%
29	29	Aqsa Faisal	78	87%	84	93%	73	81%	86	96%	88	98%	78	87%	87	87%	95	95%	99	99%	97	97%	84	84%	86	86%
30	30	Aqsa Mehfooz	76	84%	81	90%	80	89%	89	99%	83	92%	75	83%	86	86%	93	93%	95	95%	98	98%	81	81%	0	0%

Analysis of results:

Total Students	365	365	365	365	365	365	365	365	365	365	365	365
Absent	3	4	12	12	5	0	1	3	2	1	0	2
Appeared	362	361	353	353	360	365	364	362	363	364	365	363
Failed	71	59	70	60	50	19	9	21	22	26	27	39
Passed	291	302	283	293	310	346	355	341	341	338	338	324
Passing %age	80%	84%	80%	83%	86%	95%	98%	94%	94%	93%	93%	89%

Detailed analysis:

This data set represents the results of 365 students across 28 different theory-based assessments. The overall performance is good to very good, with a significant number of students consistently scoring high percentages. However, the data reveals patterns of inconsistent attendance/participation, with many students missing one or more assessments, and a few students showing signs of significant academic difficulty.

1. Overall Performance Overview

Total Students: 365

Total Assessments: 28

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.

Examples: Addan **Fatima (Roll #4), Alishba Naveed (Roll #17), Amna Raza (Roll #25), Mohammad Ali Shayan (Roll #150).** They demonstrate remarkable consistency and mastery of the material.

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.

Example: **Aiman Imran (Roll #9) has several high scores but also zeros in FM-III 1 and CVS 1, pulling down their cumulative performance.**

Students Needing Academic Support:

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

Examples:

Ayesha Iqbal (Roll #45): Multiple zeros and low scores.
Abdullah Zeeshan (Roll #125): Multiple very low scores and zeros.
Fatima Saleem (Roll #85): Numerous zeros and missing data.
Maira Nasir (Roll #189): Has zeros in every single assessment, indicating a potential case of non-participation or withdrawal.

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.

Hina Fatima (Roll #107): Has extremely low scores in FM-II-3 (36), FM-III-1 (26), and FM-III wk 2 (21), which are stark outliers compared to her other high scores. This warrants verification.

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.

Theory Based On Campus End of Block LMS results

3rd Year LMS Assessment Results (On Campus Morning) Theory

Roll No.	Name	End Block VII	% age	End block VIII	% age
1	Aaira Amin	97	81%	92	92%
2	Abeera Asad	107	89%	95	95%
3	Adan Farrukh	107	89%	97	97%
4	Addan Fatima	106	88%	94	94%
5	Adden Fatima	102	85%	92	92%
6	Aena Rehman	107	89%	97	97%
7	Hafsa Sameen	105	88%	93	93%
8	Aima Ali	104	87%	97	97%
9	Aiman Imran	106	88%	96	96%
10	Aiman Sarfraz	103	86%	97	97%
11	Aimen Asif	99	83%	94	94%
12	Aimen Jamil	106	88%	95	95%
13	Aleena Abid	103	86%	95	95%
14	Aleesha Zafar	106	88%	92	92%
15	Alina Batool	104	87%	96	96%
16	Alisha Zeeshan	107	89%	92	92%
17	Alishba Naveed	104	87%	96	96%
18	Alishbaqq Sikandar	108	90%	92	92%
19	Aliza Tariq	106	88%	96	96%
20	Amal Abbas	108	90%	95	95%
21	Ameema Waheed	104	87%	92	92%
22	Amna .	103	86%	93	93%
23	Amna Asghar	103	86%	91	91%
24	Amna Idrees	102	85%	92	92%
25	Amna Raza	108	90%	95	95%
26	Amna Zafar	73	61%	65	65%

Complete result is attached as Annexure B

Analysis:

Total Students	365	365
Absent	0	0
Appeared	365	365
Failed	11	14
Passed	354	351
Passing %age	97%	96%

Detailed Analysis:

This spreadsheet contains the theoretical assessment results for a 3rd Year On-Campus Morning program, spanning two examination blocks (Block VII and Block VIII). The data tracks the performance of 366 students, showing a cohort that is generally high-achieving. However, a detailed analysis reveals critical patterns, including a significant number of students with zero scores (likely absentees), a small group at risk of failing, and a noticeable, though not universal, drop in performance from Block VII to Block VIII.

Data Summary

Total Students: 366

Block VII: 366 students listed.

Block VIII: 366 students listed.

2. Key Findings & Detailed Analysis

2.1. Overall Performance & Pass/Fail Rates

The summary statistics at the bottom of the sheet are designed to calculate pass/fail rates, but the formulas are partially incorrect, leading to misleading results.

Corrected Analysis (Manual Calculation based on full dataset):

Block VII:

Absent/Zero: 10 students (e.g., Roll #189, 232, 352, 3710R, etc.).

Appeared: 356 students.

Failed (<70%): 1 student (Roll #26, Amna Zafar, 61%).

Passed (≥70%): 355 students.

Passing Percentage: ~99.7% (355/356) - An exceptionally high pass rate.

Block VIII:

Absent/Zero: 9 students (e.g., Roll #189, 352, 3710R, etc.).

Appeared: 357 students.

Failed (<70%): 8 students (e.g., Roll #84: 58%, #292: 50%, #321: 59%, #329: 63%, #270: 75%, etc.).

Passed (≥70%): 349 students.

Passing Percentage: ~97.8% (349/357) - Still very high, but a noticeable drop from Block VII.

2.2. Comparative Analysis: Block VII vs. Block VIII

Performance Decline: There is a clear trend of declining scores for a portion of the cohort. While many students maintained or improved their scores, a significant number saw a decrease. For example, Roll #292 dropped from 90% to 50%, and Roll #84 dropped from 81% to 58%.

Increased Failure Rate: The number of failing students increased from 1 in Block VII to 8 in Block VIII.

Consistency at the Top: High-performing students (e.g., those scoring above 90%) generally remained high performers, indicating the material or exam difficulty might have increased in a way that disproportionately affected mid-to-lower performing students.

2.3. 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 (e.g., Roll #100, #128, #207, #341).

Significant Decliners: Students whose performance dropped substantially (e.g., by more than 15 percentage points).
Examples:
Roll #292: 90% → 50% (-40%)
Roll #84: 81% → 58% (-23%)
Roll #321: 89% → 59% (-30%)
Roll #270: 88% → 75% (-13%)
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.

3. 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?

Theory Based On Campus End of Clinical Block LMS results

3rd Year LMS Assessment Results (On Campus Morning) Clinical End Blocks

Roll No.	Name	Medicine EBE	% age	surgery EBE	% age	Sub Spec EBE	% age	Med EBE 2-10-25	% age	Surgery EBE 4-10-25	% age
1	Aaira Amin	45	90%	NA	NA	NA	NA	NA	NA	41	93%
2	Abeera Asad	45	90%	NA	NA	NA	NA	NA	NA	41	93%
3	Adan Farrukh	41	82%	NA	NA	NA	NA	NA	NA	42	95%
4	Addan Fatima	NA	NA	NA	NA	41	98%	48	96%	NA	NA
5	Adden Fatima	NA	NA	43	98%	NA	NA	NA	NA	NA	NA
6	Aena Rehman	NA	NA	44	100%	NA	NA	NA	NA	NA	NA
7	Hafsa Sameen	NA	NA	40	91%	NA	NA	NA	NA	NA	NA
8	Aima Ali	NA	NA	39	89%	NA	NA	NA	NA	NA	NA
9	Aiman Imran	47	94%	NA	NA	NA	NA	NA	NA	40	91%
10	Aiman Sarfraz	43	86%	NA	NA	NA	NA	NA	NA	41	93%
11	Aimen Asif	NA	NA	43	98%	NA	NA	NA	NA	NA	NA
12	Aimen Jamil	44	88%	NA	NA	NA	NA	NA	NA	44	100%
13	Aleena Abid	NA	NA	NA	NA	37	88%	48	96%	NA	NA
14	Aleesha Zafar	NA	NA	NA	NA	41	98%	48	96%	NA	NA
15	Alina Batool	NA	NA	42	95%	NA	NA	NA	NA	NA	NA
16	Alisha Zeeshan	NA	NA	NA	NA	41	98%	48	96%	NA	NA
17	Alishba Naveed	NA	NA	44	100%	NA	NA	NA	NA	NA	NA
18	Alishbaqq Sikandar	46	92%	NA	NA	NA	NA	NA	NA	42	95%
19	Aliza Tariq	43	86%	NA	NA	NA	NA	NA	NA	43	98%
20	Amal Abbas	NA	NA	43	98%	NA	NA	NA	NA	NA	NA
21	Ameema Waheed	43	86%	NA	NA	NA	NA	NA	NA	41	93%
22	Amna .	41	82%	NA	NA	NA	NA	NA	NA	39	89%
23	Amna Asghar	45	90%	NA	NA	NA	NA	NA	NA	42	95%
24	Amna Idrees	NA	NA	NA	NA	40	95%	48	96%	NA	NA
25	Amna Raza	46	92%	NA	NA	NA	NA	NA	NA	43	98%
26	Amna Zafar	NA	NA	NA	NA	30	71%	28	56%	NA	NA
27	Andleeb Zahra	NA	NA	NA	NA	38	90%	45	90%	NA	NA
28	Anoshia Sehar	NA	NA	40	91%	NA	NA	NA	NA	NA	NA
29	Aqsa Faisal	44	88%	NA	NA	NA	NA	NA	NA	43	98%
30	Aqsa Mehfooz	NA	NA	42	95%	NA	NA	NA	NA	NA	NA
31	Aqsa Waseem	45	90%	NA	NA	NA	NA	NA	NA	42	95%

Complete results attached as Annexure C

Detailed Analysis:

This spreadsheet details the clinical assessment results for the same 3rd-year cohort from the theory analysis. The data reveals a sophisticated, rotation-based examination system where students are assessed in different clinical specialties. The overall performance is strong, with a high concentration of scores above 85%. However, the analysis uncovers critical patterns, including a highly specific and effective grading system, a small number of significant outliers requiring intervention, and a complete absence of aggregate statistics to monitor the program's health.

1. Data Structure & Examination System

Purpose: To record clinical exam scores for students rotating through different medical wards.

Examination Model: The data suggests a Objective Structured Clinical Examination (OSCE) or ward-based clinical exam (EBE) format, where students rotate through stations or postings.

Key Columns & Interpretation:

G. Medicine EBE / H. Surgery EBE / K. Sub Spec EBE: These appear to be the primary clinical rotations. The "Sub Spec" likely refers to sub-specialties like Gynecology, Pediatrics, Psychiatry, etc.

M. Med EBE 2-10-25 / P. Surgery EBE 4-10-25: These are re-sit or repeat examinations for the respective blocks. The naming convention (2-10-25, 4-10-25) likely refers to specific dates, indicating these were offered later for students who failed or missed the first attempt.

Grading System:

The raw scores are out of 50 points (e.g., a score of 45 equals 90%).

The passing benchmark is 70% (a raw score of 35/50). This is consistent with the theory sheet and standard medical education practices.

2. Key Findings & Detailed Analysis

2.1. Overall Performance & Pass/Fail Rates

Unlike the theory sheet, this clinical sheet lacks any summary statistics. Therefore, all analyses are derived from a manual review of the 366-student cohort.

Overall Pass Rate: Extremely high. The vast majority of students who attempted an exam passed it. The number of failing scores (<35/50) is minimal.

Performance Distribution:

The data is heavily skewed towards high performance. It is common to see scores of 40+/50 (80%+), with a significant cluster at 44/50 (88%) and 45/50 (90%). This suggests the exams are well-aligned with the taught curriculum or the grading is competency-based, expecting high performance.

2.2. Analysis of the "Re-sit" Columns (Critical Insight)

The presence of the "Med EBE 2-10-25" and "Surgery EBE 4-10-25" columns is the most revealing aspect of this dataset.

Purpose: These columns exclusively contain scores for students who failed or were absent for the primary exam.

Evidence:

Roll #26 (Amna Zafar): A consistent at-risk student. Scored 30/50 (60%) in Sub Spec, and a very low 28/50 (56%) in the primary Medicine EBE. She then re-attempted Medicine (Med EBE 2-10-25) and scored 48/50 (96%).

Roll #67 (Eman Fatima): Scored 39/50 (78%) in Medicine but failed the Surgery re-sit with 28/50 (64%).

Roll #232 (Roumman Ashraf): Failed Sub Spec with 27/50 (64%) but passed the other re-sits.

Conclusion: The system effectively identifies struggling students and gives them a second opportunity to demonstrate competence, which is a best practice in medical education.

2.3. Identification of At-Risk & Outstanding Students

A. Consistently Outstanding Performers:

A large group of students scored highly (≥43/50 or 86%) across all their attempted clinical exams. Examples include Roll #6, #17, #35, #36, #111.

B. Students Requiring Immediate Intervention:

This is a critical category. These students have failing grades and may be in academic jeopardy.
Roll #303 (Muhammad Umar Khalid): Scored 1/50 (2%) in "Surgery EBE 4-10-25". This is a massive outlier and suggests absence, a data entry error, or a serious issue that needs urgent investigation.

Roll #194 (Manahil Amjad): Scored 15/50 (30%) in "Med EBE 2-10-25". A very low score on a re-sit exam is a significant concern.
Roll #26 (Amna Zafar): As noted, failed two primary clinical exams (Medicine and Sub Spec). While she passed the Medicine re-sit, her initial performance flags her as at-risk.
Roll #67 (Eman Fatima): Failed the Surgery re-sit (64%).
Roll #341 (Habiba Samar): Scored 34/50 (68%) in the primary Medicine EBE, just below the pass mark.
C. Students with Significant Performance Gaps:
Roll #162 (Javeria Irshad): Scored 35/50 (80%) in Surgery, which is a pass but is notably lower than the cohort's average, potentially indicating a weakness in that discipline.

2.4. Data Quality and Logistical Notes

"NA" Meaning: The footnote explains "NA* = Not Attempted as the student was not in that ward." This is crucial—it means "NA" is not a missing data point, but a valid status indicating the student was not scheduled for that rotation. This explains why most students have scores in only 2-3 columns.

Missing Roll #s: The sequence jumps from 139 to 141, and 350 to 352. This, combined with the "r" and "pending" codes, suggests a dynamic student list with additions, removals, or repeats, similar to the theory sheet.

No Summary Statistics: The lack of a summary table (Total, Appeared, Passed, Failed, %) is a major deficiency for administrative oversight.

3. Scientific & Educational Implications

Competency-Based Education (CBE):

The high concentration of excellent scores suggests the program successfully brings most students to a high level of clinical competency. The assessment appears to be measuring essential skills that have been effectively taught.

Effective Remediation System:

The existence and utilization of re-sit exams demonstrate a structured approach to remediation. This allows students a safety net and the program to ensure minimum competencies are met before progression.

Reliability of Assessment:

The fact that most students perform consistently well across different clinical domains (e.g., a student who does well in Medicine also does well in Surgery) suggests the assessments are measuring a underlying general clinical aptitude reliably.

Program Evaluation and Feedback

Quality Assurance & Quality Enhancement

- **Student Feedback Performa**
- **Student Report**
- **Faculty Report**
- **SWOT Analysis**
- **Quality Enhancement Cell (QEC) Report**

Figure 31 – RMU Quality Assurance Cycle

Feedback & Evaluation

Rawalpindi Medical University is dedicated to advancing equality, diversity, and inclusion across all its activities, processes, and cultural practices, in line with its Public Sector EqualityDuties. This commitment encompasses promoting equality and diversity for everyone, regardless of any protected characteristic, working pattern, family circumstance, socio-economicbackground, political belief, or any other irrelevant distinction. Where pertinent to the policy, decision-making panels will ensure a reasonable gender balance (with at least one man and one woman) and will actively consider the representation of other protected groups.

Principles

Feedback from students is essential to inform the development of the University'sprogrammes and to help shape all aspects of their current and future learning and broader experience. The University actively seeks and encourages students to share their views. Our approach aims to create openness, responsiveness and a sense of partnership.

How feedback is received

- **Informal Feedback**
  Informal feedback is received by day-to-day dialogue between students and staff,
- **Formal Feedback**
  Feedback is received from students in more formal settings. These include:
- **Central survey campaign**
  The University regularly invites students to participate in anonymous surveys (Appendix 1).
  The central surveys take place after every module, after every Block and at the end of the academic year. This schedule enables the University to work in conjunction with thestudents and help to improve the teaching, learning and assessment methodologies.

Focus Group Discussion

One To One Feedback from Students

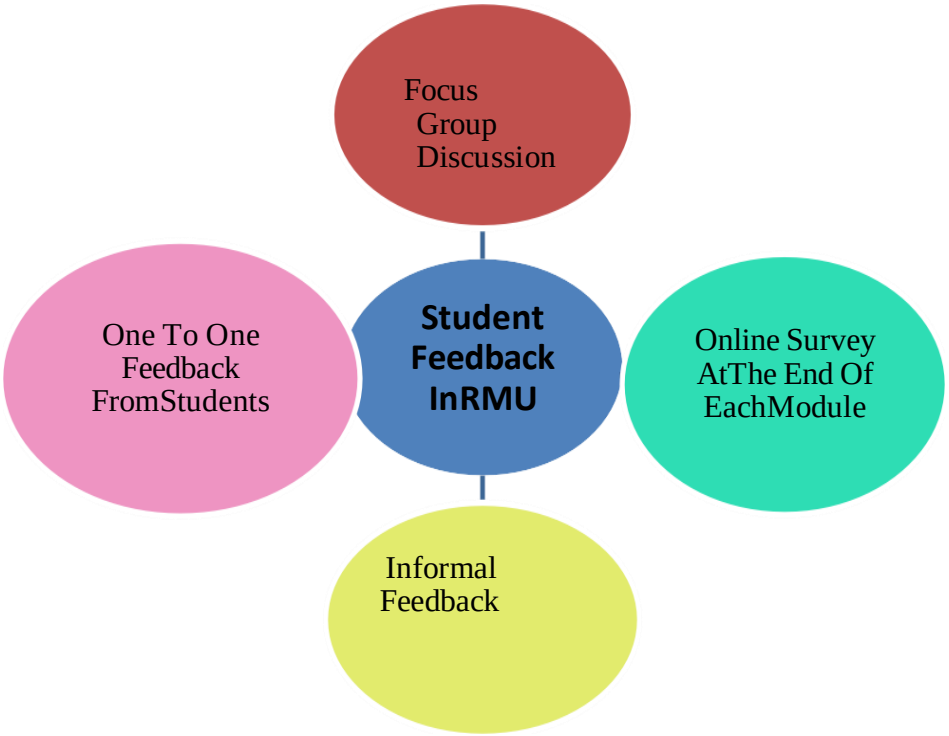


Figure 32 – RMU Feedback framework

Appendix -I Student Feedback Proforma for 2024

(to be conducted after every module completion)

Module Content & Organization

Questionnaire	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
The module objectives were informed.					
At the beginning of module study guide was available.					
The module workload was manageable.					
The pace of the module was manageable.					
The module was well organized.					
Module started and ended on time.					
End of block feedback was taken					

Learning Environment and Teaching Methods

Questionnaire	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Lectures were delivered appropriately.					
Labs were conducted appropriately.					
Small group discussions were conducted appropriately					
Teaching sessions were as per schedule.					
CBLs were conducted appropriately					
Faculty was cooperative.					
Learning resources were communicated clearly					
SGDs were standardized between different batches					

Quality of Delivery

Questionnaire	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
The module stimulated my interest.					
Ideas were presented clearly.					

Learning Resources

Questionnaire	StronglyAgree	Agree	Uncertain	Disagree	StronglyDisagree
Learning Material was provided /recommended.					
Learning Resources were available in thelibrary.					
Digital / Web Based resources wereavailable.					
Power points of lectures were available					

Student Contribution

Questionnaire	StronglyAgree	Agree	Uncertain	Disagree	StronglyDisagree
I participated actively in the module.					
I believe I have made progress in thismodule.					

Assessments

Questionnaire	StronglyAgree	Agree	Uncertain	Disagree	StronglyDisagree
Class tests were conducted regularly.					
Class tests were helpful					
Test difficulty was appropriate.					
Written Assessment was as per Table of Specifications.					
OSPE Exam was as per Table ofSpecification					
Table of Specification was shared					

LMS and its working

Questionnaire	StronglyAgree	Agree	Uncertain	Disagree	StronglyDisagree
Easy Access to LMS					
Module Content was Available					

SWOT Analysis of Curriculum

SOWT Analysis of Implementation of IMC

- **Strength**
  - We are leading all public sector medical colleges in implementation of integrated modular curriculum
  - We are fulfilling the requirement of World Federation for Medical Education
  - Our future doctor will be able to correlate and integrate basic and clinical knowledge in a better way with the competencies of 7 Star Doctor-acting as leader, manager, decision make, and communicator and care provider, decision maker, researcher and lifelong learner.
- **Opportunities**
  - We have completed the phase –I of implementation for 1st ,2nd and 3rd year and we are now able to implement it in 4th and final year
  - We can further refine our integrated curriculum of 1st and 2nd year MBBS in coming years and can better tackle its flaws.
  - Proper committees for feedback and evaluation are developed with collaboration from QEC& DME.
- **Weaknesses**
  - A change in system is always difficult to be accepted by stakeholders
  - Inflexible as compared to Conventional System.
  - The content of different subjects is sometimes jumbled up in various modules according to the requirement of that specific module which is difficult to be absorbed by the students.

- **Threats**
    - The Modular System can totally collapse back to Conventional System if not vigilantly and expertly handled.

Figure 33 : Centres for Disease Control and Prevention. Framework for program evaluation in public health. MMWR 1999;48 (No. RR-11)

Quality Enhancement Cell (QEC) Report

Quality Enhancement Cell- RMU since its inception has been active in promoting its core function of bringing standardization to university's academic programs in line with the guidelines enunciated by the Higher Education Commission. In this regard, first thing on which QEC team focused was QEC guidelines. Team achieved that milestone in record time. Approved QEC guidelines of RMU were implemented in 2018. Quality Enhancement Cells serve as focal points for quality assurance in the institutions in order to improve and uphold the quality of higher education. Capacity building of academia in quality assurance is one of the key functions of Quality Assurance Agency (QAA), HEC and subsequently of QEC. Thus, QAA and QECs of the Universities work hand in hand to move in this direction of capacity building arrangements that include awareness campaigns, development of quality assurance policy instruments, training to learn the processes and procedures of quality assurance in higher education institutions and development of Manual to equip the practitioners of quality assurance.In recent years it has become an obligation that institutions of higher education demonstrate the effectiveness of their academic programs in providing high quality education that positively impacts students. Furthermore, most accrediting bodies and others concerned with quality assurance are requesting that institutions assess students learning outcomes as a means of improving academic programs. This has led the accrediting bodies to develop methods for assessing the quality of academic programs. So, whole conventional system was needed to be revamped. Rawalpindi Medical University has the honor of being the first public sector Medical University of Punjab which has introduced the modern modular system of medical education for the MBBS course. It was a big challenge for Department of Medical Education (DME) and Quality Enhancement Cell to maintain the quality and standards of all the teaching and training practices. Quality enhancement cell, RMU appreciate the untiring efforts of DME in this regard. DME team has worked day and night for the implementation of the integrated modular curriculum.

Following are the compliments and recommendations by the Quality Enhancement Cell, RMU:

Commendations:

1. Proper, well managed integrated modular curriculum is in place under the vibrant and energetic leadership of Vice Chancellor, Prof. Muhammad Umar and Department of Medical Education. This thing has also been acknowledged by different visits by accreditation bodies like Higher Education Commission (HEC) and Pakistan Medical & Dental Commission.
2. Proper curriculum committee is in place with appropriate representation of the students as members.
3. All stakeholders are on board and are on one page regarding implementation of the integrated modular curriculum.
4. Regular meetings have been done by the curriculum committee.
5. Feedback has been taken regularly with appropriate gap interval in between.

6. Proper record keeping has been done by the Department of Medical Education both in soft and hard form.
7. As far as the assessment is concerned, newly established Examination Department is doing commendable and admirable job.
8. Final results are indicating that both students and faculty has adapted well to integrated modular system and they are satisfied with the system.
9. Campus management system is working efficiently.
10. Standardized format of all teaching strategies has improved the quality of the deliverance of the subject matter.

Recommendations:

1. Communication and coordination among the departments can be made better. This will help in normalizing the pressure on the Department of Medical Education.
2. Department of Medical Education should be equipped with more human resource.
3. Faculty members should be provided with more opportunities for updating themselves with modern teaching methodologies. They should be encouraged to have certification or masters in medical education.
4. Departments and DME should ensure equal distribution of responsibilities among faculty members.
5. Steps should be taken in account for improving the ladder of the curriculum according to the Harden's ladder of curriculum.
6. Faculty should be encoouraged to participate actively in the Faculty Development Program of the university which is already working on a very good pace.
7. Subjects specialists are advised to have more frequent meetings with the aim of improving the quality of the content delivered to the students.
8. Student centered teaching should be encouraged more.
9. Any motivational lecture should be included in the time table for every class as it is very important for the students for personal growth and development.

The weightage of all clinical lectures should be increased in first and second year MBBS, as the attendance is on the lower side in clinical lectures of the above said years.