



RMU – 12

Integrated Modular

MBBS Curriculum 2026

Isolation to *Beyond Boundaries*

Study Guide

Special Senses Module

Department of Medical Education

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Second Year MBBS

	Rawalpindi Medical University			
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SECTION – I

RMU – 12 Integrated Modular MBBS Curriculum 2026

Isolation to *Beyond Boundaries*

Preamble

Medical education is undergoing a fundamental transformation globally, shifting from discipline-based, fragmented teaching toward integrated, competency-based, and clinically oriented learning systems that prepare graduates for real-world healthcare practice. In response to these evolving educational paradigms, national regulatory expectations, and the healthcare needs of society, Rawalpindi Medical University has adopted Clinically Oriented Integrated Modular RMU 12 MBBS Curriculum the envisioned under the guiding philosophy of “Isolation to Beyond Boundaries.”. This curriculum represents a structured, longitudinal, and outcome-driven educational continuum, progressing from foundational sciences to advanced clinical practice with a fully embedded internship. It is designed to ensure the gradual and coherent development of knowledge, clinical skills, professional attitudes, and Entrustable Professional Activities (EPAs), enabling graduates to emerge as practice-ready, safe, and competent medical professionals.

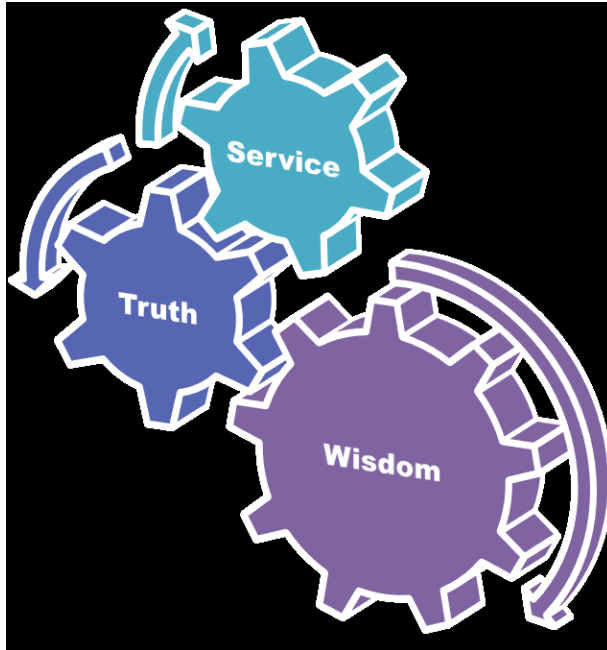
The Clinically Oriented Integrated Modular Curriculum transcends traditional disciplinary silos by promoting horizontal and vertical integration across basic, para-clinical, and clinical sciences. Learning experiences are contextualized around clinical problems and patient-centered care, fostering early clinical exposure, spiral learning, and progressive responsibility. This approach aligns with contemporary integration models, workplace-based assessment strategies, and competency-based medical education principles.

Anchored in national standards and international best practices, the curriculum ensures alignment with PM&DC, WFME and HEC requirements, while addressing local healthcare priorities. By embedding internship within the undergraduate framework and mapping outcomes to clearly defined competencies and Entrustable professional activities (EPAs), the curriculum ensures continuity, accountability, and seamless transition from undergraduate training to independent clinical practice.

Through this clinically oriented and integrated approach, Rawalpindi Medical University aims to produce graduates who are not only clinically proficient but also ethical, reflective, socially accountable, and equipped for lifelong learning moving decisively from isolated learning to integrated, boundary-transcending medical education.

University Moto, Vision, Values & Goals

RMU – 12



Vision and Values

Highly recognized and accredited center of excellence in Medical Education, using evidence-based training techniques for the development of highly competent health professionals, practice-ready for contemporary healthcare, who are critical thinkers, experiential self-directed lifelong learners, and socially accountable.

Mission Statement

To deliver evidence-based, research oriented, and clinically integrated health professional education that produces practice-ready graduates capable of providing safe, effective, patient-centered care, while upholding the values of mutual respect, ethical medical practice, professionalism, and social accountability.

Goals of the Undergraduate Integrated Modular Curriculum

The RMU-12 Model transforms medical education from isolated knowledge acquisition to embedded clinical practice, producing competent, ethical, and practice-ready physicians.

The RMU-12 Undergraduate Medical Program is 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.

Table of Contents

SECTION – I: RMU – 12 Integrated Modular MBBS Curriculum 2026 Isolation to Beyond Boundaries8

University Moto, Vision, Values & Goals.....9

RMU – 12 Structured Framework of Integrated Modular MBBS Curriculum 2026 17

RMU – 12 Assessment Framework of Integrated Modular MBBS Curriculum 2026 Isolation to Beyond Boundaries 18

Clinico - Concept Connect Session (C³6).....34

Introduction:.....34

1. Clinical Trigger (Case Introduction).....34

2. Concept Mapping and Exploration34

3. Integrated Discussion.....35

4. Application and Reflection35

Implementation Strategy35

Educational Value35

Theme Title from Molecules to Medicine: Clinical Applications of Molecular Biology and Genetics.....36

Clinical Case Scenario: A lady with progressive fatigue.....36

Educational Relevance to Theme.....37

Learning Objectives37

Integration Framework.....37

Harden Level 9 – Multidisciplinary Integration37

Disciplines Involved37

Explicit EPA Mapping.....38

EPA-1: Interpret Clinical and Laboratory Data38

EPA-2: Apply Basic Science to Clinical Reasoning.....38

EPA-3: Communicate Findings in a Structured Manner38

EPA-4: Demonstrate Professionalism and Teamwork38

Mapping to Harden Levels.....	39
Teaching–Learning Strategy.....	39
Assessment Alignment.....	39
Summary Statement.....	39
Discipline Wise Details of Modular Contents	42
Special Senses Module-I Team.....	44
Module V – Special Senses Module-I	45
Module Outcomes.....	45
Knowledge	45
Skills	45
Attitude	45
SECTION – II Teaching and Learning Methodologies / Strategies	46
Terms & Abbreviations.....	46
Teaching and Learning Methodologies / Strategies.....	48
Clinico - Concept Connect Session (C ³ 6).....	48
Introduction:.....	48
1. Clinical Trigger (Case Introduction).....	48
2. Concept Mapping and Exploration	48
3. Integrated Discussion.....	49
4. Application and Reflection	49
Implementation Strategy	49
Educational Value	49
Large Group Interactive Session (LGIS)	50
Small Group Discussion (SGD).....	51
Self-Directed Learning (SDL)	53

Case Based Learning (CBL)	53
Problem Based Learning (PBL).....	53
Self-Directed Learning (SDL) at Rawalpindi Medical University (RMU)	54
What is Self-Directed Learning (SDL)?	54
Why is SDL Important in Medical Education?.....	54
SDL Hours in the MBBS Program	54
Assessment of SDL at RMU	55
Alignment with PM&DC and WFME Standards	55
PM&DC	55
WFME.....	55
Practical Sessions/Skill Lab (SKL).....	56
SECTION – III: Themes, Learning Objectives, Teaching Strategies & Tool of Assessments	57
Theme 1: A Patient with Blurred Vision and Red-Flag Eye Pressure Symptoms (1st Week)	59
Case Scenario 1: Acute Blurred Vision with Headache, Halos and Eye Pain.....	59
Clinical Scenario.....	59
Harden Level 11 Justification	62
Specific Learning Objectives.....	63
Spiral Courses (1 st Week)	78
Behavioral Sciences	78
The Islamiyat	78
The Pak Studies.....	78
Transdisciplinary (Hardens Level 11) Clinico-Concept Connect (C ³ 6) Sessions for 1 st Week.....	79
Theme 2: Vertigo and Hearing Loss with Abnormal Bedside Hearing Tests (2nd Week)	81
Case Scenario 2 : Vertigo with Hearing Loss and Abnormal Tuning Fork Tests	81
Clinical Scenario.....	81

Educational Relevance: Discipline-wise Integration	83
Harden Level 11 Justification	84
Specific Learning Objectives	85
Spiral Courses (2 nd Week)	97
Islamiyat.....	97
The Pak Studies.....	97
Family Medicine	97
Transdisciplinary (Hardens Level 11) Clinico-Concept Connect (C ³ 6) Sessions for 2 nd Week.....	98
Theme 3: A Patient with Accommodation Failure/Strabismus; Trauma Links (3rd Week).....	100
Specific Learning Objectives	105
Spiral Courses (3 rd Week).....	113
The Pak Studies.....	113
The Islamiyat	114
Transdisciplinary (Hardens Level 11) Clinico-Concept Connect (C ³ 6) Sessions for 3 rd Week	114
Anatomy LGIS Syllabus of Learning Management System (LMS).....	117
Anatomy SGDs Syllabus of Learning Management System (LMS)	123
Anatomy SKL Syllabus of Learning Management System (LMS)	131
Physiology LGIS Syllabus of Learning Management System (LMS).....	132
Biochemistry LGIS Syllabus of Learning Management System (LMS)	134
Case Based Learning Objectives (CBL)	135
SECTION – IV: Assessment	136
RMU – 12 Assessment Framework of Integrated Modular MBBS Curriculum 2026	137
Isolation to Beyond Boundaries.....	137
Assessment.....	138
3.1 Formative Assessment	139

3.2 Summative Assessment	139
3.2.1 Components of Assessment	139
3.2.4 Continuous Internal Assessment (CIA)	142
SECTION – VI: Time Table	183
Special Senses Module Team	185
Categorization of Modular Contents.....	188
Anatomy.....	188
Teaching Staff / Human Resources of Department of Anatomy	189
Physiology.....	190
Teaching Staff / Human Resources of Department of Physiology	191
Biochemistry	192
Annexure-I	205
Templates for Theory Paper.....	205
□ MCQ, SEQ Paper, & EMQ	205
Templates for AV OSPE.....	205
Templates for Structured Viva.....	205
Annexure-II	221
Special Senses Module-I Entrustable Professional Activities (EPAs)	221

RMU – 12 Integrated Modular MBBS Curriculum 2026

Isolation to Beyond Boundaries

Competency Framework



References

- Harden RM. The integration ladder: a tool for curriculum planning and evaluation. *Medical education*. 2000 Jul 1;34(7).
- Ten Cate O. Nuts and bolts of entrustable professional activities. *Journal of graduate medical education*. 2013 Mar 1;5(1):157-8.
- Pakistan Medical & Dental Council Guidelines for Undergraduate Medical Education (MBBS) Curriculum – 2024

Figure 1

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

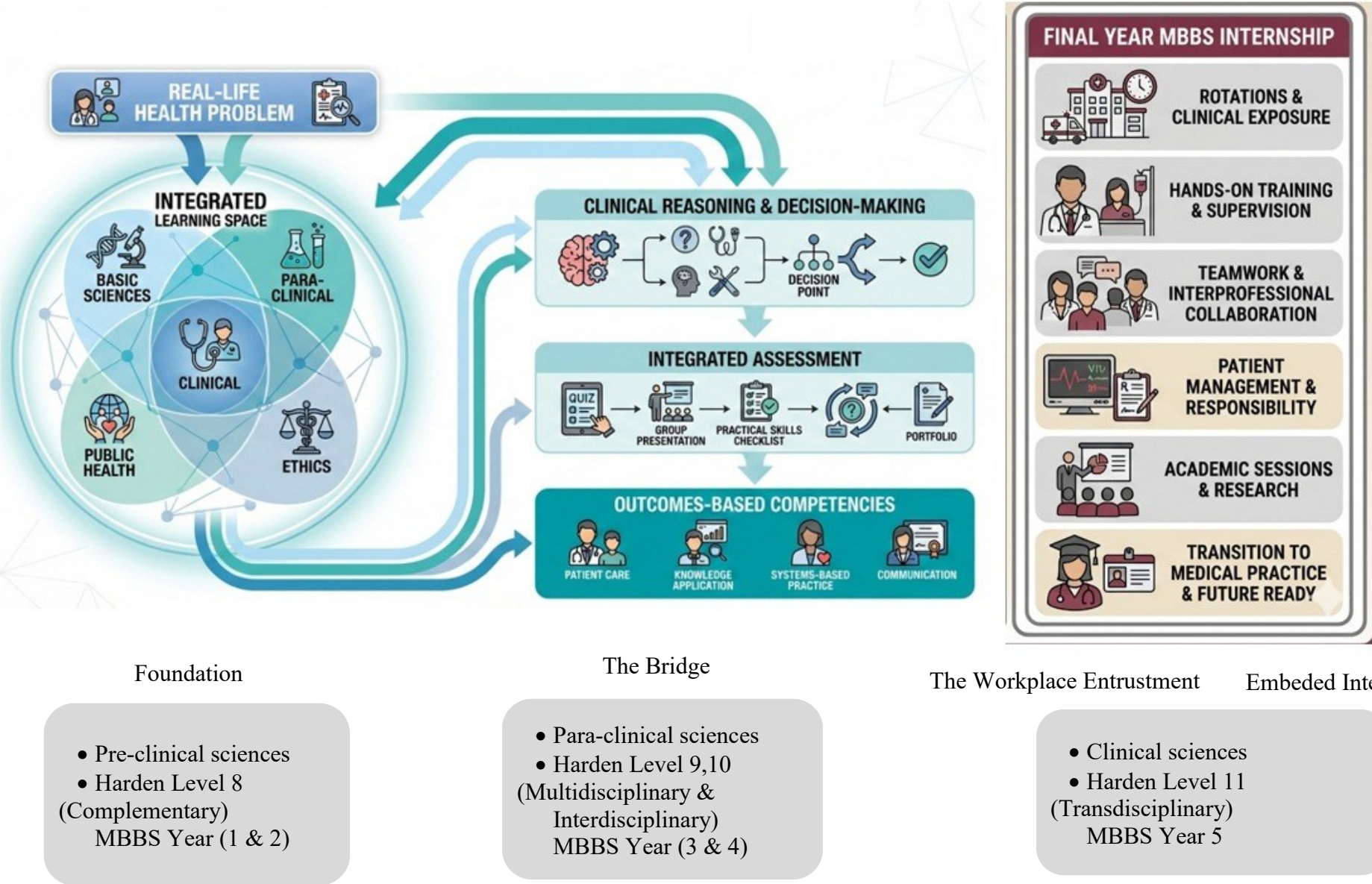


Figure 2

RMU – 12 Structured Framework of Integrated Modular MBBS Curriculum 2026

Isolation to Beyond Boundaries

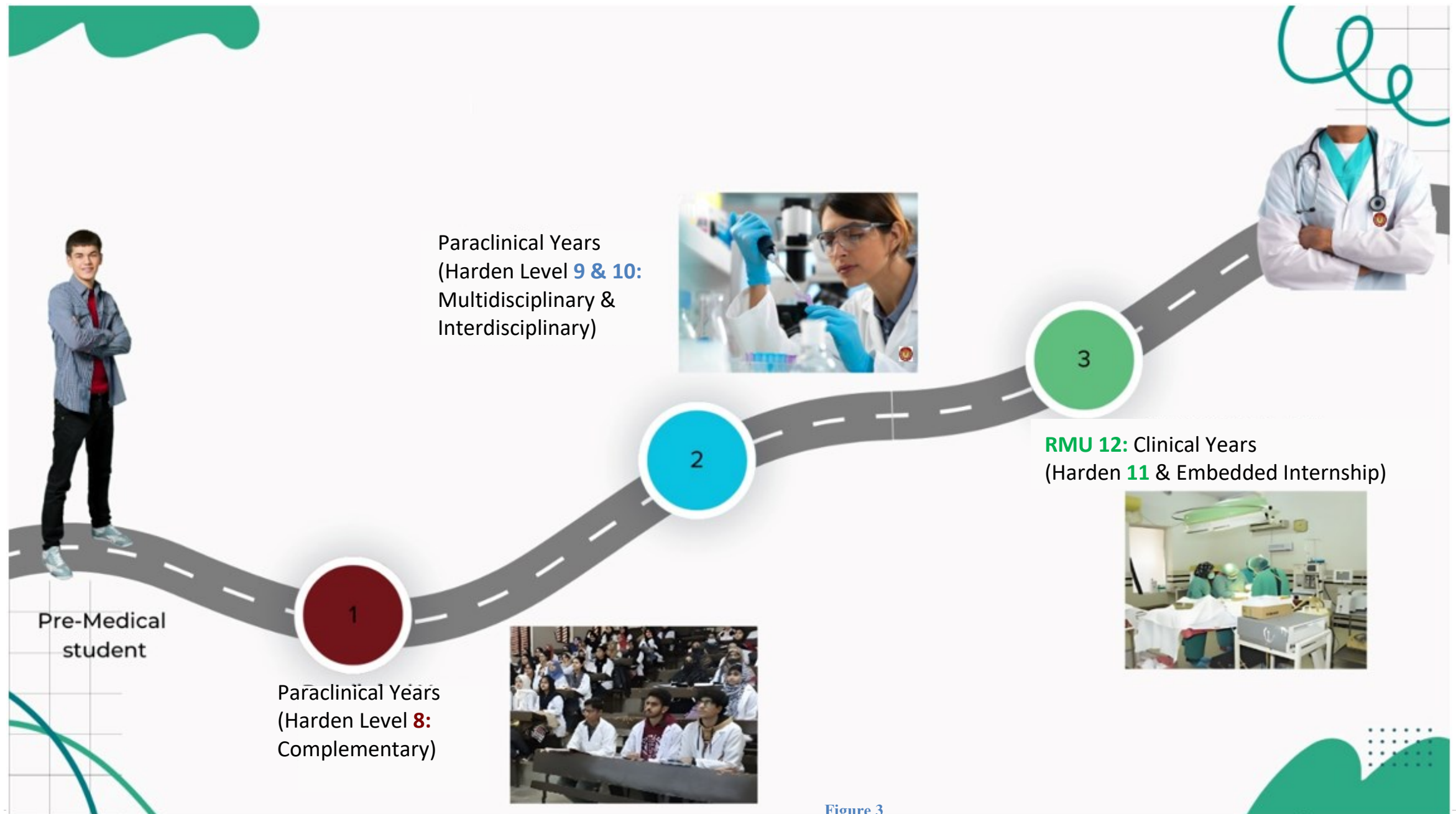


Figure 3

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

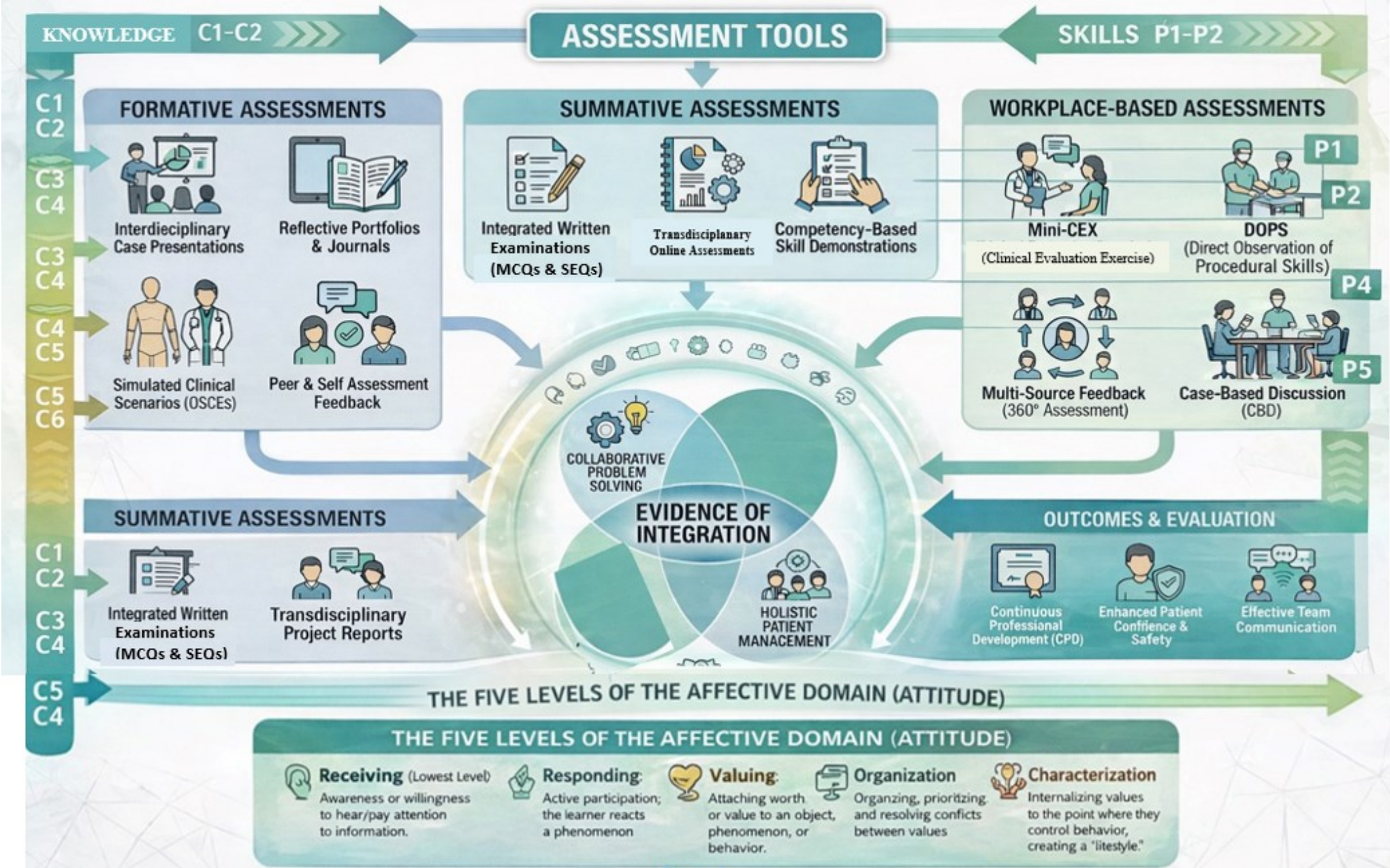


Figure 4

Harden Level 8

Harden Level 9

Harden Level 10

Harden Level 11

RMU 12



MBBS Year 1&2

MBBS Year 3&4

MBBS Year 5

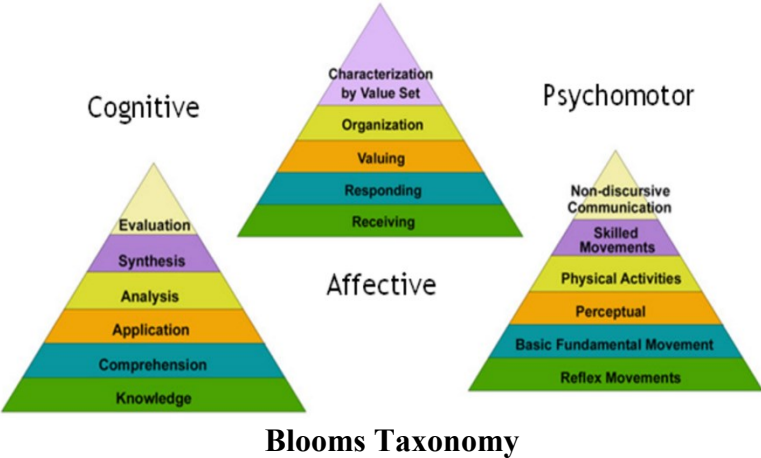
Rawalpindi Medical University has adopted a staged curricular framework that reflects a progressive movement along Harden’s integration ladder, culminating in going beyond the ladder to **RMU 12**. The curriculum is designed to ensure that knowledge acquired in the early years is not isolated or terminal, 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 **clinico concept connect sessions** that require students to draw connections across disciplines. Teaching methods extend beyond lectures to include small-group discussions with structured clinical problem triggers that encourage early application of knowledge. Assessment in this phase is knowledge-focused, but incorporates integrated items and short clinical vignettes to test applied understanding (**C4 level**) across disciplines. These integrated assessment elements are deliberately introduced to prepare students for more complex synthesis (**C6 level**) in later phases, while maintaining the reliability. Regular interdisciplinary planning meetings and module coordination ensure coherence, avoid unnecessary duplication and maintain alignment between teaching and assessment.

Phase 2- The Bridge

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



The 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 familiarise students with performance-based expectations. Assessment strategies emphasise 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 centred on performance in the workplace, using tools such as mini-CEX, DOPS, case-based discussions and multisource feedback. Evidence from these assessments is collected longitudinally within portfolios and reviewed by entrustment or competence committees to make informed decisions about progression and readiness for practice. Summative judgment is therefore based on sustained performance over time. Faculty roles evolve from subject teachers to supervisors, assessors and coaches, with explicit responsibility for observation, feedback and entrustment decisions. Diverse clinical exposure in tertiary public sector hospitals and community settings ensure adequate exposure, supervision and assessment opportunities, while quality assurance processes focus on the validity and consistency of entrustment decisions and learning experiences.



Miller's Pyramid of Clinical Competence

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 emphasises 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.

Key Highlights

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

1. Foundations of Integration

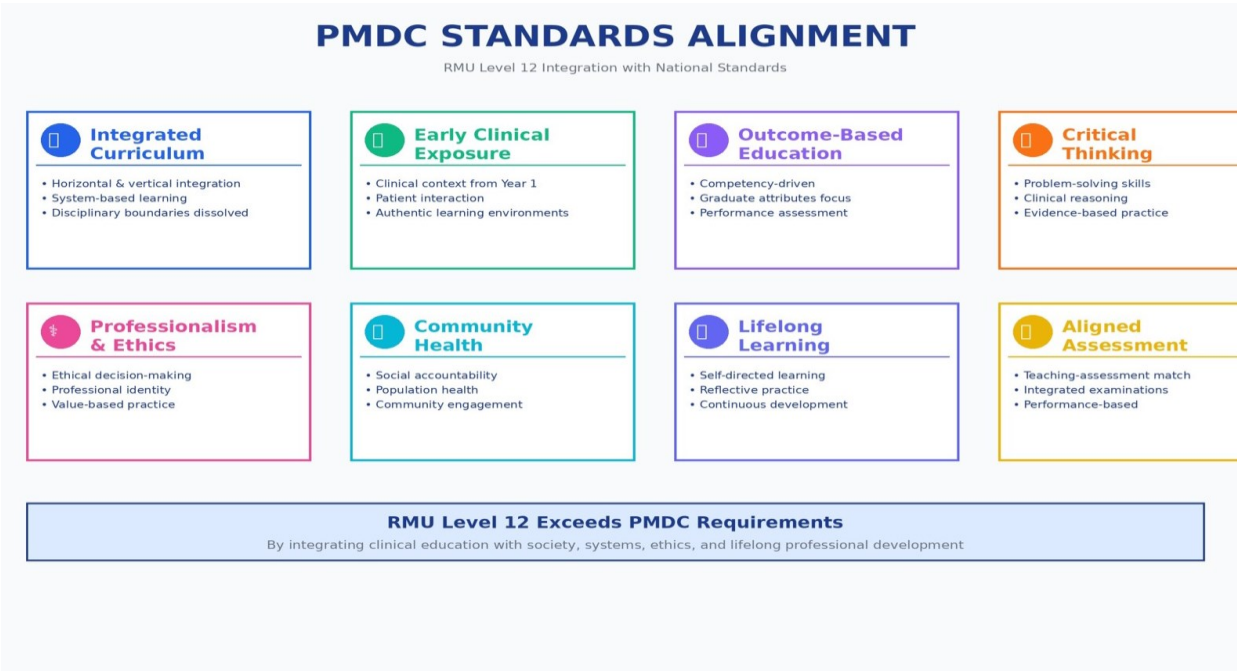
1.1 PMDC Standards for Medical Education

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

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

1.2 Harden's Integration Ladder: Overview

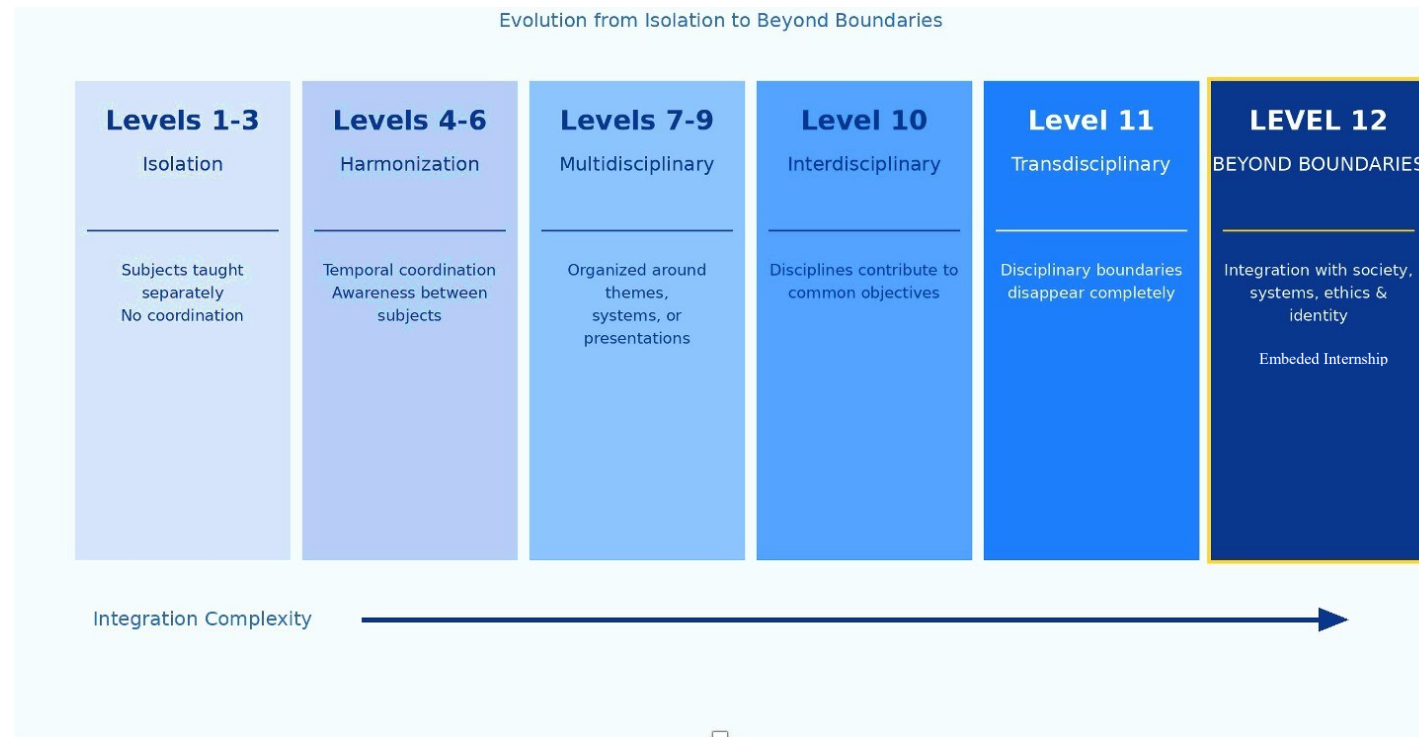
Harden's Integration Ladder provides a systematic framework for evaluating curricular integration, progressing through 11 levels:



Harden's Integration Ladder

RMU

RMU – 12 Beyond Boundaries



2. RMU Level 12 - Beyond Boundaries

2.1 Conceptual Definition

RMU Level 12: Beyond Boundaries Integration

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

2.2 Why Level 12 Exists

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

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

2.3 Five Pillars of Level 12 Integration

A. Societal Integration: Patient-in-Society Problems

Level 11: Patient-centered clinical problems

RMU Level 12: Patient-in-society problems

RMU Implementation:

- Community-based medical education

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

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

B. Value-Based Integration: Contextual Ethics

Level 11: Ethics integrated within cases

RMU Level 12: Ethics embedded longitudinally in real decisions



RMU Implementation:

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

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

C. System-Level Integration: Healthcare Systems & Leadership

Level 11: Focus on individual patient care

RMU Level 12: Focus on healthcare systems and governance

RMU Implementation:

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

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

D. Knowledge Creation: Beyond Synthesis

Level 11: Knowledge synthesis RMU Level 12: Knowledge generation

RMU Implementation:

- Research literacy and critical appraisal skills
- Clinical audits and community health projects

LEVEL 11 vs LEVEL 12	
The Evolution Beyond Transdisciplinary Integration	
LEVEL 11 Transdisciplinary	LEVEL 12 Beyond Boundaries
Unit of Integration	Unit of Integration
Patient problem	Patient within society, systems, and ethics
Primary Focus	Primary Focus
Clinical problem-solving	Clinical + population health + systems thinking
Scope	Scope
Individual patient care	Individual care + community + healthcare systems
Ethics Approach	Ethics Approach
Integrated within cases	Longitudinally embedded in real decisions
Knowledge Type	Knowledge Type
Knowledge synthesis	Knowledge creation & generation
Learning Organization	Learning Organization
Around clinical problems	Around health challenges & society
Disciplinary Boundaries	Disciplinary Boundaries
Dissolved in teaching	Extended to societal integration
Graduate Outcome	Graduate Outcome
Competent clinician	Adaptive, socially accountable professional
Bloom's Taxonomy	Bloom's Taxonomy
Primarily Analysis	Analysis → Evaluation → Creation

- Evidence-based practice and innovation

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

E. Temporal Integration: Lifelong Professional Identity

Level 11: Competent graduate **RMU Level 12:** Adaptive professional

RMU Implementation:

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

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

3. Alignment with PMDC Standards

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

4. Bloom's Taxonomy & Higher-Order Thinking

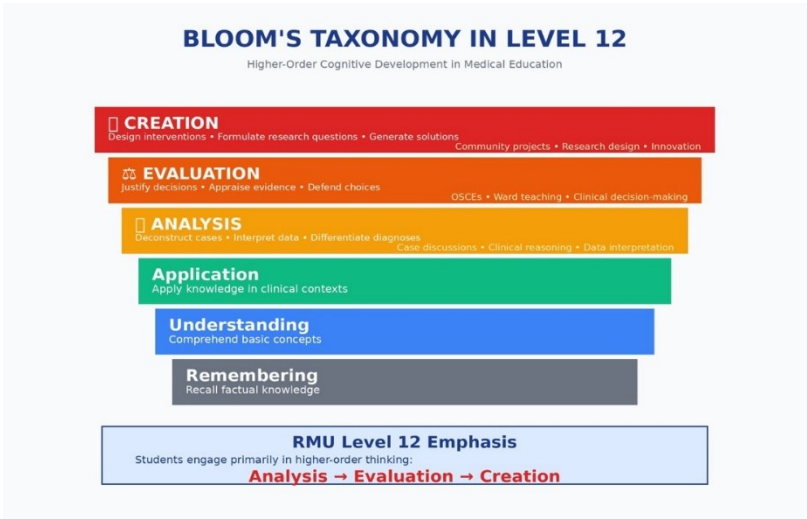
PMDC Competency	RMU Implementation	Level 12 Justification
Medical Knowledge	Integrated system-based modules combining anatomy, physiology, pathology, pharmacology, radiology, and clinical medicine	Knowledge constructed through real patient problems; subject boundaries dissolved
Clinical Skills & Patient 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

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

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

4.1 Learning Activities Mapped to Bloom's Levels

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



GRADUATE OUTCOMES

Level 12 Integration Produces Adaptive Professionals

CORE COMPETENCIES

✔ Clinical Excellence

Evidence-based practice
Diagnostic reasoning
Patient safety

✔ Professionalism

Ethical decision-making
Patient-centered care
Accountability

✔ Communication

Effective patient interaction
Interprofessional collaboration
Cultural competence

✔ Population Health

Community engagement
Preventive focus
Health promotion

ADAPTIVE CAPABILITIES

📁 Systems Thinking

Health systems understanding
Policy awareness
Resource management

📁 Research Literacy

Critical appraisal
Knowledge generation
Evidence synthesis

📁 Lifelong Learning

Self-directed growth
Reflective practice
Adaptive expertise

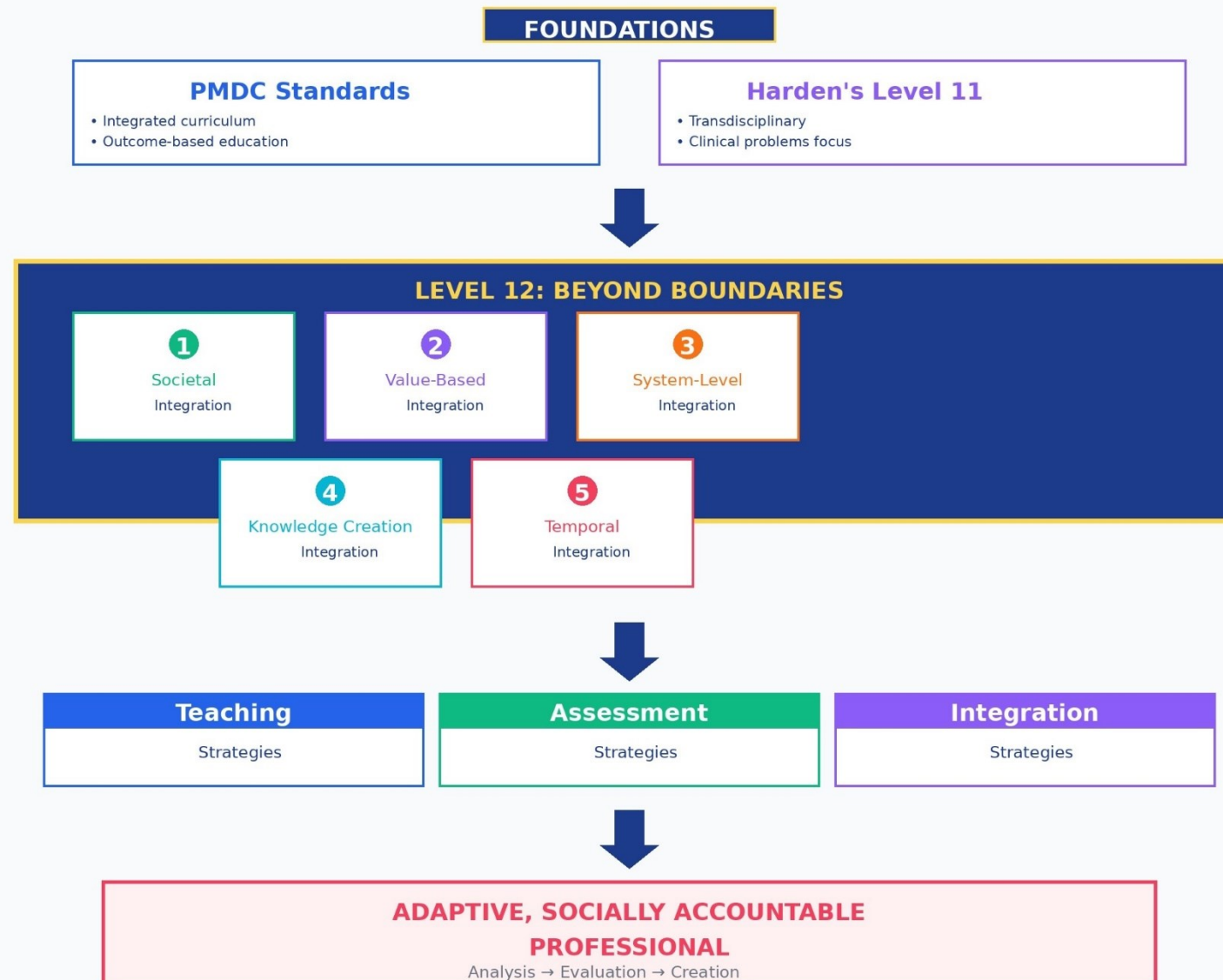
📁 Leadership

Innovation
Change management
Team development

**ADAPTIVE, SOCIALLY ACCOUNTABLE
PROFESSIONAL**

RMU LEVEL 12 FRAMEWORK

Complete Conceptual Flow



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

Clinico - Concept Connect Session (C³6)

Introduction:

A Clinico -Concept Connect Session is a **case-based, concept-driven educational encounter** in which a carefully designed clinical scenario is used as the central anchor to explore and integrate relevant concepts from basic and clinical sciences. This **Session** is an integrated teaching–learning activity designed to bridge the gap between **foundational biomedical concepts** and their **real-world clinical application**. It serves as a structured platform where students actively connect basic science principles with clinical reasoning, patient presentation, and professional decision-making, thereby promoting deeper understanding and long-term retention of knowledge.

This session moves beyond traditional discipline-based teaching by fostering **conceptual integration**, **contextual learning**, and **early clinical exposure**, enabling students to appreciate the relevance of basic sciences in patient care from the outset of their medical training.

Rather than teaching facts in isolation, the session emphasizes:

- Understanding **why** a concept matters clinically
- Applying **core principles** to explain patient findings
- Developing **clinical reasoning skills** in a guided, safe learning environment

The focus remains on **conceptual clarity**, **clinical correlation**, and **professional competence**, rather than diagnosis-driven or management-heavy discussions.

Structure of the Clinico -Concept Connect Session

The session is structured into clearly defined phases to ensure alignment with learning outcomes and progressive student engagement:

1. Clinical Trigger (Case Introduction)

- A concise, authentic clinical scenario is presented.
- The case is selected to naturally elicit key underlying concepts.
- Information is disclosed in a focused manner to stimulate curiosity and inquiry.

2. Concept Mapping and Exploration

- Relevant foundational concepts (e.g., physiological mechanisms, biochemical pathways, structural–functional relationships) are identified.
- Students are guided to link clinical signs, symptoms, and investigations to these concepts.

C3: Clinico Concept Connect

C6: Bloom's Level C6 (Creation / Synthesis)

Learners integrate knowledge from basic, para-clinical, and clinical sciences to formulate differential diagnoses, management plans, or clinical reasoning pathways, demonstrating higher-order thinking and decision-making.

Reference: Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.

- Emphasis is placed on **mechanisms**, not memorization.

3. Integrated Discussion

- Faculty from relevant disciplines facilitate discussion collaboratively.
- Concepts are reinforced through clinical correlation and guided questioning.
- Students actively participate in explaining findings using scientific reasoning.

4. Application and Reflection

- Learners reflect on how conceptual understanding informs clinical thinking.
- Key take-home messages are summarized.
- Opportunities for self-directed learning and further exploration are highlighted.

Implementation Strategy

The Clinico -Concept Connect Session is implemented as a **planned, scheduled activity** within the integrated curriculum and follows these principles:

- **Faculty Collaboration:** Basic science and clinical faculty jointly design and facilitate sessions to ensure coherence and relevance.
- **Curriculum Alignment:** Each session is mapped to predefined learning outcomes, competencies, and entrustable professional activities.
- **Active Learning:** Small-group discussions, guided questioning, and concept linking are emphasized over didactic teaching.
- **Progressive Complexity:** Early sessions focus on core concepts, with increasing clinical depth as students advance.
- **Feedback and Reflection:** Structured feedback is provided to reinforce learning and improve reasoning skills.

Educational Value

Through its integrated design, the Clinico -Concept Connect Session:

- Strengthens **conceptual understanding**

- Enhances **clinical reasoning and analytical skills**
- Encourages **horizontal and vertical integration**
- Promotes **student engagement and ownership of learning**
- Prepares learners to become **practice-ready, concept-driven clinicians**

Example of **Clinico - Concept Connect (C³6) Session**

Theme Title from Molecules to Medicine: Clinical Applications of Molecular Biology and Genetics

Clinico -Concept Connect (C³6) Session

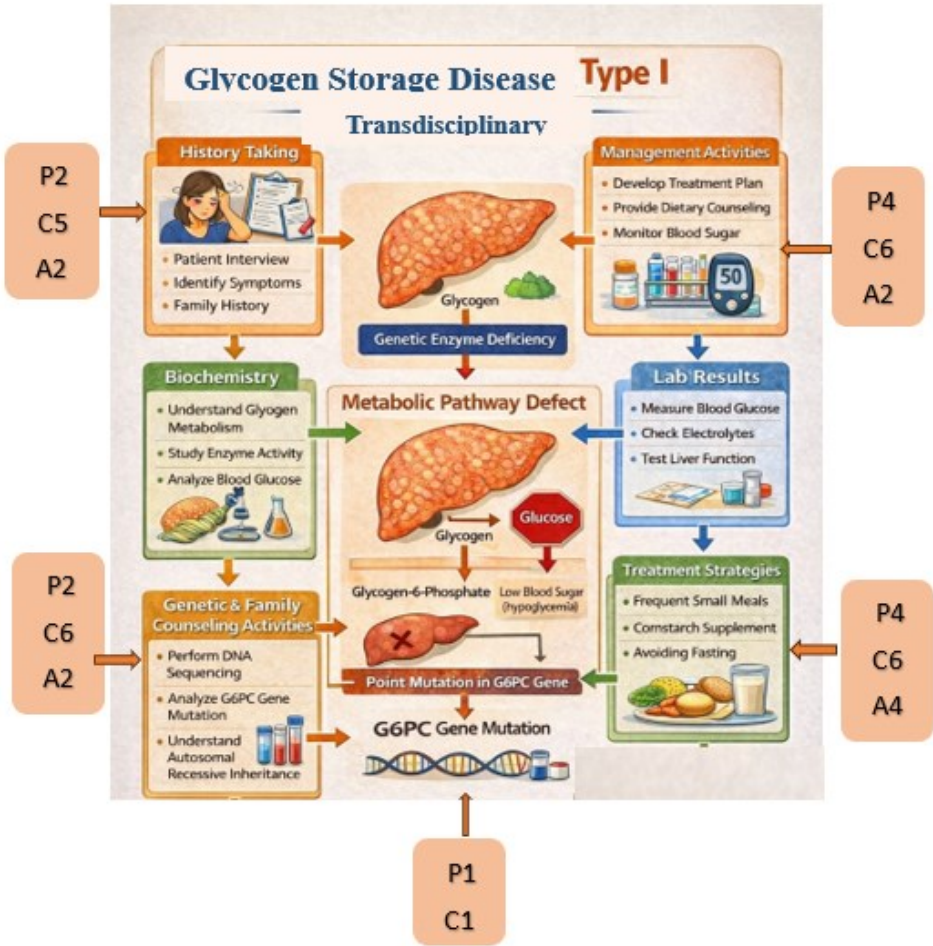
Clinical Case Scenario: A lady with progressive fatigue

A 22-year-old woman presents to the outpatient clinic with progressive fatigue, muscle weakness, and episodes of dizziness, particularly after prolonged fasting. She reports poor exercise tolerance and occasional nausea. There is no history of infection or chronic illness. A sibling has a similar condition. On examination, she appears thin but alert. Vital signs are stable. Mild proximal muscle weakness is noted. There is no organomegaly.

Laboratory and Molecular Findings

- Fasting blood glucose: Low
- Serum electrolytes: Normal
- Enzyme activity assay: Reduced activity of a glucose-metabolizing enzyme
- Genetic analysis: Point mutation in enzyme-encoding gene
- Family screening: Similar mutation identified

This case exemplifies how a **single molecular defect** leads to systemic clinical manifestations, reinforcing the transition from molecular mechanisms to patient-centered medicine



Clinico-Concept Connect (C³6) Sessions
Transdisciplinary Integration (Harden Level 11)

Domains of Learning According to Blooms Taxonomy					
Cognitive Domain: knowledge and mental skills. (C)		Psychomotor Domain: Motor skills. (P)		Affective Domain: feelings, values, dispositions, attitudes, etc (A)	
• C1	Remembering	P1	Imitation	A1	Receive
• C2	Understanding	P2	Manipulation	A2	Respond
• C3	Applying	P3	Precision	A3	Value
• C4	Analyzing	P4	Articulation	A4	Organize
• C5	Evaluating	P5	Naturalization	A5	Internalize
• C6	Creating				

Educational Relevance to Theme

This case allows learners to trace disease progression:

Gene mutation → Altered protein structure → Enzyme dysfunction → Metabolic failure → Clinical presentation

It reinforces:

- Gene expression and mutation
- Enzyme kinetics and regulation
- Metabolic adaptation during fasting
- Familial inheritance patterns
- Role of molecular diagnostics in clinical practice

Learning Objectives

By the end of this theme, the student will be able to:

- Explain the molecular basis of gene expression, including transcription, translation, and regulation of enzymes.
- Describe the role of enzymes, cofactors, and inhibitors in normal metabolic processes and disease states.
- Correlate molecular and genetic abnormalities with common clinical conditions such as metabolic disorders, infertility, and cancer.
- Understand basic molecular mechanisms underlying inherited and acquired genetic diseases.
- Apply principles of molecular biology and genetics to interpret simple clinical and laboratory scenarios.

Appreciate the relevance of molecular medicine in diagnosis, prognosis, and therapeutic decision-making.

Integration Framework

Harden Level 9 – Multidisciplinary Integration

This C³6 session operates at **Harden Level 9**, where multiple disciplines address the same clinical problem in parallel, maintaining disciplinary identity while reinforcing conceptual alignment.

Disciplines Involved

- **Anatomy**
 - Liver and skeletal muscle structure involved in glucose metabolism

- Anatomical basis of muscle weakness and exercise intolerance
- **Biochemistry**
 - Enzyme kinetics, regulation, and metabolic pathways
 - Impact of genetic mutations on enzyme activity
- **Medicine**
 - Clinical evaluation of fasting hypoglycemia
 - Diagnostic reasoning in inherited metabolic disorders
- **Surgery**
 - Peri-procedural metabolic considerations
 - Role in diagnostic evaluation where indicated

Each discipline contributes **complementary insights** without content fusion, fulfilling the criteria of multidisciplinary integration

Explicit EPA Mapping

EPA-1: Interpret Clinical and Laboratory Data

Entrustment Level: 1–2

Students interpret fasting glucose levels and enzyme assays under supervision.

EPA-2: Apply Basic Science to Clinical Reasoning

Entrustment Level: 1

Students explain how molecular mutations produce clinical disease.

EPA-3: Communicate Findings in a Structured Manner

Entrustment Level: 1–2

Students present the case during group discussions.

EPA-4: Demonstrate Professionalism and Teamwork

Entrustment Level: 1

Students engage respectfully in multidisciplinary learning.

Mapping to Harden Levels

- **Level 8 (Complementary):**
Coordinated teaching of genetics, biochemistry, and anatomy around a shared theme
- **Level 9 (Multidisciplinary):**
Parallel disciplinary analysis of the same clinical case
- **Level 10 (Interdisciplinary):**
Early synthesis of molecular, biochemical, and clinical data into a unified explanation

Teaching–Learning Strategy

- Case-based discussion
- Facilitated multidisciplinary dialogue
- Guided molecular-to-clinical reasoning
- Early clinical exposure emphasis

Assessment Alignment

- MCQs (conceptual and application-based)
- SAQs focusing on molecular–clinical correlation
- OSPE/OSVE elements where applicable

Summary Statement

Theme Five exemplifies RMU-12’s philosophy of “From Isolation to Beyond Boundaries” by translating molecular biology and genetics into meaningful clinical understanding through a structured Clinico -Concept Connect session. Operating at Harden Level 9 and aligned with early EPAs, this theme prepares students for progressive entrustment, clinical reasoning, and future practice-ready learning in molecular and precision medicine.

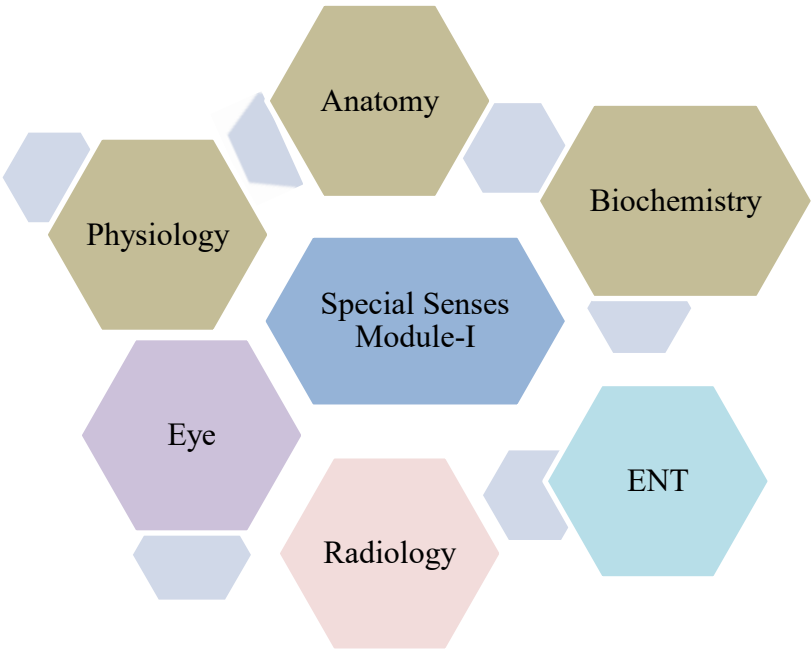
RMU – 12 Integrated Modular MBBS Curriculum 2026

Isolation to Beyond Boundaries

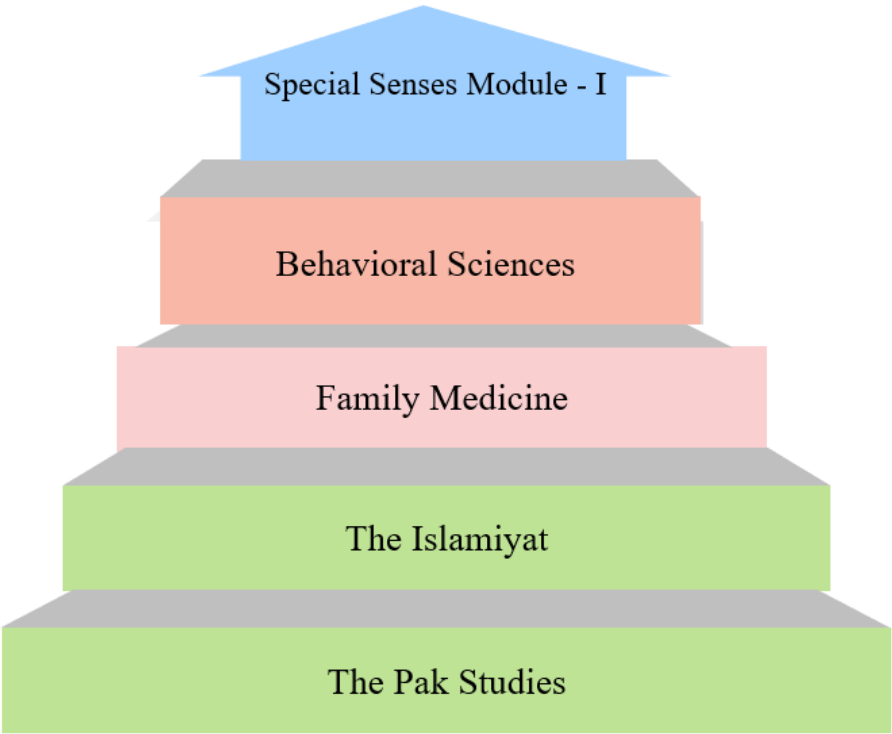
Study Guide

Special Senses Module - I

Integration



Disciplines in Special Senses Module-I



Spiral / General Education Cluster Courses

Discipline Wise Details of Modular Contents

Integration								
Theory								
Block	Subjects	Embryology	Histology	Histology Practical SKL. Lab.	Gross Anatomy	CBL	SDL	
VI	Anatomy	- Development of Eye - Development of Pharyngeal arches - Development of Ear	- Histology of Eye - Histology of Ear	- Cornea - Retina - External and Internal ear	- Facial and superior aspect of cranium (Norma frontalis, Norma verticalis) - External surface of cranial base (Norma basalis) - Lateral and occipital aspect of cranium (Norma lateralis, occipitalis) - Mandible - Temporomandibular joint - Face - Scalp - Orbit boundaries and Extraocular muscles - Vessels and nerves of orbit - Eyeball - Eyelid and lacrimal apparatus - Parotid and temporal region - Infratemporal fossa - Pterygopalatine fossa - External and middle ear - Inner ear - Nose and paranasal sinuses	- Oculomotor nerve palsy - Extra Dural hemorrhage	- Norma frontalis, verticalis and basalis - Lateralis and occipitalis, TMJ & Mandible - Orbit boundaries - Extraocular muscles - Vessels and Nerves of orbit - Temporal and Infra temporal region, Pterygopalatine fossa - External and middle ear	
	Physiology	Physiology of Ear & Eye						
	Biochemistry	Receptors, Second messengers, Neurotransmitters, Vitamin A role in vision						
	Spiral Courses							
	The Islamiyat	- Equality among humans, religious freedom, the principle of merit, justice - Women's Rights - The importance of the crescent moon (in the light of Hadith).						

	• Pak Studies	• The services/contributions of Hazrat Shah Waliullah-I • The services/contributions of Hazrat Shah Waliullah-II • The Aligarh Movement-I • The Aligarh Movement-II • The 14 Points of Quaid-e-Azam-I • The Constitution of 1973-I
	• Behavioral Sciences	• Sleep & Arousal
	• Radiology	• General Radiologic Concepts
	• Family Medicine	• Approach to a patient with earache
	Vertical Integration	
	• ENT	• Nasal polyp & Sinusitis & Diseases of External Nose • Otitis Media Ear Discharge & Hearing Problems in Children • Facial fractures • Deafness • Vertigo
	• Eye	• Refractive Errors Strabismus • Ocular trauma & Ocular Procedures • Conjunctivitis Chalazion • Cataract & Glaucoma

Special Senses Module-I Team

Module Name	:	Special Senses Module-I
Duration of module	:	04 Weeks
Coordinator	:	Dr. Sadia Aman
Co-coordinator	:	Dr. Minahil Haq
Reviewed by	:	Module Committee

Module Committee			Module Task Force Team		
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Khurram	1.	Coordinator	Dr. Sadia Aman (Assistant Professor of Anatomy)
2.	Director DME & Dean Basic Sciences	Prof. Dr. Ifra Saeed	2.	DME Focal Person	Dr. Farzana Fatima
3.	Additional Director (Assessment) DME	Dr. Arsalan Manzoor Mughal	3.	Co-coordinator	Dr. Minahil Haq (Senior Demonstrator of Anatomy)
4.	Chairperson Physiology	Prof. Dr. Samia Sarwar	4.	Co-Coordinator	Dr. Fareed Ullah Khan (Demonstrator of Physiology)
5.	Chairperson Anatomy	Prof. Dr. Ayesha Yousaf	5.	Co-coordinator	Dr. Khalid Yaqoob (Demonstrator of Biochemistry)
6.	Chairperson Biochemistry	Dr. Aneela Jamil			
7.	Focal Person Anatomy 2 nd Year MBBS	Dr. Maria Tasleem			
8.	Focal Person Physiology	Dr. Sidra Hamid	DME Implementation Team		
9.	Focal Person Pharmacology	Dr. Zunera Hakim	1.	Director DME	Prof. Dr. Ifra Saeed
10.	Focal Person Pathology	Dr. Syeda Ayesha	2.	Implementation Incharge 1st & 2 nd Year MBBS	Dr. Arsalan Manzoor Mughal
11.	Focal Person Behavioral Sciences	Dr. Zona Tahir			Dr. Farzana Fatima
12.	Focal Person Community Medicine	Dr. Maria	3.	Assistant Director DME	Dr. Farzana Fatima
13.	Focal Person Quran Translation Lectures	Dr. Fahd Anwar	4.	Editor	Muhammad Arslan Aslam
14.	Focal Person Family Medicine	Dr. Sadia Khan			

Module V – Special Senses Module-I

Rationale: Visual system is a blessing, and no one can underestimate the importance of sight in one's life. It is a highly sensitive system. Unfortunately, it is among the neglected parts of health care and millions of people are getting blind either due to negligence or inappropriate treatment. Refractive errors, cataract, glaucoma and diabetic eye disease are among the ophthalmic diseases which can be easily treated, and morbidity prevented if diagnosed earlier. A young doctor must know how to screen out eye diseases and treat where possible. It is our responsibility to provide them with the required acumen.

Ear, Nose and Throat disorders are very common in the community and form a major portion of clinical practice of a general / family physician. Common ENT problems like pharyngitis, tonsillitis, Otitis media, rhinosinusitis, nasal allergy, deafness, vertigo and balance problems can be diagnosed and treated easily. The prevalence of cancer of the upper aerodigestive tract is very high in Pakistan. These patients must be diagnosed and treated at the early stages to reduce morbidity and mortality. Medical students must be made aware of the importance of proper management of ENT problems for the benefit of community and humanity.

Module Outcomes

By the end of the module, students will be able to:

Knowledge

- Integrate the basic knowledge and clinical problems.
- Take detailed history, examine the patients and make a provisional diagnosis with the plan of management.
- Timely refer the patient to an ophthalmologist or ENT specialist.
- Used technology based Medical Education including **Artificial Intelligence**
- Appreciate concept and importance of **Family Medicine, Biomedical Ethics, & Research.**

Skills

- Demonstrate effective skill for performing and interpreting various laboratory tests like pregnancy test.
- Demonstrate awareness of ethical, legal and social implication of issues related to bioethics.

Attitude

- Demonstrate effective communication skill strategies while interacting with patients.
- Demonstrate teamwork and positive interaction with colleges.
- Demonstrate self learning attitude and problem-solving skills.

Terms & Abbreviations

Contents

- Domains of Learning
- Teaching and Learning Methodologies/Strategies
 - Clinico Concept Connect Session (C³6)
 - Large Group Interactive Session (LGIS)
 - Small Group Discussion (SGD)
 - Self-Directed Learning (SDL)
 - Case Based Learning (CBL)
 - Problem- Based Learning (PBL)
 - Skill Labs/Practicals (SKL)

Tables & Figures

- Table1. Domains of learning according to Blooms Taxonomy
- Figure 1. Prof Umar's Model of Integrated Lecture
- Table2. Standardization of teaching content in Small Group Discussions
- Table 3. Steps of taking Small Group Discussions
- Figure 2. PBL 7 Jumps Model

Table 1. Domains of Learning According to Blooms Taxonomy

Sr. #	Abbreviation	Domains of learning
1.	C	Cognitive Domain: knowledge and mental skills.
	• C1	Remembering
	• C2	Understanding
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	• C5	Evaluating
	• C6	Creating
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3.	A	Affective Domain: feelings, values, dispositions, attitudes, etc
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Teaching and Learning Methodologies / Strategies

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This session moves beyond traditional discipline-based teaching by fostering **conceptual integration, contextual learning, and early clinical exposure**, enabling students to appreciate the relevance of basic sciences in patient care from the outset of their medical training.

Rather than teaching facts in isolation, the session emphasizes:

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The focus remains on **conceptual clarity, clinical correlation, and professional competence**, rather than diagnosis-driven or management-heavy discussions.

Structure of the Clinico -Concept Connect Session

The session is structured into clearly defined phases to ensure alignment with learning outcomes and progressive student engagement:

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Implementation Strategy

The Clinico -Concept Connect Session is implemented as a **planned, scheduled activity** within the integrated curriculum and follows these principles:

- **Faculty Collaboration:** Basic science and clinical faculty jointly design and facilitate sessions to ensure coherence and relevance.
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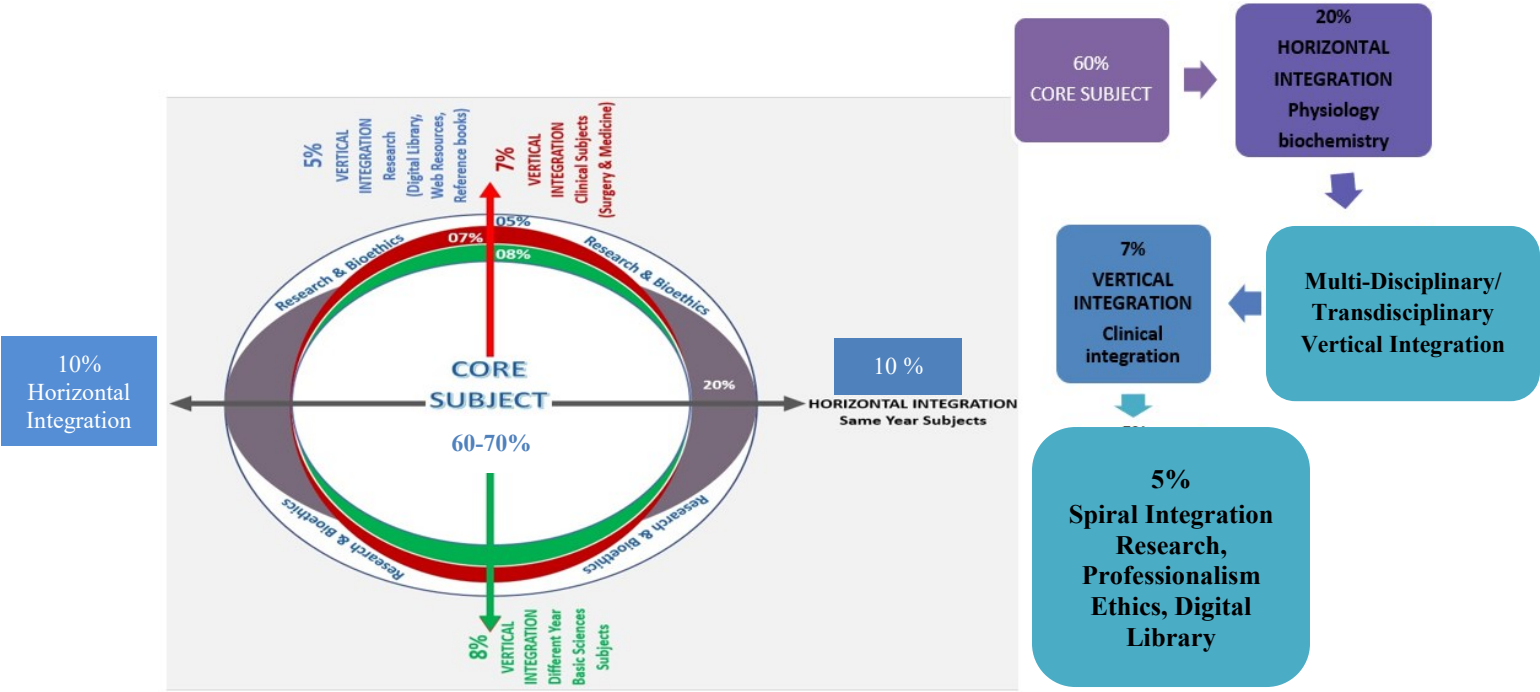
Educational Value

Through its integrated design, the Clinico -Concept Connect Session:

- Strengthens **conceptual understanding**
- Enhances **clinical reasoning and analytical skills**
- Encourages **horizontal and vertical integration**
- Promotes **student engagement and ownership of learning**
- Prepares learners to become **practice-ready, concept-driven clinicians**

Large Group Interactive Session (LGIS)

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



Prof Umar's Model of Integrated Lecture

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 help to clarify the concepts.

Table 2. Standardization of teaching content in Small Group Discussions

S. No	Topics	Approximate %
1	Title Of SGD	
2	Learning Objectives from Study Guides	
3	Core Concepts of the topic	60%
4	Horizontal Integration	24%
5	Vertical Integration	08%
6	Related Advance Research points	08%
7	Related Ethical points	
8	Artificial Intelligence	
9	Family Medicine	

Table 3. Steps of Implementation of Small Group Discussions

Step 1	Case presentation and 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 log book	5 min
Step 16	Ending remarks	

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 multi-disciplinary/transdisciplinary and interdisciplinary.
- Learning resources will be given to students = Textbook (page no), web site
- Assessment:
 - i Will be online on LMS (Mid module/ end of Module)
 - ii.OSPE station

Case Based Learning (CBL)

- It's a learner centered model which engages students in discussion of specific case scenarios that typically resemble real world examples.
- Case Scenarios must be multi-disciplinary/transdisciplinary and interdisciplinary
- 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.

Problem Based Learning (PBL)

- Problem-based learning (PBL) is a student-centered approach in which students learn about a subject by working in groups to solve an open-ended problem.
- This problem is what drives the motivation and the learning.

The 7- Jump-Format of PBL (Maastricht Medical School)		Learning Domain
Step 7	Synthese & Report	C6
Step 6	Collect Information from outside	C6
Step 5	Generate learning Issues	C6
Step 4	Discuss and Organise Ideas	C4
Step 3	Brainstorming to Identify Explanations	C3
Step 2	Define the Problem	C1
Step 1	Clarify the Terms and Concepts of the Problem Scenario	C1
Problem- Scenario		

Figure 2. PBL 7 Jumps Model

Self-Directed Learning (SDL) at Rawalpindi Medical University (RMU)

What is Self-Directed Learning (SDL)?

Self-Directed Learning (SDL) is a learning approach in which students take responsibility for their own learning. In SDL, students are expected to:

- Identify what they need to learn
- Set learning goals
- Use appropriate learning resources
- Study independently
- Evaluate their own understanding

Faculty members act as facilitators and guides, helping students stay on track and achieve the learning outcomes.

Why is SDL Important in Medical Education?

SDL is a key part of modern medical education because it helps students develop skills needed for **lifelong learning**. SDL is important because it:

- Encourages independent and active learning
- Builds critical thinking and problem-solving skills
- Improves the ability to search and use evidence-based medical information
- Helps students become responsible and reflective learners
- Prepares future doctors to keep learning throughout their careers

Medical knowledge is constantly changing, so SDL helps students stay updated even after graduation.

SDL at RMU (How It is Conducted)

Rawalpindi Medical University (RMU) has formally incorporated SDL into the MBBS curriculum from Second Year to Final Year.

RMU has developed structured curricula of Self-Directed Learning (SDL) across all professional years. These SDL curricula include:

- Approved SDL topics aligned with each module
- Clearly stated learning objectives for every topic
- A wide range of learning resources, including:
 - Textbook chapters
 - Research articles
 - Clinical guidelines
 - Online videos and interactive learning content
 - Resource links shared through official platforms

SDL at RMU is therefore a planned, organized, and curriculum-based learning activity, not just additional reading.

SDL Hours in the MBBS Program

SDL at RMU is implemented longitudinally across all professional years.

- The total SDL contribution is more than 500 hours
- These hours are distributed from Second Year to Final Year MBBS



- The purpose is to gradually develop independent learning skills throughout the program

Assessment of SDL at RMU

At RMU, SDL is not only a learning strategy but also an assessed component of the curriculum.

- Students are provided SDL topics with objectives and learning resources.
- Students study these topics independently.
- To ensure regular engagement, RMU conducts weekly online LMS-based assessments
- These assessments help students:
 - Stay consistent in learning
 - Test their understanding
 - Receive feedback for improvement

Thus, SDL learning progress is continuously monitored through the institutional LMS system.

Alignment with PM&DC and WFME Standards

SDL at RMU is aligned with national and international standards of medical education.

PM&DC

Pakistan Medical & Dental Council (PM&DC) emphasizes structured teaching, learning strategies, and internal assessment systems within undergraduate medical education.

WFME

World Federation for Medical Education (WFME) standards highlight the importance of:

- Student-centered learning
- Independent learning skills
- Use of diverse learning resources
- Continuous assessment and quality assurance

RMU's structured SDL program supports these global standards.

Practical Sessions/Skill Lab (SKL)

Practical Session/ Skill Lab (SKL)	
Demonstration/ power point presentation 4-5 slide and relevant clinical videos where required	10-15 minutes
Practical work	25-30 minutes
Write/ draw and get it checked by teacher	20-25 minutes
05 mcqs at the end of the practical	10 minutes
At the end of module practical copy will be signed by head of department	
At the end of block the practical copy will be signed by Head of Department Dean Medical education department QEC	

Themes, Learning Objectives, Teaching Strategies & Tool of Assessments

Contents

- **Horizontally Integrated Basic Sciences (Anatomy, Physiology & Biochemistry)**
- **Large Group Interactive Session:**
 - Anatomy (LGIS)
 - Physiology (LGIS)
 - Biochemistry (LGIS)
- **Small Group Discussions**
 - Anatomy (SGD)
 - Physiology (SGD)
 - Biochemistry (SGD)
- **Self-Directed Topic, Learning Objectives & References**
 - Anatomy (SDL)
 - Physiology (SDL)
 - Biochemistry (SDL)
- **Skill Laboratory**
 - Anatomy
 - Physiology
 - Biochemistry
- **Learning Management System (LMS)**
 - Anatomy (LMS)
 - Physiology (LMS)
 - Biochemistry (LMS)

Special Senses Module – I – Second Year MBBS

Duration of Module (Three Weeks)

Sr No.	Themes	Duration
1.	A patient with Blurred Vision and Red-Flag Eye Pressure Symptoms	1 st Week
2.	Vertigo & Hearing Loss (with abnormal bedside hearing tests)	2 nd Week
3.	A Patient with Accommodation Failure/Strabismus; Trauma Links	3 rd Week

Theme 1: A patient with Blurred Vision and Red-Flag Eye Pressure Symptoms (1st Week)

Theme	Rationale	Learning objectives
A patient with Blurred Vision and Red-Flag Eye Pressure Symptoms	Week focuses on optics/refraction + retinal structural function and intra-ocular pressure, then links to cataract & glaucoma as key causes of progressive blurring/pressure-related symptoms. Also anchors related head–ENT context (external/middle ear; nasal/sinus disease).	Students will integrate basic anatomical, physiological, and biochemical principles of aqueous humor dynamics and intraocular pressure to evaluate acute angle-closure glaucoma. They will gain competence in taking a focused history, performing a basic structured eye examination, recognizing emergency red flags, and arranging prompt senior escalation
Case Scenario 1: Acute Blurred Vision with Headache, Halos and Eye Pain Clinical Scenario A 48-year-old female was brought to the Ophthalmology outpatient department with sudden onset of severe pain in the right eye associated with blurred vision for the last six hours. The patient reported that the symptoms started in the evening while she was reading in dim light. Initially, she noticed mild discomfort and heaviness around the right eye, which rapidly progressed to severe ocular pain and frontal headache. She also complained of seeing colored halos around lights and marked reduction in vision in the affected eye. The patient developed nausea and one episode of vomiting before coming to the hospital. She stated that bright light worsened her discomfort and she preferred to keep the affected eye closed. There was no history of trauma, discharge from the eye, fever, or previous ocular surgery. She had experienced a few similar but milder episodes of transient blurred vision and halos in the past, especially in dim illumination, but these episodes resolved spontaneously. There was no history of diabetes mellitus or hypertension. She was not using spectacles regularly, although she had been told previously that she might need glasses for near vision. The overall presentation raised concern for an acute rise in intraocular pressure, possibly acute angle-closure glaucoma, requiring urgent clinical assessment and management. Past Medical History - No known diabetes mellitus or hypertension - No previous ocular surgery - No known history of chronic glaucoma - Occasional episodes of transient blurred vision in the past - No history of ocular trauma Drug History - No regular medication - Took oral analgesic at home with minimal relief - No history of steroid use		

- No known drug allergy

Family History

- Mother had poor vision in old age, exact diagnosis unknown
- No confirmed family history of glaucoma

Social History

- Housewife
- Frequently reads in dim light
- No smoking or alcohol use reported
- No occupational exposure to chemicals or radiation

Examination**General Physical Examination**

Middle-aged female appears anxious and uncomfortable due to severe right eye pain and headache.

Pulse: 96/min

Blood Pressure: 132/84 mmHg

Temperature: 98.6°F

Respiratory Rate: 18/min

Local Eye Examination

- Right eye shows circumcorneal congestion
- Cornea appears hazy
- Pupil is mid-dilated and sluggishly reactive to light
- Anterior chamber appears shallow on torchlight examination
- Eyeball feels firm on gentle digital palpation
- Visual acuity is reduced in the right eye
- Patient reports colored halos around light
- Left eye appears normal on gross examination

Neurological / Cranial Nerve Examination

- Pupillary light reflex is sluggish in the affected eye
- Extraocular movements are intact

- No diplopia reported
- No facial sensory loss
- No focal neurological deficit detected

Systemic Examination

CVS, Respiratory System, Abdomen: No significant abnormality detected.

Educational Relevance: Discipline-wise Integration

Discipline	Relevance
Anatomy	Anatomy of eyeball, anterior chamber, cornea, iris, ciliary body, lens, aqueous humor drainage pathway, orbit, extraocular muscles, cranial nerves related to eye, and development and histology of eye
Physiology	Physiology of vision, optics of vision, refractive errors, accommodation, pupillary reflex, intraocular pressure, aqueous humor dynamics, retinal function, and visual pathway
Biochemistry	Receptors, second messengers, neurotransmitters, G-proteins, and role of Vitamin A in vision
Pathology	Pathophysiology of raised intraocular pressure, optic nerve damage, corneal edema, and glaucomatous visual loss
Pharmacology	Basic principles of drugs used to reduce intraocular pressure, including agents affecting aqueous humor production and drainage
Ophthalmology / Clinical Medicine	Recognition of acute angle-closure glaucoma as an ophthalmic emergency requiring urgent referral and management
Radiology / Clinical Correlation	Role of imaging in selected orbital or neurological differentials where indicated
Behavioral Sciences	Patient counseling, anxiety management, compliance with treatment, and awareness of warning symptoms

Entrustable Professional Activities (EPAs)

1. Obtain a focused history from a patient presenting with acute blurred vision, eye pain, headache, halos, nausea, or vomiting, and identify red-flag features suggestive of raised intraocular pressure.
2. Perform a basic structured eye examination including visual acuity, inspection of redness, corneal clarity, pupillary reaction, ocular movements, and gross assessment of anterior chamber depth.

- 3. Recognize acute painful red eye with reduced vision and halos as an emergency presentation requiring urgent ophthalmological referral and immediate management.
- 4. Counsel the patient and attendants regarding the seriousness of sudden visual loss, importance of early treatment, compliance with medication, and need for follow-up.

EPAs Detail Annexure-II

Harden Level 11 Justification

This case represents an authentic patient-care task in which students must integrate anatomy, physiology, biochemistry, pathology, pharmacology, ophthalmology, and clinical reasoning simultaneously. The patient is approached as a unified clinical problem rather than as separate subject-based teaching. Students are required to identify red-flag symptoms, understand the structural and functional basis of raised intraocular pressure, correlate biochemical and physiological mechanisms with clinical findings, and recognize the need for urgent referral and management. This reflects practice-based interdisciplinary learning consistent with Harden Level 11 integration.

Theme 1 Clinico-Concept Connect (C³6)

Acute Raised Intraocular Pressure: The Ophthalmic Emergency

Recognizing the Patient Presentation



Symptom Triad

Patients typically present with sudden severe eye pain, blurred vision, colored halos around lights, and a frontal headache.

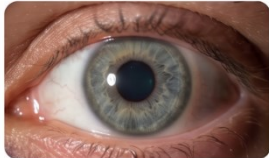
Nausea and Vomiting

Systemic symptoms like nausea and vomiting often accompany high pressure, mimicking gastrointestinal issues.

⚠️ "Sight-Threatening" Window

Immediate referral is mandatory as delayed treatment leads to permanent, irreversible visual loss.

Red-Flag Physical Signs



Ocular Appearance

Look for circumferential congestion (deep redness) and a hazy, cloud-like cornea.

Pupillary Reaction

A mid-dilated, fixed, or sluggishly reactive pupil is a critical indicator of an acute attack.

Feature	Emergency Indicator (Red Flag)
Vision	Sudden reduction or "colored halos" around lights
Pain	Severe ocular pain often radiating to the forehead
Eye Surface	Hazy/cloudy cornea with deep-seated redness



Gross Assessment

Check for a shallow anterior chamber using torchlight and firm eyeball sensation on gentle palpation.

Harden Level 11 Transdisciplinary

62 | Page

Specific Learning Objectives

Subject	Code	Topics	At the end of lecture students should be able to:	Learning Domains	Calgary Gauge	Teaching Strategy	Assessment Tools
Development							
Anatomy (LGIS)	M5-SpS-A-001	Development of Eye 1	- Describe the different embryological sources of development of eye. - Describe development of eye field on rostral neural tube. - Enlist derivatives of optic cup and development of retina. - Recall the differentiation of optic grooves and optic vesicle. - Discuss transformation of optic vesicles into optic cup. - Describe development of retina. - Correlate with the clinical conditions. - understand provision of curative and preventive health care measures. - Practice principles of bioethics. - Apply strategic use of AI in health care. - Read relevant research article.. - Analyze the sequential embryological development of the eye from the neural tube, surface ectoderm, neural crest cells, and mesoderm, and correlate the contribution of each germ layer to the mature eye. - Evaluate the developmental events responsible for normal closure of the embryonic choroidal (optic) fissure and predict the consequences of its failure. - Design an embryological pathway explaining the development of a selected congenital eye anomaly, integrating normal and abnormal developmental processes.	C1 C2 C1 C2 C1 C1 C2 C2 C3 C3 C3 C3 C3 C4 C5 C6	Should know Should know Should know Should know Should know Should know Should know Must know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know	LGIS	MCQ SAQ VIVA OSPE
Histology							
	M5-SpS-A-002	Histology of Eye 1	Discuss the histology of different coats of the eyeball.	C2	Should know		

			Analyze the anatomical features visible in the norma frontalis and norma verticalis, distinguishing the bones, sutures, landmarks.	C4	Nice to know		
			Evaluate the clinical significance of the anatomical landmarks observed in the facial and superior aspects of the cranium in relation to cranial injuries, congenital anomalies, and surgical approaches.	C5	Nice to know		
			Create a labeled anatomical diagram or three-dimensional model of the norma frontalis and norma verticalis, accurately illustrating the bones, sutures, and key landmarks while explaining their anatomical and clinical relevance.	C6	Nice to know		
	M5-SpS-A-004	External Surface of Cranial Base (Norma Basalis)	Describe bones forming the base of skull	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			Explain the details of anterior, middle and posterior part of base of skull	C2	Should know		
			Identify different foramina and structures passing through them.	C1	Should know		
			Explain the attachments and relations of base of skull.	C2	Should know		
			Fracture of cranial base	C2	Should know		
			Head injuries and intracranial hemorrhage	C3	Should know		
			Correlate with the clinical conditions	C3	Must know		
			understand provision of curative and preventive health care measures.	C3	Nice to know		
			Practice principles of bioethics	C3	Nice to know		
			Apply strategic use of AI in health care	C3	Nice to know		
			Read relevant research article	C3	Nice to know		
			Analyze the anatomical features and relationships of the bones, foramina, and processes visible on the external surface of the cranial base (norma basalis).	C4	Nice to know		
			Evaluate the clinical significance of the foramina and anatomical landmarks of the external cranial base in skull base injuries and surgical procedures.	C5	Nice to know		
			Create a labeled representation of the external surface of the cranial base (norma basalis) highlighting its major bones, foramina, and anatomical landmarks.	C6	Nice to know		

	M5-SpS-A-005	Lateral & Occipital Aspect of Cranium (Norma Lateralis. & Occipitalis)	Enlist various bones in normal lateralis. Describe the cranial and facial subdivision. Define external acoustic meatus,	C1	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			Discuss attachments of mastoid and styloid process.	C2	Should know		
			Explain the boundaries of Norma occipitalis.	C2	Should know		
			Identify different foramina and structures passing through them at the base.	C1	Should know		
			Explain its attachments and relations.	C2	Should know		
			Correlate with the clinical conditions	C3	Must know		
			understand provision of curative and preventive health care measures.	C3	Nice to know		
			Practice principles of bioethics	C3	Nice to know		
			Apply strategic use of AI in health care	C3	Nice to know		
			Read relevant research article	C3	Nice to know		
			Analyze the anatomical landmarks of the norma lateralis and norma occipitalis.	C4	Nice to know		
			Evaluate the clinical importance of the lateral and occipital cranial landmarks.	C5	Nice to know		
			Create a labeled diagram of the norma lateralis and norma occipitalis showing key anatomical landmarks.	C6	Nice to know		
	M5-SpS-A-006	Temporomandibular joint (TMJ)	Discuss the temporomandibular joint, its type, formation and neurovascular supply.	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			Describe the movement's axis and muscles involved.	C2	Should know		
			Correlate clinically disorders of the temporo-mandibular joint.	C3	Should know		
			Correlate with the clinical conditions	C3	Must know		
			understand provision of curative and preventive health care measures.	C3	Nice to know		
			Practice principles of bioethics	C3	Nice to know		
			Apply strategic use of AI in health care	C3	Nice to know		
			Read relevant research article	C3	Nice to know		
			Analyze the anatomical structure and movements of the temporomandibular joint (TMJ).	C4	Nice to know		
			Evaluate the clinical significance of TMJ anatomy in common disorders	C5	Nice to know		

			• Create a labeled diagram of the TMJ showing its key anatomical structures.				C6	Nice to know		
	M5-SpS-A-007	Scalp and temple	• Explain the extent of scalp				C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			• Describe the Scalp layers, nerves & vessels				C2	Should know		
			• Discuss the clinical correlates like scalp injuries and scalp wounds.				C3	Should know		
			• Correlate with the clinical conditions				C3	Must know		
			• understand provision of curative and preventive health care measures.				C3	Nice to know		
			• Practice principles of bioethics				C3	Nice to know		
			• Apply strategic use of AI in health care				C3	Nice to know		
			• Read relevant research article				C3	Nice to know		
			• Analyze the anatomical layers and structures of the scalp and temple.				C4	Nice to know		
			• Evaluate the clinical significance of the scalp and temple in trauma and infection.				C5	Nice to know		
			• Create a labeled diagram of the scalp and temple showing key anatomical features.				C6	Nice to know		
Anatomy (SDL)	M5-SpS-A-008	Craniosynostosis	• Define boundaries of Norma frontalis and verticalis.				• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 823-8291). • https://youtu.be/rr3-V7Qhf8E • https://youtu.be/35Y71cRBqs8			
			• Enumerate their muscle attachment.							
			• Describe and features of its structure							
			• Read relevant research article							
Anatomy (SKL)	M5-SpS-A-009	Cornea	• Identify the histological slide cornea. • Illustrate the microscopic picture of Cornea. • Enlist two points of identification of each • Read a relevant research article				P C2 C1 C3	Skill Lab	OSPE	
Physiology (LGIS)	M5-SpS-P-001	Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	1. Explain the basic physiology of eye and its refractive surfaces	C2	Must Know	A	• Ganong’s Review of Medical Physiology. 25TH Edition. Section 02, Vision	• https://www.britannica.com/science/human-eye • https://youtu.be/laEFdlxW0rA	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment,	
			2. Discuss the physical principles of optics	C2	Should Know	B				
			3. Describe the mechanism of accommodation and its control	C2	Must Know	A				

			4. Describe the errors of refraction (Myopia, hyperopia, astigmatism and their correction by using different lens systems)	C2	Must Know	A	(Chapter 09, Page 177,185) • Physiology by Linda S. Costanzo 6thEdition, Neurophysiology chapter 3, page 85 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10, Page 374-378) • Physiological Basis of Medical Practice by Best & Taylor's.13th Edit ion, Vision (Chapter 64, Page 1086) • Textbook of Medical Physiology by Guyton & Hall.14thEdition. Section 10. (Chapter 50, Page 627-635)		MST based Assessment) OSPE
	M5-SpS-P-002	Introduction to Physiology of	1.Describe physiology of external ear	C2	Must Know	A			MCQ SEQ

		external ear, Middle ear	2.Describe physiology of middle ear 3. Explain structure of middle ear	C2	Must Know	A	- Ganong's Review of Medical Physiology.25TH Edition.Section 02, (Chapter 10, Page 199) - Physiology by Linda S. Costanzo 6thEdition,Neuro physiology chapter 3, page 92 - Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10,Page 364-371) - Textbook of Medical Physiology by Guyton & Hall.14thEdition.. Section 10. (Chapter 53, Page 663)	https://youtu.be/VRLm7cpmZSk https://www.sciencedirect.com/science/article/pii/S0378595522002192	VIVA VOCE MCQ (LMS based Assessment, MST based Assessment) OSPE
	M5-SpS-P-003	Fluid system of the eye Intraocular	1.Describe the formation and circulation of aqueous humor	C2	Must Know	A	Ganong's Review of	https://youtu.be/CKtLIOSh8o4	MCQ SEQ

		pressure, Function of the Structural Elements of the Retina	2.Explain the mechanism of regulation of intraocular pressure	C2	Must Know	A	Medical Physiology.25 TH Edition.Section02,Vision (Chapter 09, Page 178) - Physiological Basis of Medical Practice by Best & Taylor's.13th Edition,Vision(Chapter 64,Page 1094) - Textbook of Medical Physiology by Guyton & Hall.14th Edition.. Section 10. (Chapter 50, Page 635) (Chapter 51,Page 639)	https://youtu.be/7CFY4gxLnMY https://my.clevelandclinic.org/health/body/24611-aqueous-humor-vitreous-humor	VIVA VOCE MCQ (LMS based Assessment, MST based Assessment) OSPE
			3.Define glaucoma and its treatment	C1	Must Know	A			
	M5-SpS-P-004	Functions of Inner ear, Physiology of Hearing	1. Describe the physiology of hearing and function of tympanic membrane and ossicular system.	C2	Must Know	A	Ganong's Review of Medical Physiology.25TH Edition.Section02,Vision	https://youtu.be/Ie2j7GpC4JU https://youtu.be/ggdqp-oPb1Q https://www.urmc.rochester.edu/encyclopedia/	MCQ SEQ VIVA VOCE
			2. Define impedance matching and attenuation reflex	C1	Should Know	B			

			3. Explain the conduction of sound waves in the cochlea	C2	Nice To Know	C	(Chapter 10, Page 200,204) - Physiology by Linda S. Costanzo 6th Edition, Neuro physiology chapter 3, page 93 - Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10, Page 371-374) - Textbook of Medical Physiology by Guyton & Hall. 14th Edition.. Section 10. (Chapter 53, Page 664,669)	content.aspx?ContentTypeID=90&ContentID=P02025	MCQ (LMS based Assessment, MST based Assessment) OSPE
Physiology (SGD)	M5-SpS-P-0013	Physiology of Vision	1. Explain the basic physiology of eye and its refractive surfaces 2. Discuss the physical principles of optics 3. Describe the mechanism of accommodation and its control Describe the errors of refraction (Myopia, hyperopia,	- Ganong's Review of Medical Physiology. 25TH Edition. Section 02, Vision (Chapter 09, Page 177,185) - Physiology by Linda S.		https://www.britannica.com/science/human-eye https://youtu.be/lafFdlxW0rA	1.C2 2. C2 3. C2 4.C2	SGD	MCQ SEQ VIVA VOCE MCQ (LMS based Assessment, MST based Assessment) OSPE

			astigmatism and their correction by using different lens systems	Costanzo 6th Edition, Neurophysiology chapter 3, page 85 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10, Page 374-378) • Physiological Basis of Medical Practice by Best & Taylor's. 13th Edition, Vision (Chapter 64, Page 1086) Textbook of Medical Physiology by Guyton & Hall. 14th Edition..Section 10. (Chapter 50, Page 627-635)				
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Biochemistry (LGIS)	M2-SpS-B-01	Receptors	- Define sensory receptors and list the major receptor types involved in the special senses (photoreceptors, mechanoreceptors, and chemoreceptors). - Explain how sensory receptors convert external stimuli into electrical signals through the process of sensory transduction. - Apply the principles of receptor function to predict the sensory outcome of alterations in receptor activity in vision, hearing, taste, smell, or balance. - Differentiate and analyze the structural and functional characteristics of receptor cells involved in the special senses. - Evaluate the effects of receptor dysfunction on sensory perception and justify the resulting clinical manifestations. - Design a concept map illustrating the relationship between stimulus detection, receptor activation, signal transduction, and sensory perception in the special senses.	Should know	C1 C2 C3 C4 C5 C6	LGIS	MCQs SAQs SEQs Viva
	M2-SpS-B-02	Neurotransmitters	- List the major neurotransmitters involved in the transmission of sensory signals in the visual, auditory, olfactory, gustatory, and vestibular systems. - Explain the role of neurotransmitters in mediating signal transmission between sensory receptor cells and the nervous system in the special senses. - Apply knowledge of neurotransmitter function to predict the effects of altered neurotransmitter release or receptor activity on sensory perception. - Analyze the neurotransmitter pathways involved in different special sensory modalities and compare their mechanisms of signal transmission.	Must know	C1 C2 C3 C4 C5	LGIS	MCQs SAQs SEQs Viva

			- Evaluate the impact of neurotransmitter imbalances or receptor defects on the function of special sensory systems and associated clinical manifestations. - Design a schematic model illustrating the synthesis, release, receptor interaction, and termination of neurotransmitter action in a selected special sensory pathway.		C6		
	M2-SpS-B-03	Role of Vitamin A in Vision	- Define the role of Vitamin A and identify its biochemical forms involved in the visual cycle. - Explain how Vitamin A participates in the formation and regeneration of visual pigments required for phototransduction. - Apply knowledge of the visual cycle to predict the effects of Vitamin A deficiency on visual function. - Analyze the biochemical steps of the retinoid cycle and correlate them with the process of vision in rod and cone cells. - Evaluate the consequences of Vitamin A deficiency on ocular health and visual performance using biochemical principles. - Design a flowchart illustrating the metabolism of Vitamin A and its role in the visual cycle from light detection to regeneration of visual pigments.	Must know	C1 C2 C3 C4 C5 C6	LGIS	MCQs SAQs SEQs Viva
	M2-SpS-B-04	G-Proteins	- Define G-proteins and identify the major G-protein-coupled signaling pathways involved in special sensory functions. - Explain the role of G-proteins in transducing signals from sensory receptors to intracellular effector molecules in vision, olfaction, and taste. - Apply the principles of G-protein signaling to predict the effects of altered G-protein activity on sensory signal transmission.	Must know	C1 C2 C3 C4	LGIS	MCQs SAQs SEQs Viva

			- Analyze the molecular mechanisms of G-protein-mediated signal transduction in different special sensory systems and compare their biochemical pathways. - Evaluate the impact of defects in G-proteins or their associated signaling pathways on the function of special senses and related clinical conditions. - Design a diagrammatic model illustrating the sequence of events involved in G-protein-coupled signal transduction in a selected special sensory modality (e.g., vision, taste, or smell).		C5 C6		
Biochemistry (SGD)	M2-SpS-B-08	Neurotransmitter	- List the major neurotransmitters involved in the transmission of signals in the visual, auditory, olfactory, gustatory, and vestibular systems. - Explain the role of neurotransmitters in synaptic communication within the special sensory pathways. - Apply knowledge of neurotransmitter function to predict the effects of altered neurotransmitter activity on sensory perception. - Analyze the neurotransmitter mechanisms involved in different special senses and distinguish their roles in signal transmission. - Evaluate the impact of neurotransmitter imbalances on the function of special sensory systems and associated clinical manifestations. - Develop a concept map illustrating the synthesis, release, action, and termination of neurotransmitters in a selected special sensory pathway.	Must know	C1 C2 C3 C4 C5 C6	SGD	MCQs
Biochemistry (SDL)	M2-SpS-B-05	Receptors	Describe the classification, structure, and biochemical properties of receptors involved in special senses, including	Should know	Harper's Illustrated Biochemistry, 32nd Edition, Chapter 42: Hormone Action & Signal Transduction,		

			photoreceptors, mechanoreceptors, and chemoreceptors. - Explain the molecular mechanism by which sensory receptors convert external stimuli into intracellular signals through receptor activation and signal transduction pathways. - Correlate receptor dysfunction with alterations in sensory perception and discuss the biochemical basis of selected clinical disorders affecting vision, hearing, taste, or smell.		pg. 508–526 & Chapter 40: Membranes: Structure & Function, pg 467–487 Lippincott Illustrated Reviews: Biochemistry, 6th Edition, Chapter: Cell Signaling / Signal Transduction, pg 205–223		
	M2-SpS-B-06	Neurotransmitter	- Describe the synthesis, storage, release, and termination of action of neurotransmitters involved in special sensory pathways. - Explain the biochemical mechanisms through which neurotransmitters mediate signal transmission between sensory receptor cells and neurons in vision, hearing, taste, and smell. - Correlate abnormalities in neurotransmitter synthesis, release, or receptor interaction with disorders affecting special sensory functions.	Must know	Harper's Illustrated Biochemistry, 32nd Edition, Chapter 42: Hormone Action & Signal Transduction, pg 508–526 & Chapter 30: Conversion of Amino Acids to Specialized Products, pg 306–314 Lippincott Illustrated Reviews: Biochemistry, 6th Edition, Chapter: Cell Signaling, pg 205–223.		
Biochemistry (SKL)	M2-SpS-B-07	Interpretation of Labs Reports	- Interpret laboratory findings relevant to disorders of the special senses (e.g., Vitamin A deficiency and visual dysfunction) using appropriate biochemical principles. - Analyze laboratory reports and correlate abnormal biochemical parameters with the underlying	Must know	P	Skill Lab	OSPE

			mechanisms affecting vision, hearing, taste, or smell.				
ENT	M5-SpS-VI (ENT)-003	Nasal polyp & Sinusitis & Diseases of External Nose	Know definition of polyp	C1	LGIS	MCQs	
			Know different types of nasal Polyps, their etiology, pathophysiology and treatment	C1			
			Know latest management	C1			
			Classify Sinusitis	C1	LGIS	MCQs	
			Enlist clinical features of sinusitis.	C2			
			Know various diseases of external nose, their etiology	C1			
			Pathophysiology and know how to treat them	C1			
Eye	M5-SpS-VI (Eye)-003	Cataract & Glaucoma	Define	C1	LGIS	MCQs	
			Types of cataract				
			Surgical procedures				
			Define	C1	LGIS	MCQs	
			Types of cataract				
			Surgical procedures				
	M5-SpS-VI (Eye)-005	Conjunctivitis Chalazion	Define conjunctivitis	C1	LGIS	MCQs	
			Discuss the causes & types				
			Explain management in detail				

Spiral Courses (1st Week)

Behavioral Sciences

Code	Topic	At the End of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
M5-SpS-SI (BS)-001	Metacognition	- Define metacognition - Understand the neurobiological basis of metacognition	C1 C3	LGIS	MCQs,

The Islamiyat

Code	Topic	At the End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
M5-SpS-SI (I)-001	Equality among humans, religious freedom, the principle of merit, justice	Explain the concept of human equality in the context of healthcare and medical ethics.	C2	LGIS	MCQs
		Define religious freedom and its relevance in the healthcare setting.	C2		
		Explain how the Islamic (Hijri) calendar is based on lunar cycles and how it differs from the Gregorian calendar.	C2		

The Pak Studies

Code	Topic	At the End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
M5-SpS-SI (PKS)-001	The services/contributions of Hazrat Shah Waliullah-I-II	Describe the key contributions of Hazrat Shah Waliullah in the revival and reform of Islamic thought during the 18th century.	C2	LGIS	MCQs
		Explain the historical context in which Hazrat Shah Waliullah worked, especially the social, political, and religious conditions of the Indian subcontinent.	C2		

		Discuss the major scholarly works of Hazrat Shah Waliullah, especially his translation of the Quran into Persian and its impact on Muslim society.	C2	LGIS	MCQs
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Transdisciplinary (Hardens Level 11) Clinico-Concept Connect (C³6) Sessions for 1st Week

Session	Topic	Department	Educational Relevance	At the End of The Demonstration Student Should Be Able To	Learning Domain	Assessment Tool
Clinico-Concept Connect (C ³ 6) Session – I	A patient with Blurred Vision and Red-Flag Eye Pressure Symptoms	Anatomy	Anatomy of eyeball, anterior chamber, cornea, iris, ciliary body, lens, aqueous humor drainage pathway, orbit, extraocular muscles, cranial nerves related to eye, and development and histology of eye	Describe the gross anatomy of the eyeball, anterior chamber, posterior chamber, cornea, iris, ciliary body, lens, and retina.	C3	MCQs
				Explain the anatomical pathway of aqueous humor formation, circulation, and drainage through the trabecular meshwork and canal of Schlemm.	C3	MCQs
				Correlate a shallow anterior chamber and narrow iridocorneal angle with acute rise in intraocular pressure.	C4	MCQs
				Describe the anatomical basis of pupillary light reflex and the role of optic and oculomotor nerves.	C3	MCQs
				Discuss the histology of cornea and retina in relation to transparency and visual function.	C3	MCQs
				Explain the embryological development of the eye and its clinical relevance.	C3	MCQs
		Physiology	Physiology of vision, optics of vision, refractive errors, accommodation, pupillary reflex, intraocular pressure, aqueous humor dynamics, retinal function, and visual pathway	Explain the physiology of vision and the basic principles of optics.	C3	MCQs
				Describe accommodation and physiological basis of refractive errors.	C3	MCQs
				Explain the formation, circulation, and drainage of aqueous humor.	C3	MCQs
				Discuss the physiological regulation of intraocular pressure.	C3	MCQs
				Correlate raised intraocular pressure with blurred vision, halos, headache, nausea, and vomiting.	C4	MCQs
				Explain phototransduction and the role of retinal receptors in vision.	C3	MCQs
				Describe pupillary reflexes and visual pathway in relation to clinical findings.	C3	MCQs
		Biochemistry	Receptors, second messengers, neurotransmitters, G-	Explain the biochemical role of Vitamin A in vision.	C3	MCQs
				Correlate Vitamin A deficiency with night blindness and visual dysfunction.	C3	MCQs

			proteins, and role of Vitamin A in vision	• Describe the role of receptors, second messengers, G-proteins, and neurotransmitters in cellular signaling.	C3	MCQs
				• Relate biochemical signaling mechanisms to retinal function and visual perception.	C3	MCQs
				• Discuss the relevance of neurotransmitters in ocular physiology and neural transmission.	C3	MCQs
		Pathology	Pathophysiology of raised intraocular pressure, optic nerve damage, corneal edema, and glaucomatous visual loss	• Explain the basic pathophysiology of acute rise in intraocular pressure.	C3	MCQs
				• Describe how obstruction of aqueous humor drainage can lead to corneal edema, optic nerve damage, and visual loss.	C3	MCQs
				• Recognize acute angle-closure glaucoma as a sight-threatening emergency.	C3	MCQs
				• Differentiate acute glaucoma from conjunctivitis, migraine, uveitis, keratitis, and neurological causes of headache with visual symptoms.	C3	MCQs
				• Identify complications of untreated raised intraocular pressure.	C3	MCQs
		Pharmacology	Basic principles of drugs used to reduce intraocular pressure, including agents affecting aqueous humor production and drainage	• Outline the general principles of emergency pharmacological management of raised intraocular pressure.	C3	MCQs
				• Identify the major drug groups used in glaucoma management.	C3	MCQs
				• Explain how drugs may reduce aqueous humor production or increase its outflow.	C3	MCQs
				• Recognize the importance of timely treatment to prevent irreversible visual loss.	C3	MCQs
				• Counsel patients regarding compliance, follow-up, and avoidance of self-medication.	A2	MCQs
		Ophthalmology	Recognition of acute angle-closure glaucoma as an ophthalmic emergency requiring urgent referral and management	• Take a focused history from a patient presenting with acute painful red eye and blurred vision.	C3	MCQs
				• Identify red-flag symptoms such as severe eye pain, headache, colored halos, vomiting, reduced vision, and fixed or sluggish pupil.	C3	MCQs
				• Perform basic eye examination including visual acuity, pupillary reaction, torchlight examination, and gross assessment of anterior chamber depth.	C3	MCQs
				• Recognize acute angle-closure glaucoma as an ophthalmic emergency.	C3	MCQs
				• Understand the need for urgent referral and early management to prevent permanent visual loss.	C3	MCQs

Theme 2: Vertigo and Hearing Loss with Abnormal Bedside Hearing Tests (2nd Week)

Theme	Rationale	Learning objectives
Vertigo and Hearing Loss with Abnormal Bedside Hearing Tests	Core teaching centres on phototransduction/Vit-A pathways and, in parallel, hearing abnormalities with tuning-fork tests/audiometry plus the vestibular system so the dominant clinical presentation is dizziness/imbalance with hearing complaints and objective bedside testing.	Students will apply anatomical, physiological, and pathological knowledge of the ear and vestibulocochlear system to evaluate balance and hearing impairments. They will master conducting bedside ear and vestibular exams including Rinne and Weber tuning fork tests to differentiate conductive from sensorineural hearing loss while identifying clinical red flags and delivering fall-prevention counseling
Case Scenario 2 : Vertigo with Hearing Loss and Abnormal Tuning Fork Tests Clinical Scenario A 35-year-old male presented to the outpatient department with complaints of recurrent episodes of dizziness, spinning sensation, and reduced hearing in the right ear for the last four days. The patient described the dizziness as a feeling that the surroundings were rotating around him. The episodes were sudden in onset, lasted for several minutes to an hour, and were aggravated by sudden head movements. During the attacks, he felt unsteady while walking and had to sit down to avoid falling. He also complained of fullness in the right ear, ringing sound in the ear, and difficulty hearing conversations from the affected side. The patient reported nausea during severe episodes of vertigo but denied vomiting. There was no history of recent head trauma, fever, ear discharge, facial weakness, or loss of consciousness. He had experienced an upper respiratory tract infection about one week earlier, which resolved without medication. The patient was concerned because his hearing difficulty was affecting his routine work and communication. The overall presentation suggested involvement of the auditory and vestibular components of the inner ear, requiring clinical evaluation with bedside hearing tests, vestibular assessment, and relevant anatomical, physiological, biochemical, pathological, and pharmacological correlation. Past Medical History - No known diabetes mellitus or hypertension - No previous diagnosed ear disease - Recent history of upper respiratory tract infection - No previous history of chronic vertigo - No history of head injury or neurological disease Drug History - No regular medication - Took over-the-counter cold medication one week earlier - No history of ototoxic drug use reported - No known drug allergy		

Family History

- No significant family history of deafness
- No family history of recurrent vertigo or neurological disease

Social History

- Office worker
- Uses earphones frequently at high volume
- No smoking or alcohol use reported
- No occupational exposure to loud noise reported

Examination**General Physical Examination**

Young male is conscious, alert, and cooperative but appears anxious due to recurrent vertigo.

Pulse: 88/min

Blood Pressure: 124/78 mmHg

Temperature: 98.7°F

Respiratory Rate: 18/min

Local Ear Examination

- External ear appears normal
- No visible swelling, redness, or discharge from the external auditory canal
- Tympanic membrane appears intact on otoscopic examination
- Mild retraction of tympanic membrane may be noted, if middle ear involvement is suspected
- No mastoid tenderness

Bedside Hearing Assessment

- Hearing appears reduced on the right side
- Whispered voice test is reduced in the right ear
- Rinne test: abnormal on the right side, depending on the type of hearing loss
- Weber test: lateralization noted, requiring interpretation for conductive or sensorineural hearing loss
- Tuning fork tests suggest possible involvement of the auditory pathway

Vestibular / Neurological Examination

- Patient feels vertigo on sudden head movement
- Mild horizontal nystagmus may be observed
- Gait is mildly unsteady during vertigo episodes
- Romberg test may be positive if vestibular imbalance is significant
- Cranial nerves are otherwise intact

- No facial weakness
- No focal motor or sensory neurological deficit

Systemic Examination

CVS, Respiratory System, Abdomen: No significant abnormality detected.

Educational Relevance: Discipline-wise Integration

Discipline	Relevance
Anatomy	External ear, middle ear, inner ear, cochlea, vestibular apparatus, auditory ossicles, tympanic membrane, Eustachian tube, vestibulocochlear nerve, temporal bone, and anatomical basis of hearing and balance
Physiology	Physiology of hearing, sound transmission, cochlear function, vestibular system, balance, vestibulo-ocular reflex, tuning fork tests, audiometry, and neural pathways of hearing
Biochemistry	Receptors, G-proteins, second messenger mechanisms, neurotransmitters, and molecular basis of sensory transduction
Pathology	Conductive and sensorineural hearing loss, labyrinthitis, vestibular neuritis, otitis media, inner ear dysfunction, and pathological basis of vertigo
Pharmacology	Drugs used for vertigo, nausea, vestibular suppression, infection-related ear disease, and avoidance of ototoxic drugs
ENT / Clinical Medicine	Clinical approach to vertigo, hearing loss, bedside hearing tests, red flags, and need for referral
Radiology	Role of imaging in selected cases of persistent vertigo, suspected temporal bone pathology, acoustic neuroma, or central neurological cause
Behavioral Sciences	Patient counseling regarding hearing protection, anxiety related to vertigo, compliance, and safety precautions

Entrustable Professional Activities (EPAs)

1. Obtain a focused history from a patient presenting with vertigo, hearing loss, tinnitus, ear fullness, nausea, or imbalance, and identify important red-flag symptoms.
2. Perform a basic structured ear and vestibular examination including otoscopy, whispered voice test, Rinne test, Weber test, observation for nystagmus, gait assessment, and Romberg test where appropriate.
3. Differentiate likely conductive hearing loss from sensorineural hearing loss using bedside clinical findings and tuning fork tests.
4. Recognize vertigo with hearing loss as a clinically important presentation requiring appropriate evaluation, referral, and early management.
5. Counsel the patient regarding fall prevention, avoidance of driving during acute vertigo, hearing protection, medication compliance, and need for follow-up.

EPAs Detail Annexure-II

Harden Level 11 Justification

This case represents an authentic patient-care task in which students must integrate anatomy, physiology, biochemistry, pathology, pharmacology, ENT, and clinical reasoning simultaneously. The patient is approached as a unified clinical problem rather than as isolated subject-based learning. Students are expected to identify key symptoms, perform relevant bedside examination, interpret tuning fork tests, differentiate conductive and sensorineural hearing loss, understand the anatomical and physiological basis of hearing and balance, and recognize the need for appropriate referral and management. This reflects practice-based interdisciplinary learning consistent with Harden Level 11 integration.

Theme 2 Clinico-Concept Connect (C³6)

CLINICAL ASSESSMENT OF VERTIGO AND HEARING LOSS

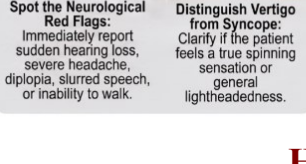
FOCUSED HISTORY & RED FLAG RECOGNITION



Identify Primary Ear and Vestibular Symptoms:
Document onset, triggers, and the presence of tinnitus, ear fullness, or a spinning sensation (vertigo).



Spot the Neurological Red Flags:
Immediately report sudden hearing loss, severe headache, diplopia, slurred speech, or inability to walk.



Distinguish Vertigo from Syncope:
Clarify if the patient feels a true spinning sensation or general lightheadedness.

BEDSIDE EXAMINATION & DIAGNOSTIC TESTS



Conduct Tuning Fork Tests (Rinne & Weber): Use these bedside tools to differentiate between conductive and sensorineural hearing loss.



Assess Balance and Gait: Perform the Romberg test and gait observation to evaluate vestibular stability and fall risk.



Perform Otoscopy & Whispered Voice Test: Inspect the tympanic membrane for abnormalities and conduct a basic bedside hearing screen.

Clinical Differentiation of Hearing Loss Types

	Conductive Hearing Loss	Sensorineural Hearing Loss
Rinne Test	Bone Conduction > Air Conduction (Negative)	Air Conduction > Bone Conduction (Positive)
Weber Test	Sound lateralizes to the affected (poorer) ear	Sound lateralizes to the unaffected (better) ear

PATIENT SAFETY & COUNSELING



Prioritize Fall Prevention: Advise patients to sit or lie down during acute vertigo and avoid sudden movements.



Driving & Machinery Restrictions: Strictly counsel patients to avoid driving or operating heavy machinery during acute vertigo episodes.

Harden Level 11 Transdisciplinary

84 | Page

Specific Learning Objectives

Subjet	Code	Topics	At the end of lecture students should be able to:	Learning Domains	Calgary Gauge	Teaching Strategy	Assessment Tools
Development							
Anatomy (LGIS)	M5-SpS-A-0010	Development of Pharyngeal apparatus	- Define the pharyngeal arch apparatus. - Describe components of pharyngeal arches. - Enlist derivatives of each of pharyngeal arch. - Describe the development of pharyngeal grooves and pharyngeal membranes. - Enlist the derivates of pharyngeal pouches and clefts. - Enlist common birth defects associated with pharyngeal apparatus. - Explain the embryological basis of these defects. - Understand the bio-physiological aspects of arches. - Correlate with the clinical conditions. - understand provision of curative and preventive health care measures. - Practice principles of bioethics. - Apply strategic use of AI in health care. - Read relevant research article. - Analyze the development and derivatives of the pharyngeal apparatus. - Evaluate the developmental basis of pharyngeal apparatus anomalies. - Create a flowchart illustrating the development and derivatives of the pharyngeal apparatus.	C1 C2 C1 C2 C1 C1 C2 C2 C3 C3 C3 C3 C4 C5 C6	Should know Should know Should know Should know Should know Should know Should know Must know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know	LGIS	MCQ SAQ VIVA OSPE
	M5-SpS-A-011	Development of face, nasal cavities	- Describe the developmental stages of face. - Discuss the role of neural crest cells in development of facial skeleton and pharyngeal arch derivatives. - Describe the molecular regulation of facial development. - Discuss the congenital anomalies of face.	C2 C2 C2 C2 C3	Should know Should know Should know Should know Should know	LGIS	MCQ SAQ VIVA OSPE

			- Describe the development of nasal cavities and paranasal sinuses. - Understand the bio-physiological aspects of face & nasal cavities - Correlate with the clinical conditions. - understand provision of curative and preventive health care measures. - Practice principles of bioethics. - Apply strategic use of AI in health care. - Read relevant research article. - Analyze the embryological development of the face and nasal cavities. - Evaluate the developmental basis of congenital anomalies of the face and nasal cavities. - Create a flowchart illustrating the development of the face and nasal cavities.	C3 C3 C3 C2 C3 C3 C3 C3 C4 C5 C6	Should know Should know Should know Must know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know		
	M5-SpS-A-0012	Development of palate	- Discuss the development of primary and secondary palate. - Enlist the different varieties of cleft palate. - Discuss the etiology of cleft lip and cleft palate. - Describe embryological basis of craniofacial anomalies. - Understand the bio-physiological aspects of Palate. - Correlate with the clinical conditions. - understand provision of curative and preventive health care measures. - Practice principles of bioethics. - Apply strategic use of AI in health care. - Read relevant research article. - Analyze the embryological development of the palate. - Evaluate the developmental basis of congenital palate anomalies. - Create a flowchart illustrating the development of the palate.	C2 C1 C3 C3 C2 C3 C3 C3 C3 C4 C5 C6	Should know Should know Should know Should know Should know Must know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know	LGIS	MCQ SAQ VIVA OSPE

	M5-SpS-A-0013	Development of Eye II (Congenital defects)	- Describe formation of optic stalk. - Explain induction of optic placodes and lens primordia. - Enumerate neural crest cell and mesenchymal derived eye structures. - Enlist the molecular regulation of eye development. - Discuss birth defects of the eye. - Correlate with the clinical conditions. - understand provision of curative and preventive health care measures. - Practice principles of bioethics. - Apply strategic use of AI in health care. - Read relevant research article. - Analyze the embryological basis of congenital eye defects. - Evaluate the clinical implications of congenital eye defects. - Create a flowchart linking developmental defects to congenital eye anomalies.	C2 C2 C1 C2 C3 C3 C3 C3 C3 C4 C5 C6	Should know Should know Should know Should know Must know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know	LGIS	MCQ SAQ VIVA OSPE
	M5-SpS-A-0014	Development of Ear	- Explain the development of optic placodes, otic pit, otic vesicle and otic capsule. - Enlist derivatives of otic vesicle and otic capsule. - Describe development of middle ear cavity and Eustachian tube from tubotympanic recess. - Describe the development of auditory ossicles, tympanic membrane and mastoid antrum. - Discuss development of external acoustic meatus. - Enlist common congenital anomalies associated with ear development. - Describe the embryological basis of these anomalies - Correlate with the clinical conditions. - understand provision of curative and preventive health care measures.	C2 C1 C2 C2 C1 C3 C3 C3 C3	Should know Should know Should know Should know Must know Should know Must know Nice to know Nice to know Nice to know Nice to know		

			- Practice principles of bioethics. - Apply strategic use of AI in health care. - Read relevant research article. - Analyze the embryological development of the external, middle, and inner ear. - Evaluate the developmental causes of congenital ear anomalies. - Create a flowchart illustrating the stages of ear development and its derivatives.	C3 C4 C5 C6	Nice to know Nice to know Nice to know Nice to know		
	Histology						
	M5-SpS-A-0015	Histology of Ear	- Describe the structural differences between outer, middle and inner ear. - Discuss the functions of different parts of ear. - Distinguish the auditory part of inner ear from the vestibular system. - Discuss their roles in hearing & balance - Describe the fuction of sensory hair cells. - Describe the appearance and function of spinal ganglia. - Understand the bio-physiological aspects of hearing - Correlate with the clinical conditions. - Understand provision of curative and preventive health care measures. - Practice principles of bioethics. - Apply strategic use of AI in health care. - Read relevant research article. - Analyze the histological structure of the external, middle, and inner ear. - Evaluate the functional significance of histological features of the ear in hearing and balance. - Create a labeled histological diagram of the ear showing key microscopic structures.	C2 C2 C2 C2 C2 C3 C3 C3 C3 C3 C4 C5 C6	Should know Should know Should know Should know Should know Should know Must know Nice to know Nice to know Nice to know Nice to know Nice to know	LGIS	MCQ SAQ VIVA OSPE
	M5-SpS-A-0016	Histology of Eye II (Retina & Photoreceptors)	- Describe layers of retina - Discuss retinal pigment epithelium - Discuss histology& functions of neuronal retina.	C2 C2 C2	Should know Should know Should know	LGIS	MCQ SAQ VIVA

			- Describe photoreceptors & rod cells. - Understand the bio-physiological aspects of Palate. - Correlate with the clinical conditions like retinal detachment - understand provision of curative and preventive health care measures. - Practice principles of bioethics. - Apply strategic use of AI in health care. - Read relevant research article. - Analyze the histological layers of the retina - Evaluate the functional role of retinal layers. - Create a labeled diagram of the retina highlighting photoreceptors and key layers.	C2 C2 C3 C2 C3 C3 C3 C4 C5 C6	Should know Should know Must know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know Nice to know		OSPE
Anatomy (SGD)	M5-SpS-A-0017	Orbit	Discuss its location, surfaces and borders	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			Describe its muscular and ligamentous attachment.	C2	Should know		
			Describe eyeball movements in relation to recti and oblique muscles.	C2	Should know		
			Discuss role of levator palpebrae superioris	C2	Should know		
			Discuss clinical correlations of different coats of eyeball.	C2	Should know		
			Explain extent and subdivisions of pharynx	C2	Should know		
			Correlate with the clinical conditions	C3	Must know		
			understand provision of curative and preventive health care measures.	C3	Nice to know		
			Practice principles of bioethics	C3	Nice to know		
			Apply strategic use of AI in health care	C3	Nice to know		
			Read relevant research article	C3	Nice to know		
			Analyze the anatomical boundaries and contents of the orbit.	C4	Nice to know		
			Evaluate the clinical significance of the orbital anatomy.	C5	Nice to know		
			Create a labeled diagram of the orbit showing its major structures.	C6	Nice to know		
	M5-SpS-A-0018	Eyeball	Describe anatomy of eyeball with suspensory apparatus.	C2	Should know	Skills Lab	MCQ SAQ

			• Discuss different coats of eyeball with their nerve and blood supply.	C2	Should know		VIVA OSPE
			• Discuss refractive media and compartments of eyeball.	C2	Should know		
			• Correlate with the clinical conditions	C3	Must know		
			• understand provision of curative and preventive health care measures.	C3	Nice to know		
			• Practice principles of bioethics	C3	Nice to know		
			• Apply strategic use of AI in health care	C3	Nice to know		
			• Read relevant research article	C3	Nice to know		
			• Analyze the structural organization of the eyeball and its layers.	C4	Nice to know		
			• Evaluate the functional significance of eyeball structures in vision disorders.	C5	Nice to know		
			• Develop an anatomical approach for assessing diseases of the eyeball.	C6	Nice to know		
	M5-SpS-A-0019	Eyelid & lacrimal app	• Discuss the different components of lacrimal apparatus	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			• Describe the lacrimal gland and its neurovascular supply	C2	Should know		
			• Correlate with the clinical conditions	C3	Must know		
			• understand provision of curative and preventive health care measures.	C3	Nice to know		
			• Practice principles of bioethics	C3	Nice to know		
			• Apply strategic use of AI in health care	C3	Nice to know		
			• Read relevant research article	C3	Nice to know		
			• Analyze the anatomical features of the eyelid and lacrimal apparatus in maintaining ocular protection.	C4	Nice to know		
			• Evaluate the clinical significance of abnormalities of the eyelid and lacrimal apparatus.	C5	Nice to know		
			• Design an approach assess disorders affecting the eyelid and lacrimal apparatus.	C6	Nice to know		
	M5-SpS-A-0020	Parotid & Temporal Region	• Describe boundaries of parotid region.	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			• Discuss surfaces, innervation and relations of parotid gland.	C2	Should know		
			• Understand the bio-physiological aspects of arches	C2	Should know		

			Map the outline of parotid gland and duct on simulated patient / model.	P+As	Should know		
			Correlate with the clinical conditions	C3	Must know		
			understand provision of curative and preventive health care measures.	C3	Nice to know		
			Practice principles of bioethics	C3	Nice to know		
			Apply strategic use of AI in health care	C3	Nice to know		
			Read relevant research article	C3	Nice to know		
			Analyze the anatomical relationships of the parotid and temporal regions.	C4	Nice to know		
			Evaluate the clinical implications of lesions involving the parotid and temporal regions.	C5	Nice to know		
			Develop an anatomical approach for the assessment of parotid and temporal region disorders.	C6	Nice to know		
Anatomy (SDL)	M5-SpS-A-0021	Epidural haemorrhage	Enlist various bones in normal lateralis. Describe the cranial and facial subdivision.	- Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 827-829). https://youtu.be/tkpzPMXzwiM https://youtu.be/9Msvtw5CjFY			
			Define external acoustic meatus,				
			Discuss attachments of mastoid and styloid process.				
			Explain the boundaries of Norma occipitalis.				
			Identify different foramina and structures passing through them at the base.				
			Explain its attachments and relations.				
			Read relevant research article				
	M5-SpS-A-0022	Mandibular fracture	Define location of mandible	- Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Pae 827). https://youtu.be/_lHosB-c_fQ https://youtu.be/Qc0ysewMJg4			
			Describe parts of mandible				
			Explain structural features of each part				
			Enlist attachments of each part				
			Describe blood and nerve supply of mandible.				
			Interpret applied anatomy of mandible.				
			Read relevant research article				
Anatomy (SKL)	M5-SpS-A-0023	Retina	Identify the histological slide of retina.	P C2 C1 C3	Skill Lab	OSPE	
			Illustrate the microscopic picture of retina				
			Enlist two points of identification				
			Read a relevant research article				

Physiology (LGIS)	M5-SpS-P-006	Hearing abnormalities, Tuning fork tests and audiometry	1. Explain the auditory nervous pathway and abnormalities associated with it.	C2	Must Know	A	- Physiological Basis of Medical Practice by Best & Taylor's.13thEdition(Chapter 62,Page 1067) - Textbook of Medical Physiology by Guyton & Hall.14thEdition..Section 10. (Chapter 53, Page 672)	1. https://youtu.be/FgF91K7dU8Y 2. https://youtu.be/acYMy9b0F2A 3. https://www.updatodate.com/contents/image?imageKey=PC%2F58032&topicKey=PC%2F15359&source=see_link	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
			2. Describe the function of cerebral cortex in hearing.	C2	Must Know	A			
	M5-SpS-P-008	Vestibular system	1. Describe the function of the organ of corti	C2	Must Know	A	- Ganong's Review of Medical Physiology.25THEdition.Section02,Vision (Chapter 10, Page 209) - Physiology by Linda S. Costanzo 6thEdition,Neurophysiology chapter 3, page 95 - Physiological Basis of Medical Practice by Best & Taylor's.13thEdition,(Chapter 63,Page 1072)	1. https://www.physio-pedia.com/Vestibular_System 2. https://youtu.be/ryGMI3SpxCE 3. https://youtu.be/mcp7qLh8_5c	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
			2. Explain vestibular system	C2	Must Know	A			
	M5-SpS-P-005	Photochemistry of vision &Physiological basis for photo transduction	1. Describe the physiology of retinal layers	C2	Must Know	A	Ganong's Review of Medical Physiology.25THEdition.Section02,Vision (Chapter 09, Page 182)	1. https://www.brainkart.com/article/Photochemistry-of-Eye-Vision_19676/ 2. https://youtu.be/k9lrM5iPNuY	MCQ SEQ VIVA VOCE MCQ (LMS based
			2. Explain photochemistry of vision (rhodopsin - retinal)	C2	Must Know	A			
			3. Describe the mechanism of activation of Rods	C2	Must Know	A			

			4. Explain the photochemistry of color vision	C2	Must Know	A	- Physiology by Linda S. Costanzo 6th Edition, Neurophysiology chapter 3, page 87 - Human Physiology by Dee Unglaub Silverthorn. 8TH Edition. Sensory Physiology (Chapter 10, Page 379-387) - Textbook of Medical Physiology by Guyton & Hall. 14th Edition.. Section 10. (Chapter 51, Page 641)		Assessment, MST based Assessment) OSPE
	M5-SpS-P-007	Light & dark adaptation, Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information	1. Explain the neural circuitry of the Retina 2. Describe the physiology of visual pathway 3. Name the optic lesion associated with visual pathway	C2 C2 C1	Must Know Must Know Must Know	A A A	- Ganong's Review of Medical Physiology. 25TH Edition. Section 02, Vision (Chapter 09, Page 189, 193) - Physiology by Linda S. Costanzo 6th Edition, Neurophysiology chapter 3, page 90 - Textbook of Medical Physiology by Guyton & Hall. 14th Edition.. Section 10. (Chapter 51, Page 644)(Chapter 52, Page 653-657)	1. https://youtu.be/wiYmTAuVimg 2. https://youtu.be/cG5ZuK0_qtc 3. https://teachmeanatomy.info/head/cranial-nerves/optic-cnii/	MCQ SEQ VIVA VOCE MCQ (LMS based Assessment, MST based Assessment) OSPE

Physiology (SGD)	M5-SpS-P-0014	Physiology of Hearing	- Describe the physiology of hearing and function of tympanic membrane and ossicular system. - Define impedance matching and attenuation reflex - Explain the conduction of sound waves in the cochlea	- Ganong's Review of Medical Physiology. 25TH Edition. Section 02, Vision (Chapter 10, Page 200, 204) - Physiology by Linda S. Costanzo 6th Edition, Neurophysiology chapter 3, page 93 - Human Physiology by Dee Unglaub Silverthorn. 8TH Edition. Sensory Physiology (Chapter 10, Page 371-374) - Textbook of Medical Physiology by Guyton & Hall. 14th Edition. Section 10. (Chapter 53, Page 664, 669)	https://youtu.be/le2j7GpC4JU https://youtu.be/qgdqp-oPb1Q https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeId=90&ContentTypeID=P02025	- C2 - C1 C2	SGD	MCQ SEQ VIVA VOCE MCQ (LMS based Assessment, MST based Assessment) OSPE
Biochemistry (LGIS)	M2-SpS-B-09	Second messenger system	- Define second messengers and list the major second messenger molecules involved in sensory signal transduction. - Explain the role of second messenger systems in amplifying and transmitting signals generated by sensory receptor activation. - Apply the principles of second messenger signaling to predict the effects of alterations in intracellular signaling pathways on sensory perception. - Analyze the sequence of molecular events involved in second messenger-mediated signal transduction in visual, olfactory, or gustatory receptors. - Evaluate the consequences of defects in second messenger systems on the function of special sensory pathways and related clinical manifestations.	Should know		C1 C2 C3 C4 C5 C6	LGIS	MCQs SAQs SEQs Viva

			Design a schematic representation of a second messenger signaling pathway involved in a special sense, highlighting receptor activation, intracellular mediators, and cellular response.				
Biochemistry (SDL)	M2-SpS-B-10	G-Proteins	- Describe the structure, classification, and activation cycle of G-proteins involved in sensory signal transduction. - Explain the role of G-proteins in mediating signal transduction pathways in vision, olfaction, and taste, including their interaction with receptors and effector molecules. - Correlate abnormalities in G-protein signaling with impaired sensory perception and selected clinical disorders affecting the special senses.	Must know	Harper's Illustrated Biochemistry, 32nd Edition, Chapter 42: Hormone Action & Signal Transduction, pg 508–526 & Chapter 40: Membranes—Structure & Function, pg 467–487 Lippincott Illustrated Reviews: Biochemistry, 6th Edition, Chapter: Cell Signaling, pg 205–223		
	M2-SpS-B-11	Role Of Vitamin A In Vision	- Describe the biochemical forms, metabolism, and transport of Vitamin A relevant to the visual process. - Explain the role of Vitamin A in the visual cycle, including the formation and regeneration of rhodopsin in retinal photoreceptor cells. - Correlate Vitamin A deficiency with impaired visual function, including night blindness and other ocular manifestations, based on the underlying biochemical mechanisms.	Must know	Harper's Illustrated Biochemistry, 32nd Edition, Chapter 44: Micronutrients—Vitamins & Minerals, pg 535–548 & Chapter 30: Conversion of Amino Acids to Specialized Products, pg 306–314 Lippincott Illustrated Reviews: Biochemistry, 6th Edition, Chapter 28: Vitamins, pg 381–396		
Biochemistry (SKL)	M2-SpS-B-12	Biochemical Analysis of CSF	- Interpret cerebrospinal fluid (CSF) biochemical parameters (e.g., glucose, protein, and electrolyte levels) to identify abnormalities associated with neurological conditions affecting special sensory functions. - Analyze CSF laboratory reports and correlate biochemical findings with the underlying pathophysiological mechanisms of disorders involving vision, hearing, balance, or other special senses.	Should know	P	Skill Lab	OSPE

Biochemistry (SGD)	M2-SpS-B-13	G-Proteins	- Define G-proteins and list the major types of G-proteins involved in sensory signal transduction. - Explain the role of G-proteins in transmitting signals from sensory receptors to intracellular effector molecules in the special senses. - Apply the principles of G-protein signaling to predict the effects of altered G-protein activity on sensory perception. - Analyze the sequence of molecular events involved in G-protein-mediated signal transduction in visual, olfactory, and gustatory pathways. - Evaluate the impact of defects in G-protein signaling pathways on the function of special senses and related clinical manifestations. - Construct a schematic model illustrating the role of G-proteins in receptor-mediated signal transduction within a selected special sensory system.	Must know	C1 C2 C3 C4 C5 C6	SGD	MCQs
ENT	M5-SpS-VI (ENT)-001	Deafness	Know various cases of deafness	C1		LGIS	MCQs
			Understand the etiology, Pathology of various cases of deafness in external middle and internal ear and to know how to treat them.	C2			
	M5-SpS-VI (ENT)-002	Vertigo	Define vertigo and differentiate it from dizziness and imbalance.	C1		LGIS	MCQs
			Describe the common causes of vertigo, including peripheral and central causes.	C2			
			Explain the basic pathophysiology of vertigo related to the vestibular system.	C2			

Spiral Courses (2nd Week)

Islamiyat

Code	Topic	At the End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
M5-SpS-SI (I)-002	Women's Rights	• Define women's rights in the context of health and human rights	C2	LGIS	MCQs
		• Explain the significance of gender equity in medical care and public health	C2		

The Pak Studies

Code	Topic	At the End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
M5-SpS-SI (PKS)-002	The Aligarh Movement-I-II	• Describe the historical background and emergence of the Aligarh Movement in British India.	C2	LGIS	MCQs
		• Identify the key role of Sir Syed Ahmed Khan in initiating the movement and his vision for modern education among Muslims.	C2		
		• Explain the objectives of the Aligarh Movement, particularly the promotion of modern scientific education alongside Islamic values.	C2		

Family Medicine

Code	Topic	At the End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
M5-SpS-SI (Fmed)-001	Approach to a Patient with Hearing Loss	• Define hearing loss and describe its common types and causes.	C1	LGIS	MCQs
		• Discuss the clinical features and approach to the assessment and diagnosis of a patient with hearing loss.	C2		
		• Discuss the principles of management of common causes of hearing loss.	C2		

Transdisciplinary (Hardens Level 11) **Clinico-Concept Connect (C³6) Sessions** for 2nd Week

Session	Topic	Department	Educational Relevance	At the End of The Demonstration Student Should Be Able To	Learning Domain	Assessment Tool
Clinico-Concept Connect (C ³ 6) Session – II	Vertigo and Hearing Loss with Abnormal Bedside Hearing Tests	Anatomy	External ear, middle ear, inner ear, cochlea, vestibular apparatus, auditory ossicles, tympanic membrane, Eustachian tube, vestibulocochlear nerve, temporal bone, and anatomical basis of hearing and balance	• Describe the anatomy of the external ear, middle ear, and inner ear.	C2	MCQs
				• Identify the tympanic membrane, auditory ossicles, Eustachian tube, cochlea, semicircular canals, utricle, and saccule.	C3	MCQs
				• Explain the anatomical pathway of sound transmission from external ear to cochlea.	C3	MCQs
				• Describe the vestibulocochlear nerve and its auditory and vestibular components.	C3	MCQs
				• Correlate lesions of the external, middle, and inner ear with conductive and sensorineural hearing loss.	C3	MCQs
				• Explain the anatomical basis of vertigo, nystagmus, and imbalance.	C3	MCQs
		Physiology	Physiology of hearing, sound transmission, cochlear function, vestibular system, balance, vestibulo-ocular reflex, tuning fork tests, audiometry, and neural pathways of hearing	• Explain the physiology of sound conduction through the external and middle ear.	C3	MCQs
				• Describe cochlear function and conversion of mechanical sound waves into nerve impulses.	C3	MCQs
				• Explain the physiology of the vestibular system in maintaining balance and posture.	C3	MCQs
				• Describe the role of semicircular canals in angular acceleration and the role of utricle and saccule in linear acceleration.	C3	MCQs
				• Explain the physiological basis of Rinne and Weber tests.	C3	MCQs
				• Differentiate conductive and sensorineural hearing loss using bedside hearing tests.	C3	MCQs
				• Discuss the role of audiometry in assessment of hearing loss.	C3	MCQs
				• Explain the basis of nystagmus and vestibulo-ocular reflex in vestibular disorders.	C3	MCQs
		Biochemistry	Receptors, G-proteins, second messenger mechanisms, neurotransmitters, and	• Describe the role of receptors in sensory transduction.	C3	MCQs
				• Explain the importance of second messengers and G-proteins in cell signaling.	C3	MCQs
				• Correlate biochemical signaling mechanisms with sensory perception.	C3	MCQs

			molecular basis of sensory transduction	• Discuss the role of neurotransmitters in auditory and vestibular pathways.	C3	MCQs
				• Relate altered receptor function or neurotransmission to abnormal hearing and balance symptoms.	C4	MCQs
		Pathology	Conductive and sensorineural hearing loss, labyrinthitis, vestibular neuritis, otitis media, inner ear dysfunction, and pathological basis of vertigo	• Define conductive and sensorineural hearing loss.	C3	MCQs
				• Explain common pathological causes of hearing loss, including otitis media, wax impaction, tympanic membrane pathology, cochlear damage, and vestibulocochlear nerve involvement.	C3	MCQs
				• Describe the pathological basis of vertigo in vestibular neuritis, labyrinthitis, and inner ear dysfunction.	C3	MCQs
				• Differentiate peripheral vertigo from central vertigo on clinical grounds.	C3	MCQs
				• Identify red-flag features such as severe headache, neurological deficit, facial weakness, persistent vomiting, sudden severe hearing loss, or cerebellar signs.	C3	MCQs
		Pharmacology	Drugs used for vertigo, nausea, vestibular suppression, infection-related ear disease, and avoidance of ototoxic drugs	• Outline the general principles of pharmacological management of vertigo.	C3	MCQs
				• Identify commonly used drug groups for symptomatic relief of vertigo and nausea.	C3	MCQs
				• Recognize the role of antibiotics where bacterial ear infection is suspected.	C3	MCQs
				• Explain the importance of avoiding unnecessary or prolonged vestibular suppressants.	C3	MCQs
				• Identify examples of ototoxic drugs and understand the need for caution in their use.	C3	MCQs
				• Counsel patients regarding medication compliance and follow-up.	A2	MCQs
		ENT	Clinical approach to vertigo, hearing loss, bedside hearing tests, red flags, and need for referral	• Take a focused history from a patient presenting with vertigo and hearing loss.	C3	MCQs
				• Ask about onset, duration, triggers, tinnitus, ear fullness, discharge, trauma, drug history, and neurological symptoms.	C3	MCQs
				• Perform basic ear examination and bedside hearing assessment.	P2	MCQs
				• Interpret Rinne and Weber tests in relation to conductive and sensorineural hearing loss.	C4	MCQs
				• Recognize when urgent ENT or neurological referral is required.	C3	MCQs
				• Counsel the patient about safety precautions during vertigo episodes.	A2	MCQs

Theme 3: A Patient with Accommodation Failure/Strabismus; Trauma Links (3rd Week)

Theme	Rationale	Learning objectives
A Patient with Accommodation Failure/Strabismus; Trauma Links	This week integrates accommodation physiology + clinical abnormalities with refractive error & strabismus, and ties to anatomy/ECE of orbital/facial injuries, making diplopia + near-blur the most clinically coherent theme for vertical integration.	Students will integrate the structural and functional principles of the orbit, extraocular muscles, cranial nerves (III, IV, VI), and accommodation to evaluate double vision and ocular trauma. They will learn to perform structured ocular and cranial nerve exams, identify traumatic red flags such as orbital fractures or muscle entrapment, and execute urgent escalation and patient safety counseling
Case Scenario 3: Diplopia with Blurred Near Vision after Orbital Trauma Clinical Scenario A 22-year-old male university student presented to the Ophthalmology outpatient department with double vision and blurred near vision for the last two days. The symptoms began after he was hit near the left eye by a cricket ball during a match. Immediately after the injury, he developed swelling around the left orbit, watering from the eye, and mild pain on attempting to look upward. He did not lose consciousness and there was no vomiting, seizure, or bleeding from the ear or nose. The patient reported that objects appeared double, especially when looking upward and to the side. The diplopia became worse on reading, climbing stairs, and looking at distant objects after shifting gaze from near work. He also noticed difficulty focusing on near text, frontal headache after reading for a few minutes, and a feeling that the affected eye was not moving normally. His family observed that the left eye appeared slightly deviated and that he tended to close one eye to avoid double vision. There was no history of chronic eye disease, previous squint, use of spectacles, diabetes mellitus, hypertension, or neurological illness. He denied fever, ear discharge, vertigo, limb weakness, facial weakness, sensory loss, or altered consciousness. The overall presentation raised concern for traumatic orbital injury with possible extraocular muscle restriction, cranial nerve involvement, accommodation abnormality, or strabismus requiring integrated anatomical, physiological, radiological, ophthalmological, and clinical assessment. Past Medical History No known diabetes mellitus or hypertension No previous history of strabismus or diplopia No previous ocular surgery or major eye trauma No known neurological disease No history of chronic sinus or ear disease Drug History No regular medication		

Took oral analgesic after injury with partial relief

No history of steroid use

No known drug allergy

No history of ototoxic or neurotoxic drug exposure

Family History

No family history of congenital squint

No family history of inherited eye disease

No family history of neurological disease

Social History

University student and recreational cricket player

Frequent near work and prolonged screen use

No smoking or alcohol use reported

No occupational exposure to chemicals or radiation

Examination

General Physical Examination

Young male is conscious, alert, oriented, and cooperative, with visible swelling around the left eye and anxiety due to persistent double vision.

Pulse: 86/min

Blood Pressure: 122/78 mmHg

Temperature: 98.6°F

Respiratory Rate: 18/min

Local Eye and Orbital Examination

Periorbital swelling and mild bruising around the left orbit

No active bleeding or obvious globe rupture on gross examination

Visual acuity mildly reduced in the affected eye because of watering and discomfort

Diplopia present, more marked on upward gaze and lateral gaze

Restricted elevation of the affected eye may be present, suggesting extraocular muscle restriction or orbital floor injury

Pupil is equal and reactive to light unless oculomotor nerve involvement is present

Near response/accommodation appears weak or uncomfortable during reading assessment

Corneal reflex is intact and cornea appears clear on gross inspection

Cranial Nerve / Neurological Examination

Extraocular movements are assessed in all directions of gaze

Possible weakness or restriction involving muscles supplied by CN III, IV, or VI is considered

No facial weakness or facial sensory loss detected on basic examination

No limb weakness, sensory deficit, cerebellar signs, or altered level of consciousness

No signs of raised intracranial pressure at presentation, but red flags must be actively excluded

ENT / Facial Trauma Correlation

No epistaxis, CSF rhinorrhea, or ear discharge

No mastoid tenderness or Battle sign

Facial tenderness over the orbital margin may be present

Associated facial fracture and sinus involvement should be considered if pain, numbness, or deformity is present

Systemic Examination

CVS, Respiratory System, Abdomen: No significant abnormality detected.

Educational Relevance: Discipline-wise Integration

Discipline	Relevance
Anatomy	Orbit, extraocular muscles, oculomotor/trochlear/abducens nerves, optic nerve, visual pathway, eyelids and lacrimal apparatus, infratemporal fossa, pterygopalatine fossa, external and middle ear, development of nose and ear, and anatomical basis of orbital fractures.
Physiology	Physiology of accommodation, near response, ocular movements, neural control of eyeball movements, lesions of visual pathway, sense of taste and smell, and clinical abnormalities of accommodation and strabismus.
Biochemistry	Second messenger systems, receptors, neurotransmitters, G-proteins, Vitamin A in vision, and biochemical basis of visual transduction relevant to night blindness and visual symptoms.
Pathology	Traumatic orbital injury, extraocular muscle entrapment, cranial nerve palsy, strabismus, refractive errors, blow-out fracture, and complications of delayed recognition.
Pharmacology	Principles of analgesia, anti-inflammatory treatment where appropriate, avoidance of unsafe self-medication, and referral-based management of ocular trauma.

Ophthalmology / Clinical Medicine	Focused assessment of diplopia, blurred near vision, accommodation failure, strabismus, ocular trauma red flags, and need for urgent ophthalmic referral.
Radiology	General radiologic concepts and role of orbital/facial imaging, especially CT, in suspected blow-out fracture, muscle entrapment, or facial fracture.
ENT / Clinical Correlation	Facial fractures, nasal trauma, DNS/rhinitis correlation, sinus involvement, and associated head and neck trauma assessment.
Behavioral Sciences	Counseling regarding anxiety, eye safety during sports, compliance with referral, avoidance of driving with diplopia, and reassurance with clear warning signs.

Entrustable Professional Activities (EPAs)

- 1. Obtain a focused history from a patient presenting with diplopia, blurred near vision, eye trauma, headache, abnormal ocular movements, or suspected strabismus, and identify red-flag features.
- 2. Perform a basic structured ocular and cranial nerve examination including visual acuity, pupillary reactions, ocular alignment, extraocular movements, near response/accommodation, and gross neurological screening.
- 3. Recognize diplopia after orbital/facial trauma as a potentially serious presentation requiring urgent ophthalmology and/or ENT referral when red flags, restricted eye movement, suspected fracture, or reduced vision are present.
- 4. Counsel the patient regarding avoidance of driving or sports until reviewed, eye protection, danger symptoms, compliance with referral, and need for follow-up.

EPAs Detail Annexure-II

Harden Level 11 Justification

This case represents an authentic patient-care task in which students must integrate anatomy, physiology, biochemistry, pathology, pharmacology, radiology, ENT, ophthalmology, and clinical reasoning simultaneously. The patient is approached as a unified clinical problem rather than as separate subject-based teaching. Students are required to assess diplopia and blurred near vision, correlate extraocular muscle anatomy and cranial nerve function with ocular movement abnormalities, understand accommodation and visual pathway physiology, consider biochemical signaling in vision, recognize trauma-related red flags, and initiate timely referral and counseling. This reflects practice-based interdisciplinary learn

Clinical Approach to Diplopia & Ocular Trauma

Clinical Assessment & Examination



Focused History Taking

Differentiate between **monocular** and **binocular diplopia** and clarify the mechanism of any trauma.



The Six Cardinal Positions

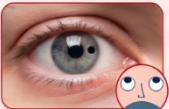
Test **extraocular movements** systematically to identify restriction or weakness in Cranial Nerves III, IV, or VI.



Assess the Near Response

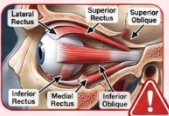
Evaluate the trio of **accommodation**, **convergence**, and **pupillary constriction** to identify near-vision failure.

Red Flags & Emergency Action



Identify High-Risk Red Flags

Watch for **restricted upward gaze** (suggesting orbital floor fracture), **unequal pupils**, or sudden vision loss.



Emergency Recognition

Treat diplopia following orbital trauma as a potential **emergency** requiring urgent Ophthalmology or ENT referral.



Patient Safety Counseling

Advise patients to **avoid driving**, **sports**, or heavy machinery until a full specialist review is completed.

Presentation	Key Clinical Feature	Primary Concern
Orbital Blow-out	Restricted upward gaze	Muscle entrapment/Fracture
CN III Palsy	Ptosis & unequal pupils	Neurological emergency
Accommodation Failure	Blurred near vision	Ciliary muscle/Refractive error

Harden Level 11 Transdisciplinary

Specific Learning Objectives

Subject	Code	Topics	At the end of lecture students should be able to:	Learning Domains	Calgary Gauge	Teaching Strategy	Assessment Tools
Anatomy (SGD)	M5-SpS-A-0024	Infra temporal Fossa	• Discuss the boundaries and contents of temporal region.	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			• Describe the temporalis muscle and its relations	C2	Should know		
			• Enumerate the boundaries and contents of infratemporal region.	C1	Should know		
			• Discuss muscles of mastication	C2	Should know		
			• Correlate with the clinical conditions	C3	Must know		
			• understand provision of curative and preventive health care measures.	C3	Nice to know		
			• Practice principles of bioethics	C3	Nice to know		
			• Apply strategic use of AI in health care	C3	Nice to know		
			• Analyze the anatomical boundaries and contents of the infratemporal fossa.	C4	Nice to know		
			• Evaluate the clinical significance of the infratemporal fossa in disease and surgical procedures.	C5	Nice to know		
			• Develop an anatomical approach for the assessment of infratemporal fossa lesions.	C6	Nice to know		
			• Read relevant research article	C3	Nice to know		
	M5-SpS-A-0025	Pterygopalatine Fossa	• Discuss the boundaries and contents of pterygopalatine fossa.	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			• Discuss the communications of pterygopalatine fossa.	C2	Should know		
			• Understand the bio-physiological aspects of arches	C2	Should know		
			• Correlate with the clinical conditions	C3	Must know		
			• understand provision of curative and preventive health care measures	C3	Nice to know		
			• Practice principles of bioethics	C3	Nice to know		
			• Apply strategic use of AI in health care	C3	Nice to know		
			• Read relevant research article	C3	Nice to know		
			• Analyze the boundaries, contents, and communications of the pterygopalatine fossa.	C4	Nice to know		
			• Evaluate the clinical significance of the pterygopalatine fossa in the spread of disease and nerve blocks.	C5	Nice to know		
			• Develop an anatomical approach for the assessment of pterygopalatine fossa lesions.	C6	Nice to know		
	M5-SpS-A-0026		• Describe parts of the ear.	C2	Should know		

		External & Medial Ear	• Discuss walls and contents of external and middle ear,	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			• Discuss their blood and nerve supply.	C2	Should know		
			• Explain pharynges tympanic tube, mastoid antrum and air cells.	C2	Should know		
			• Relation of chorda tympani and facial nerve.	C1	Should know		
			• Discuss Mastoiditis and tubal blockage	C3	Should know		
			• Correlate with the clinical conditions	C3	Must know		
			• understand provision of curative and preventive health care measures	C3	Nice to know		
			• Practice principles of bioethics	C3	Nice to know		
			• Apply strategic use of AI in health care	C3	Nice to know		
			• Read relevant research article	C3	Nice to know		
			• Analyze the anatomical features of the external and middle ear related to hearing.	C4	Nice to know		
			• Evaluate the clinical significance of disorders affecting the external and middle ear.	C5	Nice to know		
			• Develop an anatomical approach for the assessment of external and middle ear diseases.	C6	Nice to know		
	M5-SpS-A-0027	Inner Ear	• Discuss membranous and bony labyrinth.	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			• Describe internal acoustic meatus.	C2	Should know		
			• Explain the course of 7th and 8th cranial nerve in detail.	C2	Should know		
			• Correlate with the clinical conditions	C3	Must know		
			• understand provision of curative and preventive health care measures	C3	Nice to know		
			• Practice principles of bioethics	C3	Nice to know		
			• Apply strategic use of AI in health care	C3	Nice to know		
			• Read relevant research article	C3	Nice to know		
			• Analyze the anatomical organization of the internal ear in hearing and balance.	C4	Nice to know		
			• Evaluate the clinical significance of disorders affecting the internal ear.	C5	Nice to know		
			• Develop an anatomical approach for the assessment of internal ear disorders.	C6	Nice to know		
	M5-SpS-A-0028		• Discuss anatomy and location of paranasal air sinuses separately.	C2	Should know		
			• Define & list names of paranasal sinuses	C1	Should know		

		Nose & Paranasal Sinuses	• Describe their blood and nerve supply	C2	Should know	Skills Lab	MCQ SAQ VIVA OSPE
			• Describe functions of paranasal sinuses.	C2	Should know		
			• Discuss drainage of paranasal sinuses.	C2	Should know		
			• Identify carious sinuses in radiographs	C1	Should know		
			• Describe anatomy of external nose and features of nasal septum, side and anatomical position.	C2	Should know		
			• Describe details of olfactory receptors and formation of olfactory nerve.	C2	Should know		
			• Discuss blood and nerve supply of external nose and nasal septum.	C2	Should know		
			• Explain functions of nose.	C2	Should know		
			• Discuss in detail clinical correlates of external nose and nasal septum. Lateral nasal wall and their importance.	C2	Must know		
			• Discuss on clinical importance of nasal cavity.	C3	Must know		
			• Correlate with the clinical conditions	C3	Must know		
			• understand provision of curative and preventive health care measures	C3	Nice to know		
			• Practice principles of bioethics	C3	Nice to know		
			• Apply strategic use of AI in health care	C3	Nice to know		
			• Read relevant research article	C3	Nice to know		
			• Analyze the anatomical features of the nose and paranasal sinuses	C4	Nice to know		
			• Evaluate the clinical significance of disorders affecting the nose and paranasal sinuses.	C5	Nice to know		
			• Develop an anatomical approach for the assessment of nose and paranasal sinus disorders.	C6	Nice to know		
	M5-SpS-A-0029	Cross Sectional Anatomy	Identify the structures at Sagittal section of head	C3	Should know		
			• Level passing through the vestibule of the nose, the inferior nasal the temporomandibular joint , the pons and the occipital lobe of the cerebrum.				
			Analyze cross-sectional anatomical images to identify normal structures.	C4	Nice to know		
			Evaluate cross-sectional anatomy for clinical interpretation.	C5	Nice to know		
			Develop an anatomical approach for interpreting cross-sectional images.	C6	Nice to know		

Anatomy (SDL)	M5-SpS-A-0031	Temporomandibular joint dislocation	• Discuss the temporomandibular joint, its type, formation, and neurovascular supply • Describe the movement's axis and muscles involved. • Correlate clinically disorders of the temporo- mandibular joint. • Read relevant research article				• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 916-920). • https://youtu.be/6tJsi5oghNY • https://youtu.be/0BKU04QLzV0			
			• Discuss its location, surfaces and borders • Describe its muscular and ligamentous attachment. • Describe eyeball movements in relation to recti and oblique muscles. • Discuss role of levator palpebrae superioris • Discuss extraocular muscles of orbit. • Supporting apparatus of eyeball.				• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 889-906). • https://youtu.be/HKEA4p5k66U • https://youtu.be/Oz4kGGiJNrA			
			• Nerves of eye ball • Vasculature of orbit • Read relevant research article							
	M5-SpS-A-0032	Orbital fractures (blow-out fracture)	• Discuss the temporomandibular joint, its type, formation, and neurovascular supply • Describe the movement's axis and muscles involved. • Correlate clinically disorders of the temporo- mandibular joint. • Read relevant research article				• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 916-920). • https://youtu.be/6tJsi5oghNY • https://youtu.be/0BKU04QLzV0			
			• Discuss its location, surfaces and borders • Describe its muscular and ligamentous attachment. • Describe eyeball movements in relation to recti and oblique muscles. • Discuss role of levator palpebrae superioris • Discuss extraocular muscles of orbit. • Supporting apparatus of eyeball.				• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 889-906). • https://youtu.be/HKEA4p5k66U • https://youtu.be/Oz4kGGiJNrA			
			• Nerves of eye ball • Vasculature of orbit • Read relevant research article							
Anatomy (SKL)	M5-SpS-A-0039	Ear	• Identify the histological slide of ear • Illustrate the microscopic picture of ear • Enlist two points of identification of each • Read a relevant research article				P C2 C1 C3	Skill Lab	OSPE	
Physiology (LGIS)	M5-SpS-P-009	Lesions of visual pathway and its effects on field of vision, Movements of eye ball along with neural control	1. Explain the muscular control of eye movement	C2	Must Know	A	• Ganong's Review of Medical Physiology.25TH Edition. Section 02, Vision (Chapter 09, Page 190) • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10, Page 374-378) • Textbook of Medical Physiology by Guyton & Hall. 14th Edition.. Section 10. (Chapter 52, Page 657)	1. https://youtu.be/evLyI35m8xU 2. https://teachmeanatomy.info/head/organs/eye/extraocular-muscles/	MCQ SEQ VIVA VOCE MCQ (LMS based Assessment, MST based Assessment) OSPE	
			2. Describe the fixation movements of eye	C2	Must Know	A				
			3. Define accommodation reflex and pupillary light reflex	C2	Must Know	A				
			4. Name the optic lesion associated with visual pathway	C2	Must Know	A				

	M5-SpS-P-0011	Physiology of accommodation and clinical abnormalities	1. Define accommodation reflex and pupillary light reflex	C1	Must Know	A	- Ganong's Review of Medical Physiology.25THEdition.Section02,Vision (Chapter 09, Page 188) - Textbook of Medical Physiology by Guyton & Hall.14thEdition..Section 10. (Chapter 52, Page 660)	1. https://youtu.be/xj0blrAx3_s 2. https://teachmephysiology.com/nervous-system/ocular-physiology/ocular-accommodation/	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE	
			2. Explain Clinical abnormalities associated with accommodation	C2	Must Know	A				
		M5-SpS-P-0010	Sense of Taste and pathophysiology	List the primary sensation of taste	C1	Must Know	A	- Ganong's Review of Medical Physiology.25THEdition.Section02,Vision (Chapter 11, Page 221) - Physiology by Linda S. Costanzo 6thEdition,Neurophysiology chapter 3, page 100 - Human Physiology by Dee Unglaub Silver thorn. 8THEdition.Sensory Physiology (Chapter 10,Page 361) - Textbook of Medical Physiology by Guyton & Hall.14thEdition..Section 10. (Chapter 54, Page 675-679)	1. https://youtu.be/K9JSBzEEA0o 2. https://youtu.be/mFm3yA1nsIE 3. https://www.sciencedirect.com/topics/nursing-and-health-professions/taste	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
				Explain the mechanism of taste perception and its transmission into central nervous system	C2	Must Know	A			

	M5-SpS-P-0012	Sense of Smell and pathophysiology	1. List the primary sensation of smell	C1	Must Know	A	- Ganong’s Review of Medical Physiology.25THEdition.Section02,Vision (Chapter 11, Page 217) - Physiology by Linda S. Costanzo 6thEdition,Neurophysiology chapter 3, page 98 - Human Physiology by Dee Unglaub Silver thorn. 8THEdition.Sensory Physiology (Chapter 10,Page 358) - Textbook of Medical Physiology by Guyton & Hall.14thEdition..Section 10. (Chapter 54, Page 679)	1. https://www.alimentarium.org/en/fact-sheet/senses-smell 2. https://youtu.be/mFm3yA1nsIE		MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
			2. Describe the stimulation of olfactory cells and its transmission into central nervous system	C2	Must Know	A				
Physiology ‘(SGD)	M5-SpS-P-0015	Sense of Taste and Smell	1. List the primary sensation of taste 2. Explain the mechanism of taste perception and its transmission into central nervous system 3. List the primary sensation of smell 4. Describe the stimulation of olfactory cells and its transmission into central nervous system	1. Ganong’s Review of Medical Physiology.25 TH Edition.Section 02,Vision (Chapter 11, Page 221) (Chapter 11, Page 217) 2. Physiology by Linda S. Costanzo 6 th Edition,Neurophysiology chapter 3, page 100 , chapter 3, page 98 3. Human Physiology by Dee Unglaub Silver thorn. 8 TH Edition.Sensory Physiology (Chapter		1. https://youtu.be/K9JSBzEEA0o 2. https://youtu.be/mFm3yA1nsIE 3. https://www.sciencedirect.com/topics/nursing-and-health-professions/taste 4. https://www.alimentarium.org/en/fact-sheet/senses-smell 5. https://youtu.be/mFm3yA1nsIE	1.C1 2.C2 3.C1 4. C2	SGD	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE	

				10,Page 361) (Chapter 10,Page 358) Textbook of Medical Physiology by Guyton & Hall.14 th Edition..Section 10. (Chapter 54, Page 675-679) . (Chapter 54, Page 679)				
Biochemistry (SDL)	M2-SpS-B-14	2 nd Messenger System	Describe the major second messenger systems (cAMP, cGMP, IP ₃ , DAG, and Ca ²⁺) involved in sensory signal transduction Explain the role of second messengers in amplifying and transmitting signals generated by receptor activation in vision, olfaction, and taste. Correlate alterations in second messenger pathways with abnormalities of sensory perception and selected disorders of the special senses.	Should know	Harper's Illustrated Biochemistry, 32nd Edition, Chapter 42: Hormone Action & Signal Transduction, pg 508–526 & Chapter 40: Membranes—Structure & Function, pg 467–487 Lippincott Illustrated Reviews: Biochemistry, 6th Edition, Chapter: Cell Signaling, pg 205–223			
Biochemistry (SKL)	M2-SpS-B-15	Biochemical Analysis of Aqueous Humor	- Interpret the biochemical composition of aqueous humor, including electrolyte, protein, and metabolite concentrations, and relate these findings to normal ocular physiology. - Analyze laboratory findings of aqueous humor samples and correlate abnormal biochemical parameters with ocular disorders such as glaucoma and intraocular inflammation.	Should know	P	Skill Lab	OSPE	
Radiology	M5-SpS-VI (R)-001	General Radiologic Concepts	Categorize different tissues from most to least opaque on x-ray including bone, soft tissue, air, metal, and fat.	C2		LGIS	MCQs	
ENT	M5-SpS-VI (ENT)-006	Facial fractures	Classify facial fractures	C1		LGIS	MCQs	
			Enumerate treatment options for facial fractures	C2				
EYE	M5-SpS-VI (Eye)-004	Ocular trauma & Ocular Procedures	Blunt	C1		LGIS	MCQs	
			Penetrating					
			Chemical Burns					
			Laceration					

	M5-SpS-VI (Eye)-001	Reflective Error & Strabismus	• Refractive Errors	C1	LGIS	MCQs
			• Types			
			• Treatment			
			• ColourVison			
			• Types			
			• Inheritance			
			• Gender Predisposition			
			• Night Blindness			
			• Etiology			
			• Treatment			

Spiral Courses (3rd Week)

The Pak Studies

Code	Topic	At the End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
M5-SpS-SI (PKS)-002	The Aligarh Movement-I-II	Describe the historical background and emergence of the Aligarh Movement in British India.	C2	LGIS	MCQs
		Identify the key role of Sir Syed Ahmed Khan in initiating the movement and his vision for modern education among Muslims.	C2		
		Explain the objectives of the Aligarh Movement, particularly the promotion of modern scientific education alongside Islamic values.	C2		
M5-SpS-SI (PKS)-003	The 14 Points of Quaid-e-Azam-I-II	Describe the historical context in which Quaid-e-Azam Muhammad Ali Jinnah presented his 14 Points in 1929.	C2	LGIS	MCQs
		Explain how the 14 Points reflected the political, cultural, and religious concerns of Muslims under British rule.	C2		
		Discuss the significance of the 14 Points in the struggle for Muslim identity, autonomy, and the eventual creation of Pakistan.	C2		
M5-SpS-SI (PKS)-004	The Constitution of 1973-I	Describe the historical background and development of the 1973 Constitution of Pakistan	C2	LGIS	MCQs
		Identify the key features of the Constitution, including the structure of government, federalism, and the Islamic character of the state.	C2		
		Explain the fundamental rights guaranteed by the Constitution, especially those related to healthcare, equality, and human dignity.	C2		

The Islamiyat

Code	Topic	At the End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
M5-SpS-SI (I)-003	The importance of the crescent moon (in the light of Hadith).	Describe the importance of the crescent moon (Hilal) in Islamic tradition as a marker for the beginning of lunar months, especially Ramadan and Eid.	C2	LGIS	MCQs
		Explain how the Islamic (Hijri) calendar is based on lunar cycles and how it differs from the Gregorian calendar.	C2		

Transdisciplinary (Hardens Level 11) Clinico-Concept Connect (C³6) Sessions for 3rd Week

Session	Topic	Department	Educational Relevance	At the End of The Demonstration Student Should Be Able To	Learning Domain	Assessment Tool
Clinico-Concept Connect (C ³ 6) Session – III	A Patient with Accommodation Failure/Strabismus; Trauma Links	Anatomy	Orbit, extraocular muscles, oculomotor/trochlear/abducens nerves, optic nerve, visual pathway, eyelids and lacrimal apparatus, infratemporal fossa, pterygopalatine fossa, external and middle ear, development of nose and ear, and anatomical basis of orbital fractures.	Describe the boundaries of the orbit and the arrangement of extraocular muscles.	C3	MCQs
				Identify the actions and nerve supply of extraocular muscles supplied by the oculomotor, trochlear, and abducens nerves.	C3	MCQs
				Explain the anatomical basis of diplopia in cranial nerve palsies and extraocular muscle restriction.	C3	MCQs
				Correlate orbital floor injury with limitation of upward gaze and possible muscle entrapment.	C4	MCQs
				Describe the anatomical components of the visual pathway and relate lesions to visual field defects.	C3	MCQs
				Discuss the anatomy of the eyelids, lacrimal apparatus, infratemporal fossa, pterygopalatine fossa, external and middle ear, and their relevance to facial trauma.	C3	MCQs
		Physiology	Physiology of accommodation, near response, ocular movements, neural control of eyeball movements, lesions of visual pathway, sense	Explain the physiology of accommodation and near response, including convergence and pupillary constriction.	C3	MCQs
				Describe neural control of eyeball movements and coordination of conjugate gaze.	C3	MCQs
				Explain how abnormalities of ocular alignment produce diplopia and strabismus.	C3	MCQs
				Correlate visual pathway lesions with effects on field of vision.	C4	MCQs

			of taste and smell, and clinical abnormalities of accommodation and strabismus.	• Discuss the physiological basis of blurred near vision in accommodation failure.	C3	MCQs
				• Describe the physiology of taste and smell as related week-three learning content.	C3	MCQs
		Biochemistry	Second messenger systems, receptors, neurotransmitters, G-proteins, Vitamin A in vision, and biochemical basis of visual transduction relevant to night blindness and visual symptoms.	• Explain the role of receptors, G-proteins, and second messenger systems in sensory signaling.	C3	MCQs
				• Relate neurotransmitters and cellular signaling mechanisms to ocular motor control and sensory perception.	C3	MCQs
				• Describe the role of Vitamin A in vision and correlate deficiency with night blindness.	C3	MCQs
				• Discuss how biochemical signaling contributes to phototransduction and visual function.	C3	MCQs
				• Correlate biochemical concepts with clinically relevant visual symptoms discussed in the module.	C4	MCQs
		Pathology	Traumatic orbital injury, extraocular muscle entrapment, cranial nerve palsy, strabismus, refractive errors, blow-out fracture, and complications of delayed recognition.	• Explain the basic pathological consequences of blunt orbital trauma.	C3	MCQs
				• Recognize extraocular muscle entrapment, cranial nerve palsy, and orbital fracture as important causes of diplopia.	C3	MCQs
				• Differentiate traumatic diplopia from refractive error, isolated accommodation abnormality, and central neurological causes.	C3	MCQs
				• Identify red-flag features including reduced vision, severe eye pain, afferent pupillary defect, proptosis, globe rupture, repeated vomiting, or altered consciousness.	C3	MCQs
				• Describe complications of delayed diagnosis such as persistent diplopia, ocular motility restriction, and visual impairment.	C3	MCQs
		Pharmacology	Principles of analgesia, anti-inflammatory treatment where appropriate, avoidance of unsafe self-medication, and referral-based management of ocular trauma.	• Outline basic principles of safe symptomatic management after minor ocular/facial trauma under supervision.	C3	MCQs
				• Recognize that suspected orbital fracture, muscle entrapment, globe injury, or cranial nerve palsy requires urgent referral rather than self-medication.	C3	MCQs
				• Identify the need to avoid unnecessary topical steroids or unsupervised eye drops after trauma.	C3	MCQs
				• Counsel patients regarding analgesic safety, adherence to prescribed treatment, and follow-up.	A2	MCQs
		Ophthalmology	Focused assessment of diplopia, blurred near	• Take a focused history from a patient presenting with diplopia and blurred near vision.	C3	MCQs

			vision, accommodation failure, strabismus, ocular trauma red flags, and need for urgent ophthalmic referral.	• Ask about trauma, onset, direction of gaze causing diplopia, headache, vomiting, reduced vision, previous squint, and neurological symptoms.	C3	MCQs
				• Perform a basic structured eye examination including visual acuity, pupillary reflexes, ocular alignment, extraocular movements, and near response.	C3	MCQs
				• Recognize strabismus, accommodation failure, and traumatic orbital injury as clinically important causes of diplopia.	C3	MCQs
				• Identify when urgent ophthalmology, ENT, or emergency referral is required.	C3	MCQs
		Radiology	General radiologic concepts and role of orbital/facial imaging, especially CT, in suspected blow-out fracture, muscle entrapment, or facial fracture	• Explain the role of imaging in suspected orbital blow-out fracture or facial fracture.	C3	MCQs
				• Correlate limitation of eye movement, periorbital swelling, facial tenderness, and diplopia with possible orbital wall injury.	C3	MCQs
				• Recognize associated nasal, sinus, and facial trauma features that require ENT assessment.	C3	MCQs
				• Understand that CT orbit/facial bones is considered in selected trauma cases under clinical supervision.	C3	MCQs

Anatomy LGIS Syllabus of Learning Management System (LMS)

Code	Topics	At the end of lecture students should be able to:	Learning Domains	Calgary Gauge	References
Embryology					
M5-SpS-A-0040	Development of Pharyngeal apparatus	Define the pharyngeal arch apparatus.	C1	Must know	Embryology: - KLM Embryology Developing Human 11th Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Describe components of pharyngeal arches.	C2	Must know	
		Enlist derivatives of each of pharyngeal arch.	C1	Must know	
		Describe the development of pharyngeal grooves and pharyngeal membranes.	C1	Must know	
		Enlist the derivatives of pharyngeal pouches and clefts.	C1	Must know	
		Enlist common birth defects associated with pharyngeal apparatus.	C3	Must know	
		Explain the embryological basis of these defects.	C3	Must know	
		Understand the bio-physiological aspects of arches.	C3	Should know	
		Correlate with the clinical conditions.	C3	Nice to know	
		Understand provision of curative and preventive health care measures.	C3	Nice to know	
		- Practice principles of bioethics. - Apply strategic use of AI in health care.	C3	Nice to know	
		Read relevant research article.	C3	Nice to know	
M5-SpS-A-0041	Development of face, nasal cavities	Describe the developmental stages of face.	C2	Must know Must know	Embryology :- KLM Embryology Developing Human 11th
		Discuss the role of neural crest cells in development of facial skeleton and pharyngeal arch	C2 C3	Must know Must know	

		derivatives.			Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
		Describe the molecular regulation of facial development.	C2	Should know	
		Discuss the congenital anomalies of face.	C3	Should know	
		- Describe the development of nasal cavities and paranasal sinuses. - Understand the bio-physiological	C3 C2	Should know	
		- aspects of face & nasal cavities - Correlate with the clinical	C3	Should know	
		Conditions understand provision of curative and preventive health care measures.	C3	Nice to know	
		Practice principles of bioethics	C3	Nice to know	
		.Apply strategic use of AI in health care.	C3	Nice to know	
		Read relevant research article.	C3	Nice to know	
M5-SpS-A-0042	Development of palate	Discuss the development of primary and secondary palate.	C2	Must know	• Embryology :- KLM Embryology Developing Human 11 th Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
		Enlist the different varieties of cleft palate.	C1	Must know	
		Discuss the etiology of cleft lip and cleft palate.	C3	Must know	
		Describe embryological basis of craniofacial anomalies.	C2	Must know	
		Understand the bio-physiological aspects of Palate.	C3	Should know	
		Correlate with the clinical conditions	C3	Should know	
		Understand provision of curative and preventive health care measures.	C3	Nice to know	
		Practice principles of bioethics.	C3	Nice to know	
		Apply strategic use of AI in health	C3	Nice to know	

		care.			
		• Read relevant research article.	C3	Nice to know	
M5-SpS-A-0043	Development of Eye I (Optic Cup & Retina)	• Describe the different embryological sources of development of eye.	C2	Must know	Embryology :- KLM Embryology Developing Human 11th Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		• Describe development of eye field on rostral neural tube.	C2	Must know	
		• Enlist derivatives of optic cup and development of retina.	C2	Must know	
		• Recall the differentiation of optic grooves and optic vesicle.	C2	Must know	
		• Discuss transformation of optic vesicles into optic cup.	C2	Must know	
		• Describe development of retina.	C2	Must know	
		• Correlate with the clinical conditions.	C2	Should know	
		• Understand provision of curative and preventive health care measures.	C2	Nice to know	
		• Practice principles of bioethics.	C2	Nice to know	
		• Apply strategic use of AI in health care.	C2	Nice to know	
		• Read relevant research article.	C2	Nice to know	
M5-SpS-A-0044	Development of Eye II (Congenital defects)	• Describe formation of optic stalk.	C2	Must know	Embryology :- KLM Embryology Developing Human 11 th Edition
		• Explain induction of optic placodes and lens primordia	C1	Must know	
		• Enumerate neural crest cell and mesenchymal derived eye structures.	C1	Must know	
		• Enlist the molecular regulation of eye development.	C2	Must know	

		Discuss birth defects of the eye.	C3	Should know	USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Correlate with the clinical conditions.	C3	Should know	
		Understand provision of curative and preventive health care measures.	C3	Nice to know	
		Practice principles of bioethics.	C3	Nice to know	
		Apply strategic use of AI in health care.	C3	Nice to know	
		Read relevant research article.	C3	Nice to know	
M5-SpS-A-0045	Development of Ear	Explain the development of optic placodes, otic pit, otic vesicle and otic capsule.	C2	Must know	Embryology :- KLM Embryology Developing Human 11th Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Enlist derivatives of otic vesicle and otic capsule.	C2	Must know	
		Describe development of middle ear cavity and Eustachian tube from tubotympanic recess.	C2	Must know	
		Describe the development of auditory ossicles, tympanic membrane and mastoid antrum.	C1	Must know	
		Discuss development of external acoustic meatus	C3	Must know	
		Enlist common congenital anomalies associated with ear development	C3	Should know	
		Describe the embryological basis of these anomalies	C3	Nice to know	
		Correlate with the clinical conditions	C3	Nice to know	
		Understand provision of curative and preventive health care measures.	C3	Nice to know	
		Practice principles of bioethics.	C3	Nice to know	

		• Apply strategic use of AI in health care.	C3	Nice to know	
		• Read relevant research article.	C3	Nice to know	
Histology					
M5-SpS-A-0046	Ear	• Describe the structural differences between outer, middle and inner ear.	C2	Must know	• Histology :- Junqueira's Basic Histology 18th Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024 •
		• Discuss the functions of different parts of ear.	C2 C2	Must know	
		• Distinguish the auditory part of inner ear from the vestibular system.	C2	Must know	
		• Discuss their roles in hearing & balance	C2	Must know	
		• Describe the fuction of sensory hair cells.	C2 C3	Must know	
		• Describe the appearance and function of spinal ganglia.	C3	Must know	
		• Understand the bio-physiological aspects of hearing	C3	Should know	
		• Correlate with the clinical conditions.	C3	Should know	
		• Understand provision of curative and	C3	Nice to know	
		• Preventive health care measures. • Practice principles of bioethics.	C3	Nice to know	
		• Apply strategic use of AI in health care.	C3	Nice to know	
		• Read relevant research article.	C3	Nice to know	
M5-SpS-A-0047	Eye I (Fibrous & Vascular coat)	• Discuss the histology of different coats of the eyeball.	C2	Must know	• Histology :- Junqueira's Basic Histology 18th Edition
		• Describe histological sections of sclera & Cornea	C2	Must know	
		Describe the histology of choroid ciliary body and iris.	C2	Must know	
		• Discuss histological sections of	C2	Must know	

		accessory structures of the eye.			USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Discuss the histological details of lens chamber & Vitreous body	C2	Must know	
		Understand the bio-physiological aspects of vision	C2	Must know	
		Correlate with the clinical conditions like glaucoma, cataract.	C3	Should know	
		understand provision of curative and	C3	Nice to know	
		- Preventive health care measures. - Practice principles of bioethics.	C3	Nice to know Nice to know	
		Apply strategic use of AI in health care.	C3	Nice to know	
		Read relevant research article.	C3	Nice to know	
M5-SpS-A-0048	Eye II (Retina & Photoreceptors)	Describe layers of retina	C2	Must know	iHistology :- Junqueira' USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024 - s Basic Histology 18th Edition
		Discuss retinal pigment epithelium	C2	Must know	
		Discuss histology& functions of neuronal retina.	C2	Must know	
		Describe photoreceptors & rod cells.	C2	Must know	
		Understand the bio-physiological aspects of Palate.	C3	Must know	
		Correlate with the clinical conditions like retinal detachment	C2	Should know	
		Understands provision of curative and preventive health care measure	C3	Nice to know	
		Practice principles of bioethics.	C3	Nice to know	
		Apply strategic use of AI in health care.	C3	Nice to know	
		Read relevant research article.	C3	Nice to know	

Anatomy SGDs Syllabus of Learning Management System (LMS)

Code	Topics	At the end of lecture students should be able to:	Learning Domains	Calgary Gauge	References
M5-SpS-A-0049	Facial & Superior Aspect of Cranium (Norma Frontalis & Verticalis.)	• Define boundaries of Norma frontalis and verticalis.	C1	Must know	- Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 823-8291). https://youtu.be/rr3-V7Qhf8E https://youtu.be/35Y71cRBqs8 USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		• Enumerate their muscle attachment.	C1	Must know	
		• Describe and features of its structure	C2	Must know	
		• Correlate with the clinical conditions.	C3	Should know	
		• Understand provision of curative and preventive health care measures.	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0050	External Surface of Cranial Base (Norma Basalis)	• Describe bones forming the base of skull	C2	Must know	- Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, P829-836). https://youtu.be/6ZjJPLOJ0N8 https://youtu.be/75lLaDFJTP4 https://youtu.be/fteiKT_wQDE USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		• Explain the details of anterior, middle and posterior part of base of skull	C2	Must know	
		• Identify different foramina and structures passing through them.	C1	Must know	
		• Explain the attachments and relations of base of skull.	C2	Must know	
		• Fracture of cranial base	C2	Must know	
		• Head injuries and intracranial hemorrhage	C3	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• Understand provision of curative and preventive health care measures.	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	

M5-SpS-A-0051	Lateral & Occipital Aspect of Cranium (Norma Lateralis. & Occipitalis)	Enlist various bones in normal lateralis. Describe the cranial and facial subdivision. Define external acoustic meatus,	C1	Must know	- Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 827-829). https://youtu.be/tkpzPMXzwiM https://youtu.be/9Msvtw5CjFY USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Discuss attachments of mastoid and styloid process.	C2	Must know	
		Explain the boundaries of Norma occipitalis.	C2	Must know	
		Identify different foramina and structures passing through them at the base.	C1	Must know	
		Explain its attachments and relations.	C2	Must know	
		Correlate with the clinical conditions	C3	Should know	
		Understand provision of curative and preventive health care measures.	C3	Nice to know	
		Practice principles of bioethics	C3	Nice to know	
		Apply strategic use of AI in health care	C3	Nice to know	
		Read relevant research article	C3	Nice to know	
M5-SpS-A-0052	Mandible	Describe the anatomical features of mandible	C2	Must know	Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. https://youtu.be/_lHosB-c_fQ https://youtu.be/Qc0ysewMJg4 USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Describe parts of mandible	C2	Must know	
		Explain structural features of each part	C2	Must know	
		Enlist attachments of each part	C1	Must know	
		Describe blood and nerve supply of mandible.	C2	Must know	
		Interpret applied anatomy of mandible.	C3	Must know	
		Correlate with the clinical conditions	C3	Should know	
		understand provision of curative and preventive health care measures.	C3	Nice to know	
		Practice principles of bioethics	C3	Nice to know	

		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0053	Temporomandibular joint (TMJ)	• Discuss the temporomandibular joint, its type, formation and neurovascular supply.	C2	Must know	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 916-920). • https://youtu.be/6tJsi5oghNY • https://youtu.be/0BKU04QLzV0 USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
		• Describe the movement's axis and muscles involved.	C2	Must know	
		• Correlate clinically disorders of the temporo- mandibular joint.	C3	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• Understand provision of curative and preventive health care measures.	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0054	Face	• Discuss limits of face.	C2	Must know	• Gross Anatomy :- KLM clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024 • Gross Anatomy :- KLM clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		• Tabulate the muscles of face. (Superficial and deep) origin, insertion, nerve supply and action.	C2	Must know	
		• Discuss their role in facial expression.	C2	Must know	
		• Describe facial nerve palsy upper and lower motor neuron.	C3	Must know	
		• Discuss nerve supply of face.	C1	Must know	
		• Discuss superficial and deep vasculature of face.	C1	Must know	
		• Map the outline of facial artery and vein on simulated patient / model.	P+A	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• Understand provision of curative and preventive health care measures.	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	

		• Apply strategic use of AI in health care • Read relevant research article	C3	Nice to know	
M5-SpS-A-0055	Scalp and temple	• Explain the extent of scalp • Describe the Scalp layers, nerves & vessels • Discuss the clinical correlates like scalp injuries and scalp wounds. • Correlate with the clinical conditions • Understand provision of curative and preventive health care measures. • Practice principles of bioethics • Apply strategic use of AI in health care • Read relevant research article	C2 C2 C3 C3 C3 C3 C3 C3	Must know Must know Must know Should know Nice to know Nice to know Nice to know Nice to know	• Gross Anatomy :- KLM clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
M5-SpS-A-0056	Orbit	• Discuss its location, surfaces and borders • Describe its muscular and ligamentous attachment. • Describe eyeball movements in relation to recti and oblique muscles. • Discuss role of levator palpebrae superioris • Discuss clinical correlations of different coats of eyeball. • Explain extent and subdivisions of pharynx • Correlate with the clinical conditions • Understand provision of curative and preventive health care measures. • Practice principles of bioethics • Apply strategic use of AI in health care • Read relevant research article	C2 C2 C2 C2 C2 C2 C3 C3 C3 C3 C3	Must know Must know Must know Must know Must know Must know Should know Nice to know Nice to know Nice to know Nice to know	• Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 7, Page 889-906). • https://youtu.be/HKEA4p5k66U • https://youtu.be/Oz4kGGiJNrA • USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024

M5-SpS-A-0057	Eyeball	• Describe anatomy of eyeball with suspensory apparatus.	C2	Must know	• Gross Anatomy :- KLM clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
		• Discuss different coats of eyeball with their nerve and blood supply.	C2	Must know	
		• Discuss refractive media and compartments of eyeball.	C2	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• Understand provision of curative and preventive health care measures.	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0058	Eyelid & lacrimal app	• Discuss the different components of lacrimal apparatus	C2	Must know	• Gross Anatomy :- KLM clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
		• Describe the lacrimal gland and its neurovascular supply	C2	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• understand provision of curative and preventive health care measures.	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0059	Parotid & Temporal Region	• Describe boundaries of parotid region.	C2	Must know	• Gross Anatomy :- KLM clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
		• Discuss surfaces, innervation and relations of parotid gland.	C2	Must know	
		• Understand the bio-physiological aspects of arches	C2	Must know	
		• Map the outline of parotid gland and duct on simulated patient / model.	P+As	Must know	
		• Correlate with the clinical conditions	C3	Should know	

		• understand provision of curative and preventive health care measures. • Practice principles of bioethics • Apply strategic use of AI in health care • Read relevant research article	C3	Nice to know	
		• Discuss the boundaries and contents of temporal region.	C2	Must know	
		• Describe the temporalis muscle and its relations	C2	Must know	
		• Enumerate the boundaries and contents of infratemporal region.	C1	Must know	
		• Discuss muscles of mastication	C2	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• understand provision of curative and preventive health care measures.	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0060	Infra temporal Fossa	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 916-926). • https://youtu.be/z2GlluoOtMY • https://youtu.be/ixCCX46XWHA • USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024			
		• Discuss the boundaries and contents of pterygopalatine fossa.	C2	Must know	
		• Discuss the communications of pterygopalatine fossa.	C2	Must know	
		• Understand the bio-physiological aspects of arches	C2	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• understand provision of curative and preventive health care measures	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0061	Pterygopalatine Fossa	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 951-954) • https://youtu.be/9taW-Th3ycc • https USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024 • https://youtu.be/o_JbDynMZjo			
M5-SpS-A-0062		• Describe parts of the ear.	C2	Must know	

	External & Middle Ear	• Discuss walls and contents of external and middle ear,	C2	Must know	• Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 7, Page 966-973). • https://youtu.be/VRLm7cpmZSk • https://youtu.be/unDpXRE_PPA • USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
		• Discuss their blood and nerve supply.	C2	Must know	
		• Explain pharyngeal tube, mastoid antrum and air cells.	C2	Must know	
		• Relation of chorda tympani and facial nerve.	C1	Must know	
		• Discuss Mastoiditis and tubal blockage	C3	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• understand provision of curative and preventive health care measures	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0063	Inner Ear	• Discuss membranous and bony labyrinth.	C2	Must know	• Gross Anatomy :- KLM clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034 • UWORLD Step 1 (Volume 3) 2023-2024
		• Describe internal acoustic meatus.	C2	Must know	
		• Explain the course of 7th and 8th cranial nerve in detail.	C2	Must know	
		• Correlate with the clinical conditions	C3	Should know	
		• understand provision of curative and preventive health care measures	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	
M5-SpS-A-0064	Nose & Paranasal Sinuses	• Discuss anatomy and location of paranasal air sinuses separately.	C2	Must know	• Gross Anatomy :- KLM clinically oriented anatomy edition 10
		• Define & list names of paranasal sinuses	C1	Must know	

		• Describe their blood and nerve supply	C2	Must know	USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		• Describe functions of paranasal sinuses.	C2	Must know	
		• Discuss drainage of paranasal sinuses.	C2	Must know	
		• Identify carious sinuses in radiographs	C1	Must know	
		• Describe anatomy of external nose and features of nasal septum, side and anatomical position.	C2	Must know	
		• Describe details of olfactory receptors and formation of olfactory nerve.	C2	Must know	
		• Discuss blood and nerve supply of external nose and nasal septum.	C2	Must know	
		• Explain functions of nose.	C2	Must know	
		• Discuss in detail clinical correlates of external nose and nasal septum. Lateral nasal wall and their importance.	C2	Should know	
		• Discuss on clinical importance of nasal cavity.	C3	Should know	
		• Correlate with the clinical conditions	C3	Should know	
		• understand provision of curative and preventive health care measures	C3	Nice to know	
		• Practice principles of bioethics	C3	Nice to know	
		• Apply strategic use of AI in health care	C3	Nice to know	
		• Read relevant research article	C3	Nice to know	

Anatomy SKL Syllabus of Learning Management System (LMS)

Code	Topics	At the End of Demonstration Student Should Be Able To	Learning Domains	Importance	References
M5-SpS-A-0065	Cornea	Identify the histological slide cornea.	P	Must know	Histology :-Junqueira's Basic Histology 18th Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Illustrate the microscopic picture of Cornea.	C2	Should know	
		Enlist two points of identification of each	C1	Must know	
		Read a relevant research article	C3	Nice to know	
M5-SpS-A-0066	Retina	Identify the histological slide of retina.	P	Must know	Histology :-Junqueira's Basic Histology 18th Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Illustrate the microscopic picture of retina	C2	Should know	
		Enlist two points of identification	C1	Must know	
		Read a relevant research article	C3	Nice to know	
M5-SpS-A-0067	Ear	- Identify the histological slide of ear	P	Must know	Histology :-Junqueira's Basic Histology 18th Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
		Illustrate the microscopic picture of ear	C1	Should know	
		Enlist two points of identification of each	C1	Must know	
		Read a relevant research article	C3	Nice to know	

Physiology LGIS Syllabus of Learning Management System (LMS)

Code	Topics	Learning Objectives	Calgary Model	Mode of Assessment	Tool of Assessment
M5-SpS-P-0028	Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	• Explain the basic physiology of eye and its refractive surfaces • Discuss the physical principles of optics • Describe the mechanism of accommodation and its control • Describe the errors of refraction (Myopia, hyperopia, astigmatism and their correction by using different lens systems	Must Know (A)/ Should know (B)	LGIS &SDL	MCQs
M5-SpS-P-0029	Introduction to Physiology of external ear, Middle ear	• Describe physiology of external ear • Describe physiology of middle ear • Explain structure of middle ear	Nice to know (C)	SDL	MCQs
M5-SpS-P-0030	Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina	• Describe the formation and circulation of aqueous humor • Explain the mechanism of regulation of intraocular pressure • Define glaucoma and its treatment	Must Know (A)/ Should know (B)	LGIS&SDL	MCQs
M5-SpS-P-0031	Functions of Inner ear, Physiology of Hearing	• Describe the physiology of hearing and function of tympanic membrane and ossicular system. • Define impedance matching and attenuation reflex • Explain the conduction of sound waves in the cochlea	Must Know (A)/ Should know (B)	LGIS&SDL	MCQs
M5-SpS-P-0032	Photochemistry of vision &Physiological basis for photo transduction	• Describe the physiology of retinal layers • Explain photochemistry of vision (rhodopsin - retinal) • Describe the mechanism of activation of Rods • Explain the photochemistry of color vision	Must Know (A)/ Should know (B)	LGIS&SDL	MCQs

M5-SpS-P-0033	Hearing abnormalities, Tuning fork tests and audiometry	• Explain the auditory nervous pathway and abnormalities associated with it. • Describe the function of cerebral cortex in hearing.	Must Know (A)/ Should know (B)	LGIS& SDL	MCQs
M5-SpS-P-0034	Light & dark adaptation, Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information	• Explain the neural circuitry of the Retina • Describe the physiology of visual pathway • Name the optic lesion associated with visual pathway	Must Know (A)/ Should know (B)	LGIS& SDL	MCQs
M5-SpS-P-0035	Vestibular system	• Describe the function of the organ of corti • Explain vestibular system	Nice to know (C)	SDL	MCQs

Biochemistry LGIS Syllabus of Learning Management System (LMS)

Code	Topic	Learning Objectives At the End of Lecture Students Should Be Able To	Calgary Gauge
M5-SpS-B-0016	Receptors and their classification	Define receptors. Classify Receptors	Should Know Should Know
M5-SpS-B-0017	Signal transduction G proteins	Explain the structure and function of G proteins	Must Know
M5-SpS-B-0018	Signal transduction Second messenger system	Describe different types of second messengers	Must Know
M5-SpS-B-0019	Neurotransmitters	Explain synthesis & functions of neurotransmitters. Discuss related clinical disorders	Must Know Must Know
M5-SpS-B-0020	Role of vitamin A in vision	Explain the role of vitamin A in vision. Discuss related clinical abnormalities	Nice to Know Nice to Know
M5-SpS-B-0021	Receptors & G proteins	Explain different types of receptors and G proteins	Should Know
M5-SpS-B-0022	Neurotransmitters	Discuss synthesis, functions & clinical significance of neurotransmitters	Must Know

Case Based Learning Objectives (CBL)

Subjects	Topics	At the end of the session the student should be able to	Learning Domains
Anatomy	• Extra dural Haemorrhage (Norma lateralis & occipitalis)	Apply basic knowledge of subject to study clinical case.	C3
	• Occulo Motor nerve palsy (Extra ocular muscles)	Apply basic knowledge of subject to study clinical case.	C3
Biochemistry	• Night Blindness	Apply basic knowledge of subject to study clinical case.	C3

SECTION – IV

RMU – 12 Integrated Modular MBBS Curriculum 2026 **Isolation to Beyond Boundaries**

Assessment

RMU – 12 Assessment Framework of Integrated Modular MBBS Curriculum 2026

Isolation to **Beyond Boundaries**

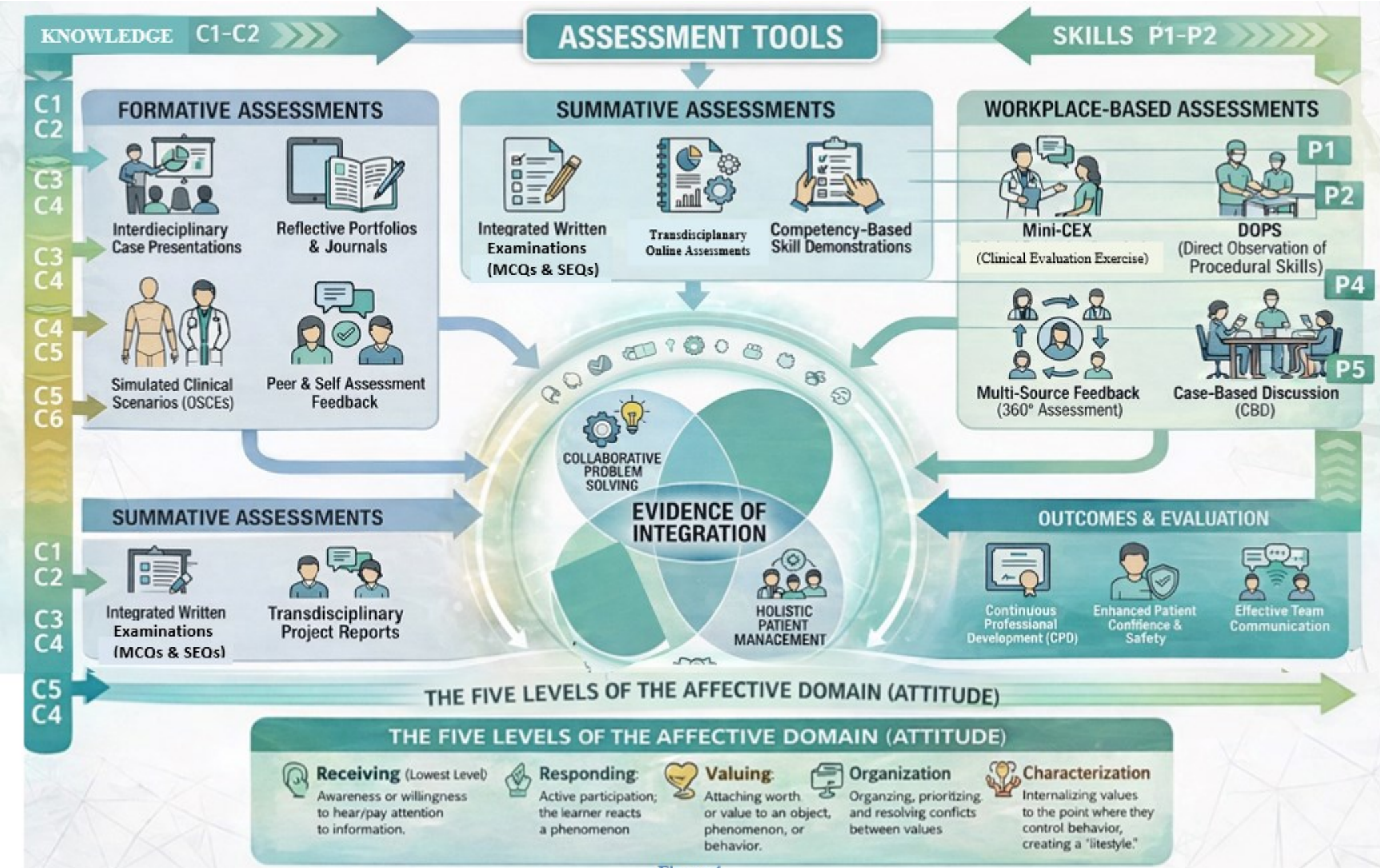


Figure 4

Assessment

Assessment is the systematic basis for making inferences about the learning and development of students. It is the process of defining, selecting, designing, collecting, analyzing, interpreting, and using information to increase students' learning and development.

Assessment Policy

Scope

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 RMU Academic 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 assessment instrument 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 and faculty 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.

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

3. Forms of assessments

3.1 Formative Assessment

A formative assessment refers to a low-stakes assessment that does not normally contribute towards a student's final grade. Assessment for learning is carried out throughout modules and clerkships using various strategies (at the discretion of module coordinators and clerkship directors' feedback. Formative assessment is conducted at both mid-module and end-module stages for clinical lectures and joint multidisciplinary sessions. These assessments are carried out through an on-campus online assessment platform to monitor students' ongoing learning and progress.

3.2 Summative Assessment

A summative assessment is performed at the end of a unit that allows a teacher to measure a student's understanding, typically against a standardized criterion. These Assessment includes End of Module Assessment (EMA), End of Block Assessment (EBA), Pre- Annual Assessment (PAA) and Annual Professional Assessment (APA). Each Assessment comprises of theory component and a practical component.

3.2.1 Components of Assessment

- Cognitive competence is tested in the theory component using the following tool of assessment
 - USMLE/ PLAB Type / Multiple Choice Questions (MCQs)
 - USMLE/ PLAB Type / Extended Match Questions (EMQ)
 - Short Answer Questions (SAQs)
 - Short Essay Questions (SEQs)
- Competence in psychomotor and affect domains is tested in practical component using the following tools of assessment
 - Audio Visual OSPE (AVOSPE): This comprises of stations using PowerPoint slides with images animations and videos
 - Laboratory OSPE (Lab OSPE): This comprises of stations focused on practical (hands on performance) components from core subject areas
 - Integrated OSPE (I OSPE): This comprises of stations, from each core subject, emphasizing horizontal and vertical integration
 - Objective Structured Clinical Examinations (OSCE): This comprises of stations, dedicated to Early Clinical Exposure (ECE), Simulated Patients (SP), models, ALPHA and clinical component of core subjects
 - Objective Structured Viva Examinations (OSVE): This comprises of table viva for each core subject. Students will be evaluated by internal and external examiner using a structured marking rubric, with each viva

3.2.2 End of Module Assessment (EMA)

- End of module assessments will be conducted at the end of each module.
- The module teams will be responsible for the assessment plan including assessment strategies, timings, and other essentials

3.2.3 End of Block Assessment (EBA)

- End of block assessments will be conducted at the end of each block.
- The block teams will be responsible for the assessment plan including assessment strategies, timings, and other essentials
- 85% attendance in each subject will be mandatory
- Student must pass in all LMS, mid module assessments to appear in EBA
- There will be no remedial classes for attendance compensation
- There will be no remedial of assessment in case of poor academic performance

Table of Specification (TOS) For Module Examination for Second Year MBBS

Domains: C-Core Subject (70%) Levels C1-C2, HV- Horizontal & Vertical Integration (20%) Levels C2-C3, S- Spiral Integration (10%) Levels C2-C3																																		
End of Module Assessment	Subject	Theory (Cognitive) Assessment																		Practical (Skill & Attitude) Assessment										Grand Total	Total Time of Module Assessment			
		MCQs					EMQs			SAQs					SEQs				Marks	Total Marks Theory	Total Time	AV OSPE					Time	AED Reflective Writing	OSVE			Total Practical Marks		
		C	HV	S	Total	Marks	C	Total	Marks	C	HV	S	Total	Marks	C	HV	S	Total				C	HV	S	Total	Marks			Viva				Copy	Total
First Module	Anatomy	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Physiology	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Biochemistry	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
Formative- Weekly LMS Based Assessment of 30 MCQs (10 MCQs per Subject)																																		
End of Module Assessment	Subject	Theory (Cognitive) Assessment																		Practical (Skill & Attitude) Assessment										Grand Total	Total Time of Module Assessment			
		MCQs					EMQs			SAQs					SEQs				Marks	Total Marks Theory	Total Time	AV OSPE					Time	AED Reflective Writing	OSVE			Total Practical Marks		
		C	HV	S	Total	Marks	C	Total	Marks	C	HV	S	Total	Marks	C	HV	S	Total				C	HV	S	Total	Marks			Viva				Copy	Total
Second Module	Anatomy	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Physiology	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
	Biochemistry	19	4	2	25	25	1	1	5	3	1	1	5	25	3	1	1	5	45	100	2 HRS	7	2	1	10	50	50 min	15 min	45	5	50	100	200	6 HRS
Formative- Weekly LMS Based Assessment of 30 MCQs (10 MCQs per Subject)																																		

Block	Subjects	LMS Based Assessment					OSPE						Grand Total	Total Block Time
							MCQs					LabOSPE			IOSPE		COSPE
		C	HV	S	Total	Time	C	HV	S	Total	Marks	Time		
BLOCK	Anatomy	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS
	Physiology	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS
	Biochemistry	21	6	3	30	30 min	14	4	2	20	60	6 HRS	90	10 HRS

50% Questions/OSPE Stations/Viva Stations will be from Foundation Module and 50% Questions will be from MSK-1 Module

For Each assessment student will have to individually pass Theory and Practical components

Marks per Item

MCQ=1	EMQ= 5	SAQ= 5	SEQ= 9	AVOSPE= 5	OSPE= 3
OSPE Time=1 Round of 40 Students =80 min					
3 Round of 40 Students =240 min					
OSVE=Time per student=5mins					

Weekly LMS Assessment			
Subjects	Anatomy	Physiology	Biochemistry
No of MCQs*	30	30	30
Marks/MCQ	30	30	30
*MCQ=1 Mark each, 1 min each			

3.2.4 Continuous Internal Assessment (CIA)

Continuous Internal Assessment means the assessment based on tests and assignments given to the students during an academic period.

Break up of internal assessment is as follows:

Subjects	Block-I					Block-II					Block-III					Total CIA (40%)
	On campus assessments (30%)	Off Campus Online LMS based Summative assessments (5%)	(3%) Research	(2%) Artificial Intelligence (AI)	Total (40%)	On campus assessments (30%)	Off Campus Online LMS based Summative assessments (5%)	(3%) Research	(2%) Artificial Intelligence (AI)	Total (40%)	On campus assessments (30%)	Off Campus Online LMS based Summative assessments (5%)	(3%) Research	(2%) Artificial Intelligence (AI)	Total (40%)	
Anatomy	30	5	3	2	40	30	5	3	2	40	30	5	3	2	40	40+40+40=120
Physiology	30	5	3	2	40	30	5	3	2	40	30	5	3	2	40	40+40+40=120
Biochemistry	30	5	3	2	40	30	5	3	2	40	30	5	3	2	40	40+40+40=120
Total Marks of CIA	90	15	9	6	120	90	15	9	6	120	90	15	9	6	120	120+120+120= 360

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

No. of Assessments of Anatomy for Second Year MBBS (Block- IV):

Block	Sr. #	Module – 1 GIT Module - I Components	Type of Assessments	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
Block – IV	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs Av OSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative	
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes					
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes					
	Total				3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 2 Renal Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative	
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes					
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes					
	Total				3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block – IV Assessment	Type of Assessments	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative	
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes					
			Total	5 Hours & 30 Minutes			2 Assessments		

No. of Assessments of Anatomy for Second Year MBBS (Block- V):

Block	Sr. #	Module – 3 Reproduction Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – V	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 4 CNS Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block – V Assessment	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
			Total	5 Hours & 30 Minutes			2 Assessments	

No. of Assessments of Anatomy for Second Year MBBS (Block- VI):

Block	Sr. #	Module – 5 Special Senses Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – VI	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 6 Endocrinology Module-IComponents	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block – VI Assessment	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
			Total	5 Hours & 30 Minutes			2 Assessments	

Total Time of Anatomy Assessments for Second Year MBBS:

Module	Summative Assessment Time	Formative Assessment Time	Total Assessments Time
GIT Module - I	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
Renal Module-I	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -IV	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Reproduction Module-I	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
CNS Module-I	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -V	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Special Senses Module	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
Endocrinology-I Module	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -VI	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Pre-Annual Examination		.....	7 Hours & 45 Minutes
Second Professional		.....	3 Hours & 45 Minutes
Grand Total	31 Hours & 30 Minutes	4 hours and 30 minutes	48 Hours

Total Teaching Hours vs Total Assessment Hours

Ratio of Teaching Hours to Assessments Hours	Grand Total Teaching Hours 250 Hours:	Grand Total Assessment Hours 48 Hours
	5:1	

No. of Assessments of Physiology for Second Year MBBS (Block- IV):

Block	Sr. #	Module – 1 GIT Module - I Components	Type of Assessments	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
Block – IV	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative	
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes					
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes					
	Total				3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 2 Renal Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative	
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes					
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes					
	Total				3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block – IV Assessment	Type of Assessments	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative	
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes					
			Total	5 Hours & 30 Minutes			2 Assessments		

No. of Assessments of Physiology for Second Year MBBS (Block- V)

Block	Sr. #	Module – 3 Reproduction Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – V	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs Av OSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 4 CNS Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs,SAQs,EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block –V Assessment	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
			Total	5 Hours & 30 Minutes			2 Assessments	

No. of Assessments of Physiology for Second Year MBBS (Block- VI):

Block	Sr. #	Module – 5 Special Senses Module Components	Type of Assessment s	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
Block – VI	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative	
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes					
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes					
	Total				3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 6 Endocrinology Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative	
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes					
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes					
	Total				3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block – VI Assessment	Type of Assessments	Total Assessments Time			No. of Assessments		
				Assessment Time	Summative Assessment Time	Formative Assessment Time			
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative	
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes					
			Total	5 Hours & 30 Minutes			2 Assessments		

Total Time of Physiology Assessments for Second Year MBBS:

Module	Summative Assessment Time	Formative Assessment Time	Total Assessments Time
GIT Module - I	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
Renal Module-I	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -IV	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Reproduction Module-I	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
CNS Module-I	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -V	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Special Senses Module	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
Endocrinology-I Module	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -VI	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Pre-Annual Examination		.....	7 Hours & 45 Minutes
Second Professional		.....	3 Hours & 45 Minutes
Grand Total	31 Hours & 30 Minutes	4 hours and 30 minutes	48 Hours

Total Teaching Hours vs Total Assessment Hours

Ratio of Teaching Hours to Assessments Hours	Grand Total Teaching Hours 225 hours:	Grand Total Assessment Hours 48 Hours
	9:2	

No. of Assessments of Biochemistry for Second Year MBBS (Block- IV):

Block	Sr. #	Module – 1 GIT Module - I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – IV	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 2 Renal Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block – IV Assessment	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
	Total			5 Hours & 30 Minutes			2 Assessments	

No. of Assessments of Biochemistry for Second Year MBBS (Block-V):

Block	Sr. #	Module – 3 Reproduction Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – V	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 4 CNS Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block – V Assessment	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
			Total	5 Hours & 30 Minutes			2 Assessments	

No. of Assessments of Biochemistry for Second Year MBBS (Block- VI):

Block	Sr. #	Module – 5 Special Senses Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block – VI	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	30 Minutes	1 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	Weekly LMS based Assessment (MCQs based)	Formative	30 Minutes				
	Total			3 Hours & 05 Minutes			3 Assessments	
	Sr. #	Module – 6 Endocrinology Module-I Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	End Module Examinations (SEQs, SAQs, EMQs, MCQs AvOSPE Based)	Summative	2 Hours 25 minutes	2 Hours & 35 minutes	60 Minutes	2 Formative	2 Summative
	2	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	3	2 Weekly LMS based Assessment (MCQs based)	Formative	2 x 30 Minutes				
	Total			3 Hours & 35 Minutes			4 Assessments	
	Sr. #	Block – VI Assessment	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
	1	Objectively Structured Practical Examination (OSPE)	Summative	5 Hours	5 Hours & 30 minutes			2 Summative
	2	LMS Based Block Assessment (MCQs based)	Summative	30 Minutes				
			Total	5 Hours & 30 Minutes			2 Assessments	

Total Time of Biochemistry Assessments for Second Year MBBS:

Module	Summative Assessment Time	Formative Assessment Time	Total Assessments Time
GIT Module - I	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
Renal Module-I	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -IV	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Reproduction Module-I	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
CNS Module-I	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -V	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Special Senses Module	2 Hours & 35 minutes	30 Minutes	3 Hours & 05 Minutes
Endocrinology-I Module	2 Hours & 35 minutes	60 Minutes	3 Hours & 35 Minutes
Block -VI	5 Hours & 30 Minutes		5 Hours & 30 Minutes
Pre-Annual Examination		.....	7 Hours & 45 Minutes
Second Professional		.....	3 Hours & 45 Minutes
Grand Total	31 Hours & 30 Minutes	4 hours and 30 minutes	48 Hours

Total Teaching Hours vs Total Assessment Hours

Ratio of Teaching Hours to Assessments Hours	Grand Total Teaching Hours 125 Hours:	Grand Total Assessment Hours 48 Hours
	5:2	

No. of Assessments of Clinical Component (Vertical and Horizontal Integration) for Second Year MBBS (Block- IV):

Block	Sr. #	Module – 1 GIT Module - I Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
Block – IV	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			45 Minutes		2 Assessments
	Sr. #	Module – 2 Renal Module-I Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			45 Minutes		2 Assessments

No. of Assessments of Clinical Component (Vertical and Horizontal Integration) for Second Year MBBS (Block- V):

Block	Sr. #	Module – 3 Reproduction Module-I Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
Block – V	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			45 Minutes		2 Assessments
	Sr. #	Module – 4 CNS Module-I Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			45 Minutes		2 Assessments

No. of Assessments of Clinical Component (Vertical and Horizontal Integration) for Second Year MBBS (Block- VI):

Block	Sr. #	Module – 5 Special Senses Module Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
Block – VI	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			45 Minutes		2 Assessments
	Sr. #	Module – 6 Endocrinology Module-I Components	Type of Assessments	Total Assessments Time		No. of Assessments
				Assessment Time	Formative Assessment Time	
	1	Mid Module Examination (MCQs Based)	Formative	15 Minutes	45 Minutes	2 Formative
	2	End Module Examination (MCQs Based)	Formative	30 Minutes		
	Total			45 Minutes		2 Assessments

Total Time of Clinical Component (Vertical and Horizontal Integration) Assessments for Second Year MBBS:

Module	Formative Assessment Time	Total Assessments Time
GIT Module - I	45 Minutes	45 Minutes
Renal Module-I	45 Minutes	45 Minutes
Block -IV		
Reproduction Module-I	45 Minutes	45 Minutes
CNS Module-I	45 Minutes	45 Minutes
Block -V		
Special Senses Module	45 Minutes	45 Minutes
Endocrinology - I Module	45 Minutes	45 Minutes
Block -VI		
Pre-Annual Examination	.....	35 Minutes
Second Professional	.....	60 Minutes
Grand Total	4 hours and 30 minutes	6 hours and 5 minutes

Total Teaching Hours vs Total Assessment Hours

Ratio of Teaching Hours to Assessments Hours	Grand Total Teaching Hours 97 Hours:	Grand Total Assessment Hours 6 Hours
	19:1	

3.2.4 Pre- Annual Assessment (PAA)

- It is mandatory to appear in all EBA to appear in PAA
- Transcript / good character certificate from head of departments will be needed to appear in pre-annual assessment.

Proposed Table of Specifications for 2nd Pre-Annual Examination 2025

- Total Marks: 845

Total marks =800 Marks			
Subjects		% Weightage of subjects	Marks distribution as per weightage
	Anatomy	28%	240 Marks
	Physiology	28%	240 Marks
	Biochemistry	28%	240 Marks
	Integrated Subjects Community Medicine & Public Health/Research Behavioural Sciences Pathology Pharmacology Radiology Family Medicine Surgery Medicine Gynae & Obs Orthopedics Pediatrics Surgery Ophthalmology Otorhinolaryngology	14 %	115 Marks
	Early Clinical Exposure (ECE)	1%	5 Marks
	ALPHA(Artificial Intelligence, Leadership, Professionalism, Humanities & Arts) GEC (General Education Cluster)	1%	5 Marks
	Total Marks		845 Marks

Notes:

- The total marks for final Annual Assessment (Professional examination) are 900 as per UHS
- The total marks for Pre-Annual Assessment are 800 as OSVE is not being used as assessment tool.
- As per analysis of Module/Block results throughout the academic year, the passing percentage of students is generally higher in OSVE than in other assessment tools. For comprehensive assessment this tool will not be used in Pre- Annual Assessment.as per decision of assessment committee OSVE is not included

A - Blockwise Distribution of Marks

Total Marks	BLOCK IV Marks	BLOCK V Marks	BLOCK VI Marks	Total Marks
845 Marks	285 Marks	285 Marks	275 Marks	845 Marks

B - Subject wise marks breakup in Blocks

Subjects	Block IV	Block V	Block VI	Total Marks
Anatomy	80 Marks	80 Marks	80 Marks	240 Marks (28%)
Physiology	80 Marks	80 Marks	80 Marks	240 Marks (28%)
Biochemistry	80 Marks	80 Marks	80 Marks	240 Marks (28%)
Integrated Subjects	45 Marks	45 Marks	35 Marks	125 Marks (16%)

C - Subject wise Break up of Marks for Second year MBBS - Block -IV

Block	Subjects	Theory (Knowledge)	Practical (Skill/attitude)	Total marks	Total marks (Core subjects + Integrated Subjects)
Block IV	Anatomy	50	30	80 marks	240+ 45 = 285 marks
	Physiology	50	30	80 marks	
	Biochemistry	50	30	80 marks	
	Total			240 marks	

(Core subjects + Integrated Subjects)	Integrated Subjects			45 Marks	
	Community Medicine /Research	6 Marks			
	Behavioural Sciences	3 Marks			
	Pathology	2 Marks			
	Pharmacology	3 Marks			
	Radiology	2 Marks			
	Gynae & Obs	4 Marks			
	Medicine	2 Marks			
	Family Medicine	2 Marks			
	Paediatrics	4 Marks			
	Surgery	2 Marks			
	ECE		5 Marks		
	ALPHA and GEC		5 Marks		
	Total		240+ 45 = 285 marks		
marks					

D - Subject wise Break up of Marks for Second year MBBS - Block -V

Block	Subjects	Theory (Knowledge)	Practical (Skill/attitude)	Total marks	Total marks (Core subjects + Integrated Subjects)
Block V (Core subjects + Integrated Subjects) 285 Marks	Anatomy	50	30	80 marks	240+ 45 = 285 marks
	Physiology	50	30	80 marks	
	Biochemistry	50	30	80 marks	
	Total			240 marks	
	Integrated Subjects			45 Marks	
	Community Medicine /Research	4 Marks			
	Family Medicine	3 Marks			
	Orthopedics	3 Marks			

	Radiology	3 Marks			
	Medicine	3 Marks			
	Gynae & Obs	3 Marks			
	Behavioural Sciences	4 Marks			
	Pathology	2 Marks			
	ECE		5 Marks		
	ALPHA and GEC		5 Marks		
Total		240+ 45 = 285 marks			
marks					

E - Subject wise Break up of Marks for Second year MBBS - Block -VI

Block	Subjects	Theory (Knowledge)	Practical (Skill/attitude)	Total marks	Total marks (Core subjects + Integrated Subjects)
Block VI	Anatomy	50	30	80 marks	240+35 = 275 marks
	Physiology	50	30	80 marks	
	Biochemistry	50	30	80 marks	
	Total			240 marks	
Total marks (Core subjects + Integrated Subjects)	Integrated Subjects			35 Marks	
	Community Medicine	2 Marks			
	Behavioural Sciences	2Marks			
	Medicine	3 Marks			
	Family medicine	3 Marks			
	Gynae & Obs	2 Marks			
	Radiology	2 Marks			
	Pediatrics	2 Marks			
	Otorhinolaryngology	3 Marks			
	Ophthalmology	2 Marks			
	Pathology	2Marks			
	Pharmacology	2 Marks			
275 Marks					

	ECE		5 Marks		
	ALPHA and GEC		5 Marks		
Total marks		240+35 = 275 marks			
GRAND TOTAL MARKS		800			

F - Modular distribution of Marks for Module 1(GIT Module - I) & Module 2(Renal Module-I) - Block -IV

Block -IV Theory Component (Knowledge)

Subjects	MCQs			EMQ			SAQ			SEQ			Total marks
	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	
Anatomy	13	12	25	-	01	5	01	01	10	0.5	0.5	10	50
Physiology	12	13	25		01	5	01	01	10		01	10	50
Biochemistry	15	10	25	-	01	5	01	01	10	01	-	10	50
Vertically & Spirally Integrated Subjects			35	-		-	-		-	-		-	35
Total	110		110	3		15	6		30	3		30	185

Block -IV Practical Component (Skill & Attitude)

Subjects	Lab OSPE			Iospe			OSCE			Total stations	Total marks
	Number of Stations of Module - 1	Number of Stations of Module - 2	Marks	Number of Stations of Module - 1	Number of Stations of Module - 2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks		
Anatomy	01	02	15	01		5	01	01	10	6	30
Physiology	01	02	15		01	5	01	01	10	6	30
Biochemistry	01	02	15	-	01	5	01	01	10	6	30
ECE	-		-	-		-		01	5	1	5
ALPHA-Research	-		-	-		-		01	5	1	5
Total	9		45	3		15	8		40	20	100

G- Modular distribution of Marks for Module 3 (Reproduction Module-I) & Module 4(CNS Module-I) - Block -V

Block -V Theory Component (Knowledge)

Subjects	MCQs			EMQ			SAQ			SEQ			Total marks
	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	Module -1	Module-2	Marks	
Anatomy	12	13	25		01	5	01	01	10	0.5	0.5	10	50
Physiology	12	13	25		01	5	01	01	10		01	10	50
Biochemistry	10	15	25		01	5	01	01	10		01	10	50
Vertically & Spirally Integrated Subjects			35	-		-	-		-	-		-	35
Total	110		110	3		15	6		30	3		30	185

Block -V Practical Component (Skill & Attitude)

Subjects	LabOSPE			Iospe			OSCE			Total stations	Total marks
	Number of Stations of Module - 1	Number of Stations of Module - 2	Marks	Number of Stations of Module - 1	Number of Stations of Module - 2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks		
Anatomy	02	01	15	-	01	5	01	01	10	6	30
Physiology	01	02	15		01	5	01	01	10	6	30
Biochemistry	01	02	15	01	-	5	01	01	10	6	30
ECE	-		-	-		-		01	5	1	5
ALPHA-Research	-		-	-		-		01	5	1	5
Total	9		45	3		15	8		40	20	100

H - Modular distribution of Marks for Module 5 (Special Senses Module) &Module 6 (Endocrinology Module) - Block -VI

Block -VI Theory Component (Knowledge)

Subjects	MCQs			EMQ			SAQ			SEQ			Total marks
	Module -1	Module- 2	Marks	Module -1	Module- 2	Marks	Module -1	Module- 2	Marks	Module -1	Module- 2	Marks	
Anatomy	13	12	25	01	-	5	01	01	10	0.5	0.5	10	50
Physiology	13	12	25	01		5	01	01	10	01		10	50
Biochemistry	13	12	25	01	-	5	01	01	10	01	-	10	50
Vertically & Spirally Integrated Subjects			25	-		-	-		-	-		-	25
Total	100		100	3		15	6		30	3		30	175

Block -VI Practical Component (Skill & Attitude)

Subjects	LabOSPE			I OSPE			OSCE			Total stations	Total marks
	Number of Stations of Module - 1	Number of Stations of Module - 2	Marks	Number of Stations of Module - 1	Number of Stations of Module - 2	Marks	Number of Stations of Module -1	Number of Stations of Module -2	Marks		
Anatomy	02	01	15	-	01	5	01	01	10	6	30
Physiology	02	01	15	01	-	5	01	01	10	6	30
Biochemistry	02	01	15	-	01	5	01	01	10	6	30
ECE	-		-	-		-		01	5	1	5
ALPHA-Research	-		-	-		-		01	5	1	5
Total	9		45	3		15	8		40	20	100

Calculation for Pre-Annual Assessment Implementation for Second Year MBBS 2025

Block -IV	Theory component (Knowledge)				Practical component (Skill & Attitude)			Total time required for Block – I pre-annual assessment is 8 hrs and 25 minutes
	MCQs	SAQs	SEQs	EMQs	Lab OSPE	I OSPE	OSCE	
Total number of questions	110	6	3	3	9	3	8	
Time required for each component	110 x 1 min	6 x 10 min	3 x 10 min	3 x 5 min	9 x2.5 min	3 x 2.5 min	8 x 2.5 min	
	110 mins	60 mins	30 mins	25 mins	22.5 mins	7.5 mins	20 mins	
Total time	110+60+30+25 = 225 mins (4hrs and 25 mins)				22.5+7.5+20 = 50 mins/ round of 20 students			4 hrs
					If the OSPE is conducted simultaneously at 4 venues: In 50 minutes, 20 students can complete the OSPE at each venue, totaling 80 students across all venues. With 5 rounds at 4 venues, the entire class can complete the OSPE within 4 hours.			

Block -V	Theory component (Knowledge)				Practical component (Skill & Attitude)			Total time required for Block – II pre-annual assessment is
	MCQs	SAQs	SEQs	EMQs	Lab OSPE	I OSPE	OSCE	

Total number of questions	110	6	3	3	9	3	8	8 hrs and 25 minutes
Time required for each component	110 x 1 min	6 x 10 min	3 x 10 min	3 x 5 min	9 x2.5 min	3 x 2.5 min	8 x 2.5 min	
	110 mins	60 mins	30 mins	25 mins	22.5 mins	7.5 mins	20 mins	
Total time	110+60+30+25 = 225 mins (4hrs and 25 mins)				22.5+7.5+20 = 50 mins/ round of 20 students 4 hrs			
					If the OSPE is conducted simultaneously at 4 venues: In 50 minutes, 20 students can complete the OSPE at each venue, totaling 80 students across all venues. With 5 rounds at 4 venues, the entire class can complete the OSPE within 4 hours.			

Block -VI	Theory component (Knowledge)				Practical component (Skill & Attitude)			Total time required for Block – III pre-annual assessment is 8 hrs and 15 minutes
	MCQs	SAQs	SEQs	EMQs	Lab OSPE	I OSPE	OSCE	
Total number of questions	100	6	3	3	9	3	8	
Time required for each component	100 x 1 min	6 x 10 min	3 x 10 min	3 x 5 min	9 x2.5 min	3 x 2.5 min	8 x 2.5 min	
	100 mins	60 mins	30 mins	25 mins	22.5 mins	7.5 mins	20 mins	
Total time	100+60+30+25 = 225 mins (4hrs and 15 mins)				22.5+7.5+20 = 50 mins/ round of 20 students			4 hrs
					If the OSPE is conducted simultaneously at 4 venues: In 50 minutes, 20 students can complete the OSPE at each venue, totaling 80 students across all venues. With 5 rounds at 4 venues, the entire class can complete the OSPE within 4 hours.			

3.2.5 Annual Professional Assessment (APA)

- Minimum 50% score in pre-annual assessment is required to appear in annual professional examination.
- Annual professional exam weightage will be 70%
- Continuous internal assessment weightage will be 30%
- 60% marks will be needed to pass annual professional examination.
- Written and practical /OSPE/OSCE should be passed separately.

Regulations

- Final Annual Assessment shall be open to any student who:
 - Has been enrolled/registered and completed one academic year preceding the concerned Final Annual Assessment in Rawalpindi Medical University.
 - Has his/her name submitted to the Controller of Examinations for assessment purposes by the Principal of the College and meets all prerequisites for the

assessment.

- Has his/her internal assessment marks for all Blocks submitted to the Controller of Examinations by the Principal of the College along with the admission form.
- Produces good character certificate the following certificates duly verified by the Principal:
- Candidates not meeting the above requirements shall not be allowed to appear in the Final Annual Assessment but may sit for the supplementary examination if they fulfill all remaining requirements and stay enrolled as regular students up to the next examination.
- To pass the Final Annual Assessment, students must achieve at least 50% in both the Written and Oral/Practical/Clinical assessments, as well as a 50% aggregate score simultaneously.
- Candidates scoring 85% or above in any paper will be awarded a "distinction" in that Block, provided they achieve at least 80% in the Written component. Candidates must pass all papers in the Final Annual Assessment concurrently to receive any distinctions.
- A candidate who fails one or more papers in the Final Annual Assessment may temporarily join the next professional class until the supplementary examination but will not be promoted permanently without passing all papers.
- Students taking the supplementary examination for the Second time due to an absence in the annual examination, if failing any paper, will be retained in their current class.
- Any student failing to clear the Second or Second Final Annual Assessment MBBS within four attempts will be ineligible to continue or reapply for MBBS or BDS admission.
- Examination applications must be submitted to the Controller of Examination via the College Principal, with the required fee and documentation.
- College must submit question papers, internal assessment marks, and attendance records for each block to the Examinations Department of Rawalpindi Medical University.
- Revised internal assessments are only permissible for detained students. Continuous assessment records must be maintained by college departments.
- Examination fees are to be paid through the Principal, using a bank draft, pay order, or crossed cheque made out to the Treasurer, Rawalpindi Medical University.
- One annual and one supplementary examination for Second and Second Final Annual Assessment MBBS are allowed per academic session. Under exceptional circumstances, such as national emergencies, a special examination may be arranged with the Syndicate and Board of Governors' approval.

Reference: UHS Integrated Curriculum Version 2

Statutes:

- **Scheduling:** The Second Professional MBBS will be held at the end of Second year whereas the Second Professional MBBS shall be held at the end of Second year.
- **Subjects:** Every candidate is required to appear in the following subjects in each Block
 - a. Core subjects-** Integrated Anatomy, Integrated Physiology, Integrated Biochemistry
 - b. Vertically integrated Subjects-** Community Medicine C Public Health, Behavioral Sciences, Pathology, Pharmacology, associated Clinical Subjects
 - c. Spirally Integrated subjects-** General Education Cluster (GEC), ALPHA (Artificial Intelligence, Leadership, Professionalism, Humanities and Arts), Early Clinical Exposure (ECE) and Research.
- **Assessments:** There will be three papers in Second Annual Professional Examination and four papers in the Second Annual professional Examination.

Paper	Second year MBBS	Second year MBBS
Paper-1	Block -IV	Block -IV
Paper-2	Block- V	Block- V
Paper-3	Block-VI	Block-VI
Paper-4	-----	GEC (Islamic Studies C Pakistan Studies)

a. Second Professional Examination Total Marks = 600*

- Block I Assessment Total Marks = 300
- Block II Assessment Total Marks = 300
- Block III Assessment Total Marks = 300

b. Second Professional Examination- 1000 Marks*

- Block I Assessment Total Marks = 300
- Block II Assessment Total Marks = 300
- Block III Assessment Total Marks = 300

iv. GEC Assessment (Islamic Studies C Pakistan Studies) Total Marks = 100

*Marks Adopted from University of Health Sciences (UHS)

Reference: <https://www.uhs.edu.pk/downloads/2k23mbbscurriculum.pdf>

- **Continuous Internal Assessment (CIA):**

Continuous Internal Assessment shall carry total marks = 270 (30% of the total allocated marks= 900) for Second and second year MBBS. CIA for each block is 90 marks and this score will be equally distributed to the written Assessment (45marks) and practical assessment (45 marks).

- **Block Assessment Components:** the components of Block Assessment shall be as follows:

- a. **One theory Paper (K)** having two sections

- i. **Section:1** One best type Multiple choice questions of 75 Marks (1 mark for each MCQ) and time allocated will be 90 Minutes. The integration ratio in MCQs will be 70% core content, 10% horizontal integration, and 20% vertical integration. There will be no negative marking
 - ii. **Section:2** will have Structured Essay Questions of 5 marks each and time allocated for 1 SEQ will be 10 minutes.

Second year MBBS	Number of MCQs	Number of SEQs
Block -IV	75	6
Block -V	75	6
Block -VI	75	6
Second Year MBBS	Number of MCQs	Number of SEQs
Block -IV	70	7
Block -V	75	6
Block -VI	80	5

- b. **Practical Component (Skill and Attitude):** The assessment will include an Objective Structured Practical Examination (OSPE) with a total of 15 stations, time allocated for each station will be 4 minutes.

- i. **Laboratory OSPE (Lab OSPE):** This section will consist of stations focused on practical (hands on performance) components from core subject areas, each station carries 5 marks.

- ii. **Integrated OSPE (I OSPE):** This section will include stations, from each core subject, emphasizing horizontal and vertical integration, each station carries 5 marks

- i. **Objective Structured Clinical Examinations (OSCE):** This section comprises of stations, dedicated to Early Clinical Exposure (ECE) , Simulated Patients (SP), models, ALPHA and clinical component of core subjects each station carries 5 marks.

ii. **Objective Structured Viva Examinations (OSVE):** This section will consist of table viva for each core subject. Students will be evaluated by internal and external examiner using a structured marking rubric, with each viva carries 15 marks.

Second year MBBS	Number of LabOSPE Stations	Number of iOSPE Stations	Number of OSCE Stations	Number of tables VIVA
Block -IV	5	3	4	3
Block -V	5	3	4	3
Block -VI	4	3	5	3
Second Year MBBS	Number of LabOSPE Stations	Number of iOSPE Stations	Number of OSCE Stations	Number of tables VIVA
Block -IV	4	3	5	3
Block -V	5	3	4	3
Block -VI	5	3	4	3

- **Annual Examination Eligibility Criteria:** Eligibility to appear in Annual Professional will be as per RMU Assessment Policy approved by the Academic Council and Syndicate.
- **Passing Criteria:** A student will be declared pass in a block assessment if he/she scores 50% and above marks in each block assessment component (Theory and Practical) and 50% and above marks in each Core Subject (Anatomy, Physiology C Biochemistry).
- **Supplementary Examination Criteria:** The student who fails in any component of a block assessment will have to appear in the supplementary examination of the entire block.

Table of Abbreviation

CIA	Continuous Internal Assessment
I-OSPE	Integrated OSPE
LabOSPE	Laboratory Objective Structured Practical Examination
OSCE	Objective Structured Clinical Examinations
OSVE	Objective Structured Viva Examinations
ECE	Early Clinical Exposure
ALPHA	(Artificial Intelligence, Leadership, Professionalism, Humanities C Arts
GEC	General Education Cluster
K	Knowledge

Annual Assessment Plan of Second Year MBBS 2025 (Batch 52)

- Total Second Professional Marks: 900
- Continuous Internal Assessment (30%) =270 Marks
- Annual Marks: (70%) =630 Marks

A: Original Distribution of CIA (Continuous Internal Assessment) Marks (270 Marks)

Blocks	Subjects	Total marks	Module 1	Module 2	Total marks
Block IV 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
Block V 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
Block VI 90 Marks	Anatomy	30 marks	15 marks	15 marks	90 Marks
	Physiology	30 marks	15 marks	15 marks	
	Biochemistry	30 marks	15 marks	15 marks	
Total marks					270 Marks

B: Extrapolated marks to be calculated from Summative assessments throughout the Academic Year 2025

Blocks	Modules	Anatomy	Physiology	Biochemistry	Total
Block IV 1470 Marks	Module 1	200	200	200	600
	Module 2	200	200	200	600
	Block Exam	90	90	90	270
	Total	490	490	490	1470
Block V	Module 1	200	200	200	600
	Module 2	200	200	200	600

1470 Marks	Block Exam	90	90	90	270
	Total	490	490	490	1470
Block VI 1470 Marks	Module 1	200	200	200	600
	Module 2	200	200	200	600
	Block Exam	90	90	90	270
	Total	490	490	490	1470
Total Marks		1470	1470	1470	4410

Note:

- Total Operational marks =4410 converted to 270 marks and per block 1470 marks will be converted to 90 marks for Annual professional marks calculation.
- The CIA should be submitted to Examination cell in round off values.
- Evidence of CIA Marks along with papers should be retained in the department that can be reproduced on request by examination cell if required.

Reference: <https://www.uhs.edu.pk/downloads/2k23mbbscurriculumv20.pdf>

Annual Second Professional Examinations 2025

- Total Second Professional Marks: 900
- Continuous Internal Assessment (30%) =270 Marks
- Annual Marks: (70%) =630 Marks

A: Second Professional Examination (70%)

A: Second Professional Examination (70%) Total marks = 630 Marks		
Subjects	% Weightage of subjects	Marks distribution as per weightage
Anatomy	35%	218 Marks
Physiology	30%	192 Marks
Biochemistry	23%	137 Marks
Integrated Subjects • Community Medicine C Public Health/Research • Behavioural Sciences • Pathology • Pharmacology • Radiology • Family Medicine • Surgery • Medicine • Gynae C Obs • Orthopedics • Pediatrics • Surgery • Ophthalmology • Otorhinolaryngology	11%	73 Marks

• Early Clinical Exposure • ALPHA and General Education Cluster (GEC)	2%	10 Marks
Total Marks		630 Marks

B: Blockwise Distribution of Marks

Total Annual Professional Marks (70%)	BLOCK IV Marks	BLOCK V Marks	BLOCK VI Marks	Total Marks
630 Marks	210 Marks	210 Marks	210 Marks	630 Marks

- Reference: <https://www.uhs.edu.pk/downloads/2k23mbbscurriculumv20.pdf>

C: Subject Wise Marks Breakup in Blocks

Subjects	Block IV	Block V	Block VI	Total Marks
Anatomy	85 Marks	78 Marks	55 Marks	218 Marks (35%)
Physiology	45 Marks	64 Marks	83 Marks	192 Marks (30%)
Biochemistry	53 Marks	39 Marks	45 Marks	137 Marks (23%)
Integrated Subjects	27 Marks	29 Marks	27 Marks	83 Marks (13%)

D: Subject Wise Distribution of Marks for Second Year MBBS

Block	Subjects	Theory	Practical	Total marks	Total marks Core Subject + Integrated Subjects
Block IV 					

210 Marks	• Radiology	2 Marks			
	• Medicine	3 Marks			

	Gynae C Obs	1 Marks			
	Behavioural Sciences	4 Marks			
	Pathology	2 Marks			
	ECE		5 Marks		
	ALPHA and GEC		5 Marks		
Total marks		181+29 = 210 marks			
Block	Subjects	Theory	Practical	Total marks	Total marks Core Subject + Integrated Subjects
Block VI 					

E: Block Wise Distribution of Marks for Second Year MBBS (Batch 52) (Annual Professional Marks + CIA)

Subject	Theory			Practical			Total Marks
Block IV (GIT / Renal) Total Annual marks=210	Component	No of Items	Marks	Component	No of Items	Marks	210
	Section I- MCQ	75	75	LabOSPE	5	25	
	Section II- SEQ	6	30	iOSPE	3	15	
			OSCE	4	20		
			OSVE	3	45		
CIA =90 Marks	Continuous Internal Assessment (30%)		45	Continuous Internal Assessment (30%)		45	90
Total Annual marks+ CIA =210+90= 300	Total Marks		150	Total Marks		150	300
Block V (Reproduction, CNS) Total Annual marks=210	Section I- MCQ	75	75	LabOSPE	5	25	210
	Section II- SEQ	6	30	iOSPE	3	15	
			OSCE	4	20		
			OSVE	3	45		
	CIA =90 Marks		Continuous Internal Assessment (30%)		45	Continuous Internal Assessment (30%)		45	90
Total Annual marks+ CIA =210+90= 300	Total Marks		150	Total Marks		150	300
Block VI (Special Senses, Endocrinology) Total Annual marks=210	Section I- MCQ	75	75	LabOSPE	4	20	210
	Section II- SEQ	6	30	iOSPE	3	15	
			OSCE	5	25		
			OSVE	3	45		
	CIA = G0 Marks		Continuous Internal Assessment (30%)		45	Continuous Internal Assessment (30%)		45	90
Total Annual marks + CIA =210+G0= 300	Total Marks		150	Total Marks		150	300
Grand Total Marks							G00

F: 2nd Professional Examination 2025 (Batch 52)

Block IV Assessment Breakup (GIT, Renal Module-I)

Themes	Discipline	Theory				Practical (OSPE)			OSVE	Marks	%	Total Marks per subject	
		No of MCQs (1 marks each)	No of SEQs (5 marks each)	Marks	%	No of Stations of LabOSPE (5 marks each)	No of Stations of iOSPE (5 marks each)	No of Stations of OSCE (5 marks each)	OSVE (15 Marks)			Marks	%
Core s Horizontally Integrated Subjects	Anatomy C Applied /Clinical	30	3	45	30	3	1	1	1	40	32	85	40
	Physiology C Applied/Clinical	10	2	20	26	1	1	-	1	25	29	45	21
	Biochemistry C Applied/clinical	18	1	23	26	1	1	1	1	30	29	53	25
Vertically Integrated Subjects	Community Medicine C Public Health/Research	4	-	3	4	-	-	-	-	-	-	4	14
	Behavioural Sciences	2	-	1	2	-	-	-	-	-	-	2	
	Pathology	2	-	2	2	-	-	-	-	-	-	2	
	Radiology	1		1								1	
	Gynae C Obs	1		1								1	
	Medicine	1		1								1	
	Family Medicine	1		1								1	
	Paediatrics	1		1								1	
	Surgery	1		1								1	
	Pharmacology	3	-	3	3	-	-		-	-	-	3	
	ECE	-	-	-		-	-	1	-	5	5	5	
Spirally Integrated Subjects	ALPHA and GEC	-	-	-		-	-	1	-	5	5	5	
Total		75	6x5=30	105	100	5x5=25	3x5=15	4x5=20	3x15=45	105	100	210	100
Total		105				105					105+105=210		

G: 2nd Professional Examination 2025 (Batch 52)

Block V Assessment

Reproduction, CNS Module-I

Theme	Subject	Theory			Practical			OSVE		Total Marks per subject	
		No of MCQs (1 marks each)	No of SEQs (5 marks each)	Marks	No of Stations of LabOSPE (5 marks each)	No of Stations of iOSPE (5 marks each)	No of Stations of OSCE (5 marks each)	OSVE (15 Marks)	Marks	Total Marks	%
Core s Horizontally Integrated Subjects	Anatomy C Applied /Clinical	23	3	38	3	1	1	1	40	78	37
	Physiology C Applied/Clinical	24	2	29	1	1	1	1	30	64	30
	Biochemistry C Applied/clinical	9	1	14	1	1	-	1	25	39	18
Vertically Integrated Subjects	Community Medicine C Public Health	4	-	4	-	-	-	-	-	4	15
	Behavioural Sciences	4	-	4	-	-	-	-	-	4	
	Pathology	2	-	2	-	-	-	-	-	2	
	Family Medicine	1								1	
	Orthopedics	2								2	
	Radiology	2								2	
	Medicine	3								3	
	Gynae C Obs	1								1	
Spirally Integrated Subjects	ECE	-	-	-	-	-	1	-	5	5	
	ALPHA and GEC	-	-	-	-	-	1	-	5	5	
Total		75	6x5=30	105	5x5=25	3x5=15	4x5=20	3x15=45	105	210	100
Total		105			105				105+105=210		

H: 2nd Professional Examination 2025 (Batch 52)
Block VI Assessment
Special Senses, Endocrinology Modules

Themes	Discipline	Theory			Practical			OSVE	Total Marks per subject		
		No of MC Qs (1 marks each)	No of SEQs (5 marks each)	Marks	No of Stations of LabOSPE (5 marks each)	No of Stations of iOSPE (5 marks each)	No of Stations of OSCE (5 marks each)	OSVE (15 Marks)	Marks	Marks	%
Core s Horizontally Integrated Subjects	Anatomy C Applied /Clinical	15	2	25	1	1	1	1	30	55	26
	Physiology C Applied/Clinical	33	3	48	2	1	1	1	35	83	40
	Biochemistry C Applied/clinical	10	1	15	1	1	1	1	30	45	21
Vertically Integrated Subjects	Community Medicine C Public Health	2	-	2	-	-	-	-	-	2	13
	Behavioural Sciences	2	-	2	-	-	-	-	-	2	
	Pathology	2	-	2	-	-	-	-	-	2	
	Medicine	2		2						2	
	Family medicine	1		1						1	
	Gynae C Obs	1		1						1	
	Radiology	1		1						1	
	Pediatrics	1		1						1	
	Otorhinolaryngology	1		1						1	
	Ophthalmology	1		1						1	
	Pathology	2		2						2	
	Pharmacology	1	-	1	-	-	-	-		1	
Spirally Integrated Subjects	ECE	-	-	-	-	-	1	-	5	5	
	ALPHA and GEC	-	-	-	-	-	1	-	5	5	
Total		75	6x5=30	105	4x5=20	3x5=15	5x5=25	3x15=45	105	210	100
Total		105			105			105+105=210			

SECTION - VI

Time Table

RMU – 12 Integrated Modular MBBS Curriculum 2026

Isolation to **Beyond Boundaries**

Special Senses Module - I Time Table

Second Year MBBS

Session 2025 - 2026

Batch- 52

Special Senses Module Team

Module Name	:	Special Senses Module-I
Duration of module	:	04 Weeks
Coordinator	:	Dr. Sadia Aman
Co-coordinator	:	Dr. Minahil Haq
Reviewed by	:	Module Committee

Module Committee			Module Task Force Team		
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Khurram	1.	Coordinator	Dr. Sadia Aman (Assistant Professor of Anatomy)
2.	Director DME & Dean Basic Sciences	Prof. Dr. Ifra Saeed	2.	DME Focal Person	Dr. Farzana Fatima
3.	Additional Director (Assessment) DME	Dr. Arsalan Manzoor Mughal	3.	Co-coordinator	Dr. Minahil Haq (Senior Demonstrator of Anatomy)
4.	Chairperson Physiology	Prof. Dr. Samia Sarwar	4.	Co-Coordinator	Dr. Fareed Ullah Khan (Demonstrator of Physiology)
5.	Chairperson Anatomy	Prof. Dr. Ayesha Yousaf	5.	Co-coordinator	Dr. Khalid Yaqoob (Demonstrator of Biochemistry)
6.	Chairperson Biochemistry	Dr. Aneela Jamil			
7.	Focal Person Anatomy 2 nd Year MBBS	Dr. Maria Tasleem			
8.	Focal Person Physiology	Dr. Sidra Hamid	DME Implementation Team		
9.	Focal Person Pharmacology	Dr. Zunera Hakim	1.	Director DME	Prof. Dr. Ifra Saeed
10.	Focal Person Pathology	Dr. Syeda Ayesha	2.	Implementation Incharge 1st & 2 nd Year MBBS	Dr. Arsalan Manzoor Mughal
11.	Focal Person Behavioral Sciences	Dr. Zona Tahir			Dr. Farzana Fatima
12.	Focal Person Community Medicine	Dr Maria	3.	Assistant Director DME	Dr. Farzana Fatima
13.	Focal Person Quran Translation Lectures	Dr. Fahd Anwar	4.	Editor	Muhammad Arslan Aslam
14.	Focal Person Family Medicine	Dr. Sadia Khan			

Discipline Wise Details of Modular Contents

Integration								
Theory								
Block	Subjects	Embryology	Histology	Histology Practical SKL. Lab.	Gross Anatomy	CBL	SDL	
VI	Anatomy	- Development of Eye - Development of Pharyngeal arches - Development of Ear	- Histology of Eye - Histology of Ear	- Cornea - Retina - External and Internal ear	- Facial and superior aspect of cranium (Norma frontalis, Norma verticalis) - External surface of cranial base (Norma basalis) - Lateral and occipital aspect of cranium (Norma lateralis, occipitalis) - Mandible - Temporomandibular joint - Face - Scalp - Orbit boundaries and Extraocular muscles - Vessels and nerves of orbit - Eyeball - Eyelid and lacrimal apparatus - Parotid and temporal region - Infratemporal fossa - Pterygopalatine fossa - External and middle ear - Inner ear - Nose and paranasal sinuses	- Oculomotor nerve palsy - Extra Dural hemorrhage	- Norma frontalis, verticalis and basalis - Lateralis and occipitalis, TMJ & Mandible - Orbit boundaries - Extraocular muscles - Vessels and Nerves of orbit - Temporal and Infra temporal region, Pterygopalatine fossa - External and middle ear	
	Physiology	Physiology of Ear & Eye						
	Biochemistry	Receptors, Second messengers, Neurotransmitters, Vitamin A role in vision						
	Spiral Courses							
	The Islamiyat	- Equality among humans, religious freedom, the principle of merit, justice - Women's Rights - The importance of the crescent moon (in the light of Hadith).						
	Pak Studies	- The services/contributions of Hazrat Shah Waliullah-I - The services/contributions of Hazrat Shah Waliullah-II						

		• The Aligarh Movement-I • The Aligarh Movement-II • The 14 Points of Quaid-e-Azam-I • The Constitution of 1973-I
	• Behavioral Sciences	• Sleep & Arousal
	• Radiology	• General Radiologic Concepts
	• Family Medicine	• Approach to a patient with earache
	Vertical Integration	
	• ENT	• Nasal polyp & Sinusitis & Diseases of External Nose • Otitis Media Ear Discharge & Hearing Problems in Children • Facial fractures • Deafness • Vertigo
	• Eye	• Refractive Errors Strabismus • Ocular trauma & Ocular Procedures • Conjunctivitis Chalazion • Cataract & Glaucoma

Categorization of Modular Contents

Anatomy

Category A*	Category B**	Category C***			
		Demonstrations / SGD	CBL	SKL/Practical's	Self-Directed Learning (SDL)
Special Embryology	Special Histology	- Facial and superior aspect of cranium (Norma frontalis, Norma verticalis) - External surface of cranial base (Norma basalis) - Lateral and occipital aspect of cranium (Norma lateralis, occipitalis) - Mandible - Temporomandibular joint - Face - Scalp - Orbit boundaries Extraocular muscles - Vessels and nerves of orbit - Eye ball - Eyelid and lacrimal apparatus - Parotid and temporal region - Infratemporal fossa - Pterygopalatine fossa - External and middle ear - Inner ear - Nose and paranasal sinuses	- Oculomotor nerve palsy - Extra Dural hemorrhage	- Cornea - Retina - External and internal ear	- Norma frontalis, verticalis and basalis - Lateralis and occipitalis, TMJ & Mandible - Orbit boundaries & Extraocular muscles - Vessels and Nerves of orbit - Temporal and Infra temporal region, Pterygopalatine fossa - External and middle ear

Category A*: By Professors

Category B:** By Associate & Assistant Professors

Category C*:** By Senior Demonstrators & Demonstrator

Teaching Staff / Human Resources of Department of Anatomy

Sr. #	Designation of Teaching Staff / Human Resource	Total number of teaching staff
1.	Professor of Anatomy department	01
2.	Assistant professor of Anatomy department (AP)	01
3.	Demonstrators of Anatomy department	05
4.	Postgraduate MPhil Trainees	02

Contact Hours (Faculty)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	$2 * 09 = 18$ hours
2.	Small Group Discussions (SGD)	$2*17 + 1*4 = 38$ hours
3.	Practical / Skill Lab	$1.5 * 15 = 22.5$ hours

Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	$1 * 9 = 09$ hours
2.	Small Group Discussions (SGD)	$2*17 + 1*4 = 38$ hours
3.	Practical / Skill Lab	$1.5 * 3 = 4.5$ hours
4.	Self-Directed Learning (SDL)	$2 * 3 = 06$ hours

Physiology

Category A	Category B	Category C
Photochemistry of vision & Physiological basis for photo transduction (By Prof. Dr. Samia Sarwar / Dr. Uzma)	Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction (By Dr. Uzma)	CBL:
Physiology of accommodation and clinical abnormalities (By Prof. Dr. Samia Sarwar / Dr. Uzma)	Introduction to Physiology of external ear, Middle ear (By Dr. Fareed)	PBL:
	Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina (By Dr. Uzma)	Practical: 1. Estimation of Visual Acuity 2. Examination of 8 th Cranial Nerve (vestibular function) 3. Performance of Hearing Test (cochlear function)
	Functions of Inner ear, Physiology of Hearing (By Dr. Fareed)	CBL:
	Hearing abnormalities, Tuning fork tests and audiometry (By Dr. Aneela)	SGD: 1. Physiology of Vision 2. Physiology of hearing & Balance 3. Sense of Taste & Smell
	Light & dark adaptation, Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information (By Dr. Uzma)	SDL: (ON CAMPUS) 1. Introduction to Physiology of external ear, Middle ear 2. Functions of Inner ear, Physiology of Hearing 3. Hearing abnormalities, Tuning fork tests and audiometry (OFF CAMPUS) 4. Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction 5. Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina 6. Photochemistry of vision & Physiological basis for photo transduction 7. Vestibular system 8. Sense of Taste and pathophysiology 9. Sense of Smell and pathophysiology
	Vestibular system (By Dr. Sidra)	
	Lesions of visual pathway and its effects on field of vision, Movements of eyeball along with neural control (By Dr. Uzma)	
	Sense of Taste and pathophysiology (By Dr. Kamil)	
	Sense of Smell and pathophysiology (By Dr. Kamil)	

Category A*: By Professors

Category B:** By Associate & Assistant Professors

Category C*:** By Senior Demonstrators & Demonstrators

Teaching Staff / Human Resources of Department of Physiology

Sr . #	Designation of Teaching Staff / Human Resource	Total number of teaching staff
1.	Professor of Physiology department	01
2.	Assistant professor of Physiology department (AP)	01
3.	Associate professor of Physiology department	01 (DME)
4..	Demonstrators of Anatomy department	07
5.	Residents of physiology department (PGTs)	08

Contact Hours (Faculty) & Contact Hours (Students)

Sr . #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	12 * 1 = 12 hours
2.	Small Group Discussions (SGD) Case based learning (CBL)	1.5 * 3 = 4.5 hours
3.	Problem based learning (PBL)	--
4.	Practical / Skill Lab	1.5 * 3 = 4.5 hours
5.	Self- Directed Learning	3x1=3hours (on campus) + 6x1=6hours (off campus) = 9hours

Biochemistry

Category A*	Category B**	Catogery C***			
LGIS	LGIS	PBL	CBL	Practical's	SGD
- Neurotransmitter - Second Messenger - G-Proteins	- Receptors - Role of Vitamin A in Vision		Night Blindness	- Lipid Profile - Urine Report Revision - Spectrophotometer Revision	- Neurotransmitters - G-Proteins
Category A*: By HOD and Associate Professor					
Category B**: By Assistant Professors, Senior Demonstrators					
Category C***: (By All Demonstrators)					

Teaching Staff / Human Resource of Department of Biochemistry

Sr. #	Designation of Teaching Staff / Human Resource	Total number of teaching staff
1	Associate Professor of biochemistry department	02
2	Assistant professor of biochemistry department (AP)	02
3.	Demonstrators of biochemistry department	07

Contact Hours (Faculty) & Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours (Faculty)	Total Hours (student)
1.	Large Group Interactive Session (LECTURES)	$2 * 5 = 10\text{hours}$	05
2.	Small Group Discussions (SGD)	$1.5 * 5 = 7.5\text{hours} = 22.5 \text{ hrs}$	4.5
3.	Problem Based Learning (PBL)	Zero	zero
4.	Practical / Skill Lab	$1.5 * 5 = 7.5\text{hours} = 22.5 \text{ hrs}$	4.5
5.	Self-Directed Learning (SDL)	-----	05

Second Year MBBS Time Table for Special Senses Module (First Week) **(01-10-2026 To 07-10-2026)**

Date/Day	Theme	8:00am-9:20am	9:20am – 10:10am	10:10am – 10:30am	10:30am-11:20am	11:20am-12:10pm	12:10pm-12:30pm	12:30pm – 2:00pm	Home Assignments (2hrs)					
01-10-2026 Thursday	Blurred Vision & Red-Flag Eye Pressure Symptoms (headache/halos)	Practical & CBL/SGD Topic mentioned at the end	PHYSIOLOGY LGIS		Break	ANATOMY LGIS		BEHAVIORAL SCIENCES		Break	SGD/DISECTION		SDL Physiology Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	
			Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	Introduction to Physiology of external ear, Middle ear		Histology of Eye-I	Development of Eye-I	Sleep & Arousal			Facial and superior aspect of cranium (Norma frontalis & Norma verticalis)			
			Dr. Uzma/Dr. Afsheen (Even)	Dr. Fareed (Odd)		Assist. Prof. Dr. Maria (Even)	Prof. Dr. Ifra Saeed (Odd)	Dr. Zona Tahir (Even)	Dr. Zarnain Umair (Odd)					
Date/Day		8:00am-9:00am	9:00am-10:00am	10:00am-11:00am		11:00am-12:00pm		Home Assignments						
02-10-2026 Friday		SGD/DISECTION	PHYSIOLOGY LGIS		ISLAMIYAT		ENT		SDL Physiology Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina					
		Face	Introduction to Physiology of external ear, Middle ear	Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	11) Equality among humans, religious freedom, the principle of merit, justice		Nasal polyp& Sinusitis & Diseases of External Nose							
					Mufti Naem Sherazi		Dr. Farhat (Even)	Dr. Namara (Odd)						
Date/Day		8:00am-9:20am	9:20am – 10:10am	10:10am – 10:30am	10:30am-11:20am	11:20am-12:10pm	12:10pm-12:30pm	12:30pm – 2:00pm	Home Assignments (2hrs)					
03-10-2026 Saturday		Practical & CBL/SGD Topic mentioned at the end	PHYSIOLOGY LGIS		Break	PBL 1 (SESSION-I)		BIOCHEMISTRY (LGIS)		Break	SGD/DISECTION		SDL Biochemistry Parkinson’s Disease	
			Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina	Functions of Inner ear, Physiology of Hearing		PBL Team	Receptors	Neurotransmitters	External surface of cranial base (Norma basalis)					
							Dr. Uzma/Dr. Afsheen (Even)	Dr Fareed (Odd)			Dr. Romessa (Even)	Dr. Amena Arif (Odd)		
05-10-2026 Monday		Practical & CBL/SGD Topic mentioned at the end	BIOCHEMISTRY (LGIS)		Break	PAK STUDIES		EYE		Break	CBL/DISECTION		SDL Biochemistry Mysthenia Gravis	
			Neurotransmitters	Receptors		11) The services/contributions of Hazrat Shah Waliullah-I		Cataract & Glaucoma			Lateral and occipital aspect of cranium (Norma lateralis & occipitalis) Extra Dural hemorrhage			
			Dr. Amena Arif (Even)	Dr. Romessa (Odd)		Miss. Kinza Faiz		Dr. Fatima (Even)	Dr. Maria (Odd)					
06-10-2026 Tuesday		Practical & CBL/SGD Topic mentioned at the end	BIOCHEMISTRY (LGIS)		Break	ANATOMY LGIS		EYE		Break	SGD/DISECTION		SDL Anatomy Craniosynostosis	
			Role of Vitamin A in Vision	G-Proteins		Development of Eye-I	Histology of Eye-I	Conjunctivitis Chalazion			Temporomandibular Joint			
			Dr. Almaas (Even)	Dr. Kanwal (Odd)		Prof. Dr. Ifra Saeed (Even)	Assist. Prof. Dr. Maria (Odd)	Dr. Salman (Even)	Dr. Rafaq (Odd)					
07-10-2026 Wednesday		Practical & CBL/SGD Topic mentioned at the end	PHYSIOLOGY LGIS		Break	PBL 1 (SESSION-II)		CLINICO-CONCEPT CONNECT (C36) SESSION – I		Break	SGD/DISECTION		SDL Anatomy Basilar skull fracture	
			Functions of Inner ear, Physiology of Hearing	Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina		PBL Team	Blurred Vision & Red-Flag Eye Pressure Symptoms (headache/halos)		Scalp					
							Anatomy	Dr. Sadia						
							Physiology	Dr. Fareed						
							Biochemistry							
							Pathology							
			Pharmacology											
Ophthalmology		Dr. Saira												
		Dr Fareed (Even)	Dr. Uzma/Dr. Afsheen (Odd)											

Table No. 1 (Time: 08:00am – 09:20am)															
Batch Distribution for Practical Skills (all subjects) CBL / Small Group Discussion(Biochemistry and Physiology)			Topics for Skill Lab with Venue		Schedule for Practical										
					Day	Histology Practical		Biochemistry Practical		Physiology Practical			Physiology SGD		Biochemistry SGD
Batch	Teacher Name	Batch	Teacher Name	Supervised by HOD		Batch	Teacher Name	Supervised by HOD	Batch	Teacher Name	Batch		Teacher Name		
Sr. No	Batch	Roll No.	Monday		C	Supervised by HOD	B		Dr. Rahat	E	Dr. Fareed	A	Dr. Aneela	D	Dr. Uzma
1.	A	01-70	Tuesday		D		C		Dr. Almas	A	Dr. Aneela	B	Dr. Shazia	E	Dr. Romessa
2.	B	71-140	Wednesday		E		D		Dr. Uzma	B	Dr. Shazia	C	Dr. Fahd	A	Dr. Sana Latif
3.	C	141-210	Thursday		B		A		Dr. Sana Latif	D	Dr. Jawad	E	Dr. Fareed	C	Dr. Almas
4.	D	211-280	Saturday		A		E		Dr. Romessa	C	Dr. Fahd Anwar	D	Dr. Jawad	B	Dr. Rahat
5.	E	281-onwards													
			Topics for SGDs / CBL with Venue												
			- Physiology SGD: Physiology of Vision (Venue: Lecture Hall No 5) - Biochemistry SGD: Neurotransmitter - Anatomy CBL: Extradural Hemorrhage												

Table No. 4 Batch Distribution and Venues for Anatomy Small Group Discussion SGDs / Dissections					Table No. 5 Batch Distribution and Venues for Physiology & Biochemistry Small Group Discussion SGDs								
Batches	Roll No	Subgroup	Anatomy Teacher	Venue	Batches	Roll No	Subgroup	Physiology Teacher	Physiology Venue	Biochemistry Teacher	Biochemistry Venue		
A	01- 60	A1: Roll No (1 – 15) A2: Roll No (16 – 30) A3: Roll No (31 – 45) A4: Roll No (46 – 60)	Dr. Tariq Furqan (Senior Demonstrator Anatomy)	Anatomy Lecture Hall 04	A	01-70	A1: Roll No (1 – 14) A2: Roll No (15 – 28) A3: Roll No (29 – 42) A4: Roll No (43 – 56) A5: Roll No (57 – 70)	Dr. Aneela Yasmeen (APWMO)	Physiology Lecture Hall 5	Dr. Uzma Zafar (APWMO)	Basement Lecture Hall No. 2		
B	61-120	B1: Roll No (61 – 75) B2: Roll No (76 – 90) B3: Roll No (91 – 105) B4: Roll No (06 – 120)	Dr. Minahil (Senior. Demonstrator)	New Lecture Hall Complex 02	B	71-140	B1: Roll No (71 – 84) B2: Roll No (85 – 98) B3: Roll No (99 – 112) B4: Roll No (113 – 126) B5: Roll No (127 – 140)	Dr. Shazia Nosheen (APWMO)	Physiology Lecture Hall 5	Dr. Rahat (APWMO)	Basement Lecture Hall No. 2		
C	121-180	C1: Roll No (121 – 135) C2: Roll No (136 – 150) C3: Roll No (151 – 165) C4: Roll No (166 – 180)	Dr. Sara Bano (Assistant Professor)	New Lecture Hall Complex 01	C	141-210	C1: Roll No (141 – 154) C2: Roll No (155 – 168) C3: Roll No (169 – 182) C4: Roll No (183 – 196) C5: Roll No (197 – 210)	Dr. Fahd Anwar (Demonstrator)	Physiology Lecture Hall 5	Dr. Almas (APWMO)	Basement Lecture Hall No. 2		
D	181- 240	D1: Roll No (181 – 195) D2: Roll No (196 - 210) D3: Roll No (211 – 225) D4: Roll No (226 – 240)	Dr. Sana (PGT Anatomy)	Anatomy Lecture Hall 03	D	211-280	D1: Roll No (211 – 224) D2: Roll No (225 – 238) D3: Roll No (239 – 252) D4: Roll No (253 – 266) D5: Roll No (267 – 280)	Dr. Jawad (Demonstrator)	Physiology Lecture Hall 5	Dr. Sana Latif (Senior Demonstrator)	Basement Lecture Hall No. 2		
E	241- 300	E1: Roll No (241 – 255) E2: Roll No (256 – 270) E3: Roll No (271 – 285) E4: Roll No (286 – 300)	Dr. Sadia Baqir (Senior. Demonstrator)	New Lecture Hall Complex 03	E	281- onwards	E1: Roll No (281 – 294) E2: Roll No (295 – 308) E3: Roll No (309 – 322) E4: Roll No (323 – 336) E5: Roll No (337 – onwards)	Dr. Fareed (Demonstrator)	Physiology Lecture Hall 5	Dr. Romessa (Demonstrator)	Basement Lecture Hall No. 2		
F	301- onwards	F1: Roll No (301 – 315) F2: Roll No 316 – 330) F3: Roll No 331 – 345) F4: Roll No (346 – onwards)	Dr. Sadia Amaan (Assistant Professor)	New Lecture Hall Complex 4									
Supervised by Prof. Dr. Ayesha Yousaf					Supervised by Prof. Dr. Samia Sarwar							Supervised by. Dr. Aneela Jamil	

Second Year MBBS Time Table for Special Senses Module (Second Week)
(08-10-2026 To 14-10-2026)

Date/Day	Theme	8:00am-9:20am		9:20am – 10:10am		10:10am – 10:30am	10:30am-11:20am		11:20am-12:10pm		12:10pm-12:30pm	12:30pm – 2:00pm		Home Assignments (2hrs)					
08-10-2026 Thursday	Vertigo & Hearing Loss (with abnormal bedside hearing tests)	Practical & CBL/SGD Topic mentioned at the end		PHYSIOLOGY LGIS		Break	ANATOMY (LGIS)		BIOCHEMISTRY (LGIS)		Break	CBL/ DISSECTION		SDL Biochemistry Clinical Aspects of Vitamin A					
				Photochemistry of vision &Physiological basis for photo transduction			Hearing abnormalities, Tuning fork tests and audiometry		Histology of Eye-II			Development of Eye-II				G-Proteins		Role of Vitamin A in Vision	
				Prof. Dr. Samia /Dr. Afsheen (Even)			Dr. Aneela (Odd)		Assist. Prof. Dr. Maria (Even)			Prof. Dr. Ifra Saeed (Odd)				Dr. Kanwal (Even)		Dr. Almaas (Odd)	
Date/Day		8:00am-9:00am		9:00am-10:00am			10:00am-11:00am		11:00am-12:00pm			Home Assignments (2hrs)							
09-10-2026 Friday		BIOCHEMISTRY (LGIS)		PHYSIOLOGY LGIS		ISLAMIAT				FAMILY MEDICINE		SDL Anatomy Epidural haemorrhage							
		Second messenger system	Second messenger system	Hearing abnormalities, Tuning fork tests and audiometry	Photochemistry of vision &Physiological basis for photo transduction	12) Women's Rights				Approach to a patient with Hairing Loss									
		Dr. Tayaba (Even)	Dr. Kanwal (Odd)	Dr. Aneela (Even)	Prof. Dr. Samia /Dr. Afsheen (Odd)	Muftii Naeem Sherazi				Dr. Sidra Hamid (Even) Dr. Sadia Azam (Odd)									
Date/Day		8:00am-9:20am		9:20am – 10:10am		10:10am – 10:30am	10:30am-11:20am		11:20am-12:10pm		12:10pm-12:30pm	12:30pm – 2:00pm		Home Assignments (2hrs)					
10-10-2026 Saturday		Practical & CBL/SGD Topic mentioned at the end		PHYSIOLOGY LGIS		Break	ANATOMY (LGIS)		PBL 2 (SESSION I)		Break	SGD/DISSECTION		SDL Anatomy Mandibular fracture					
				Light & dark adaptation, Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information			Vestibular system	Development of Eye-II		Histology of Eye-II		PBL Team				Vessels and Nerves of Orbit			
	Dr. Uzma/Dr. Afsheen (Even)			Dr. Sidra (Odd)	Prof. Dr. Ifra Saeed (Even)		Assist. Prof. Dr. Maria(Odd)												
12-10-2026 Monday	Practical & CBL/SGD Topic mentioned at the end		PHYSIOLOGY LGIS		ANATOMY (LGIS)		ENT		SDL Physiology Photochemistry of vision &Physiological basis for photo transduction										
			Vestibular system	Light & dark adaptation, Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information	Histology of Ear		Development of Pharyngeal Apparatus					Deafness							
			. Dr. Sidra (Even)	Dr. Uzma/Dr. Afsheen (Odd)	Assist. Prof. Dr. Maria (Odd)		Prof. Dr. Ifra Saeed (Even)												
13-10-2026 Tuesday	Practical & CBL/SGD Topic mentioned at the end		ANATOMY (LGIS)		ENT		PAK STUDIES		SDL Physiology Vestibular system										
			Development of Pharyngeal Apparatus		Histology of Ear		Vertigo					13) The Aligarh Movement-I							
			Prof. Dr. Ifra Saeed (Odd)		Assist. Prof. Dr. Maria (Even)							Miss. Kinza Fiaz							
14-10-2026 Wednesday	Practical & CBL/SGD Topic mentioned at the end		PHYSIOLOGY LGIS		ANATOMY LGIS		CLINICO-CONCEPT CONNECT (C36) SESSION – II		SDL Biochemistry Vibrio Cholera Online Mid Clinico Concept Connect (C36) Session Evaluation										
			Lesions of visual pathway and its effects on field of vision, Movements of eye ball along with neural control		Sense of Taste and pathophysiology		Development of Ear				Development of Nose		Vertigo & Hearing Loss (with abnormal bedside hearing tests)						
													Anatomy						
													Physiology						
													Biochemistry						
													Pathology						
			Dr. Uzma/ Dr. Afsheen (Even)		Dr. Kamil (Odd)		Assist. Prof. Dr. Maria (Even)				Prof. Dr. Ifra Saeed (Odd)		ENT						

Table No. 1 (Time: 08:00am – 09:20am)																				
Batch Distribution for Practical Skills (all subjects) CBL / Small Group Discussion(Biochemistry and Physiology)			Topics for Skill Lab with Venue • Retina (Anatomy Histology Practical) Venue-Histology laboratory-Dr. Sadia, Dr. Sana • (Biochemistry Practical) Biochemical Analysis of CSF Venue- Biochemistry laboratory • Examination of 8th Cranial Nerve (Vestibular function) (Physiology Practical) Venue – Physiology Lab		Schedule for Practical															
					Day	Histology Practical		Biochemistry Practical		Physiology Practical			Physiology SGD		Biochemistry SGD					
						Batch	Teacher Name	Batch	Teacher Name		Batch		Teacher Name		Batch	Teacher Name	Batch	Teacher Name		
Sr. No	Batch	Roll No.			Monday	C	Supervised by HOD	B	Dr. Rahat	Supervised by HOD	E	Dr. Fareed	Supervised by HOD	A	Dr. Aneela	D	Dr. Uzma			
1.	A	01-70			Tuesday	D			C		Dr. Almas			A	Dr. Aneela		B	Dr. Shazia	E	Dr. Romessa
2.	B	71-140			Wednesday	E			D		Dr. Uzma			B	Dr. Shazia		C	Dr. Fahd	A	Dr. Sana Latif
3.	C	141-210			Thursday	B			A		Dr. Sana Latif			D	Dr. Jawad		E	Dr. Fareed	C	Dr. Almas
4.	D	211-280			Saturday	A			E		Dr. Romessa			C	Dr. Fahd Anwar		D	Dr. Jawad	B	Dr. Rahat
5.	E	281-onwards																		
			Topics for SGDs / CBL with Venue																	
			• Physiology SGD: Physiology of hearing & Balance (Venue: Lecture Hall No 5) • Biochemistry SGD: G-Proteins • Anatomy CBL: Oculomotor Nerve Palsy																	

Table No. 2 Batch Distribution with Venues and Teachers Name for Problem Based Learning (PBL) Sessions									
Sr No.	Batches	Roll No	Venue	Teachers	Sr No.	Batches	Roll No	Venue	Teachers
1.	A1	(01-35)	Lecture Hall no.05 Physiology	Dr. Romessa (Demonstrator Biochemistry)	6.	C2	(176-210)	New Lecture Hall Complex Lecture Theater # 01	Dr. Nazia (Demonstrator Physiology)
2.	A2	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Farah Ali Shah (Demonstrator Physiology)	7.	D1	(210-245)	New Lecture Hall Complex Lecture Theater # 04	Dr. Mahnoor (PGT Physiology)
3.	B1	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Almas Aijaz (APWMO Biochemistry)	8.	D2	(246-280)	New Lecture Hall Complex Lecture Theater # 04	Dr. Sadia Baqir (Senior Demonstrator Anatomy)
4.	B2	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Tariq Furqan (Senior Demonstrator Anatomy)	9.	E1	(281-315)	Anatomy Museum (First Floor Anatomy)	Dr. Rahat (APWMO Biochemistry)
5.	C1	(141-175)	New Lecture Hall Complex Lecture Theater # 01	Dr. Ali Zain (PGT Physiology)	10	E2	(315 onwards)	Lecture Hall no.04 (Basement)	Dr. Afsheen (PGT Physiology)

Table No. 3 Venues for Large Group Interactive Session (LGIS)	
Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

Table No. 4 Batch Distribution and Venues for Anatomy Small Group Discussion SGDs / Dissections					Table No. 5 Batch Distribution and Venues for Physiology & Biochemistry Small Group Discussion SGDs								
Batches	Roll No	Subgroup	Anatomy Teacher	Venue	Batches	Roll No	Subgroup	Physiology Teacher	Physiology Venue	Biochemistry Teacher	Biochemistry Venue		
A	01- 60	A1: Roll No (1 – 15) A2: Roll No (16 – 30) A3: Roll No (31 – 45) A4: Roll No (46 – 60)	Dr. Tariq Furqan (Senior Demonstrator Anatomy)	Anatomy Lecture Hall 04	A	01-70	A1: Roll No (1 – 14) A2: Roll No (15 – 28) A3: Roll No (29 – 42) A4: Roll No (43 – 56) A5: Roll No (57 – 70)	Dr. Aneela Yasmeen (APWMO)	Physiology Lecture Hall 5	Dr. Uzma Zafar (APWMO)	Basement Lecture Hall No. 2		
B	61-120	B1: Roll No (61 – 75) B2: Roll No (76 – 90) B3: Roll No (91 – 105) B4: Roll No (06 – 120)	Dr. Minahil (Senior. Demonstrator)	New Lecture Hall Complex 02	B	71-140	B1: Roll No (71 – 84) B2: Roll No (85 – 98) B3: Roll No (99 – 112) B4: Roll No (113 – 126) B5: Roll No (127 – 140)	Dr. Shazia Nosheen (APWMO)	Physiology Lecture Hall 5	Dr. Rahat (APWMO)	Basement Lecture Hall No. 2		
C	121-180	C1: Roll No (121 – 135) C2: Roll No (136 – 150) C3: Roll No (151 – 165) C4: Roll No (166 – 180)	Dr. Sara Bano (Assistant Professor)	New Lecture Hall Complex 01	C	141-210	C1: Roll No (141 – 154) C2: Roll No (155 – 168) C3: Roll No (169 – 182) C4: Roll No (183 – 196) C5: Roll No (197 – 210)	Dr. Fahd Anwar (Demonstrator)	Physiology Lecture Hall 5	Dr. Almas (APWMO)	Basement Lecture Hall No. 2		
D	181- 240	D1: Roll No (181 – 195) D2: Roll No (196 - 210) D3: Roll No (211 – 225) D4: Roll No (226 – 240)	Dr. Sana (PGT Anatomy)	Anatomy Lecture Hall 03	D	211-280	D1: Roll No (211 – 224) D2: Roll No (225 – 238) D3: Roll No (239 – 252) D4: Roll No (253 – 266) D5: Roll No (267 – 280)	Dr. Jawad (Demonstrator)	Physiology Lecture Hall 5	Dr. Sana Latif (Senior Demonstrator)	Basement Lecture Hall No. 2		
E	241- 300	E1: Roll No (241 – 255) E2: Roll No (256 – 270) E3: Roll No (271 – 285) E4: Roll No (286 – 300)	Dr. Sadia Baqir (Senior. Demonstrator)	New Lecture Hall Complex 03	E	281- onwards	E1: Roll No (281 – 294) E2: Roll No (295 – 308) E3: Roll No (309 – 322) E4: Roll No (323 – 336) E5: Roll No (337 – onwards)	Dr. Fareed (Demonstrator)	Physiology Lecture Hall 5	Dr. Romessa (Demonstrator)	Basement Lecture Hall No. 2		
F	301- onwards	F1: Roll No (301 – 315) F2: Roll No 316 – 330) F3: Roll No 331 – 345) F4: Roll No (346 – onwards)	Dr. Sadia Amaan (Assistant Professor)	New Lecture Hall Complex 4									
Supervised by Prof. Dr. Ayesha Yousaf					Supervised by Prof. Dr. Samia Sarwar							Supervised by. Dr. Aneela Jamil	

Second Year MBBS Time Table for Special Senses Module (Third Week) (15-10-2026 To 21-10-2026)

Date/Day	Theme	8:00am-9:20am	9:20am – 10:10am	10:10am – 10:30am	10:30am-11:20am	11:20am-12:10pm	12:10pm-12:30pm	12:30pm – 2:00pm	Home Assignments (2hrs)			
15-10-2026 Thursday	A Patient with Accommodation Failure/Strabismus; Trauma Links	Practical & CBL/SGD Topic mentioned at the end	PHYSIOLOGY LGIS		Break	PAK STUDIES		RADIOLOGY		Break	SGD/DISSECTION	SDL Biochemistry
			Sense of Taste and pathophysiology	Lesions of visual pathway and its effects on field of vision, Movements of eye ball along with neural control		12) The services/contributions of Hazrat Shah Waliullah-II		General radiologic concepts			Infratemporal fossa-I	
			Dr. Kamil (Even)	Dr. Uzma/ Dr. Afsheen (Even) (Odd)		Miss. Kinza Fiaz		Dr. Madiha (Even)	Dr. Zeenat (Odd)			
Date/Day		8:00am-9:00am	9:00am-10:00am		10:00am-11:00am		11:00am-12:00pm		Home Assignments (2hrs)			
16-10-2026 Friday		SGD/DISSECTION	PHYSIOLOGY LGIS		ISLAMIAT		ENT		SDL Anatomy Temporomandibular joint dislocation			
		Inner ear	Physiology of accommodation and clinical abnormalities	Sense of Smell and pathophysiology	13) The importance of the crescent moon (in the light of Hadith).		Facial fractures					
			Prof.Dr. Samia Sarwar/ Dr Afsheen (Even)	Dr. Kamil (Odd)	Mufti Naem Sherazi		Dr. Shafaq (Even)	Dr. Maimoona (Odd)				
Date/Day		8:00am-9:20am	9:20am – 10:10am		10:10am – 10:30am	10:30am-11:20am		11:20am-12:10pm		12:10pm-12:30pm	12:30pm – 2:00pm	Home Assignments (2hrs)
17-10-2026 Saturday		Practical & CBL/SGD Topic mentioned at the end	Early Clinical Exposure (ECE)									SDL Anatomy Orbital fractures (blow-out fracture)
19-10-2026 Monday		Practical & CBL/SGD Topic mentioned at the end	EYE		Break	ANATOMY LGIS		PBL 2 (SESSION II)		Break	SGD/DISSECTION	SDL Physiology Sense of Smell and pathophysiology
			Ocular trauma & Ocular Procedures			Development of Nose	Development of Ear	PBL Team			Infratemporal fossa-II	
			Dr. Raffaq (Even)	Dr. Saira (Odd)		Prof. Dr. Ifra Saeed (Even)	Assist. Prof. Dr. Maria (odd)					
20-10-2026 Tuesday		Practical & CBL/SGD Topic mentioned at the end	PHYSIOLOGY LGIS			PAKSTUDIES		EYE		Break	SGD/DISSECTION	SDL Physiology Sense of Taste and pathophysiology
			Sense of Smell and pathophysiology	Physiology of accommodation and clinical abnormalities		14) The Aligarh Movement-II		Reflective Error & Strabismus			Pterygopalatine fossa	
			Dr Kamil (Even)	Prof.Dr. Samia Sarwar/ Dr Afsheen (Odd)		Miss. Kinza Fiaz		Dr. Sidra Jabeen (Even)	Dr. Ambreen (Odd)			
21-10-2026 Wednesday		Practical & CBL/SGD Topic mentioned at the end	PHYSIOLOGY SDL No. 01			PAKSTUDIES		CLINICO CONCEPT CONNECT (C36) SESSION – III		Break	SGD/DISSECTION	SDL Biochemistry 2 nd Messenger System Online End Clinico Concept Connect (C36) Session Evaluation
			Function of Inner Ear, Physiology of Hearing			15) The 14 Points of Quaid-e-Azam-I		A Patient with Accommodation Failure/Strabismus; Trauma Links			External and middle ear	
			Dr. Mahnoor (Even)	Dr Ali Zain (Odd)		Miss. Kinza Fiaz	Anatomy					
							Physiology					
							Biochemistry					
							Pathology					
							Pharmacology					
							Ophthalmology					
							Radiology					

Table No. 1 (Time: 08:00am – 09:20am)																
Batch Distribution for Practical Skills (all subjects) CBL / Small Group Discussion(Biochemistry and Physiology)			Topics for Skill Lab with Venue - External & Internal Ear (Anatomy Histology Practical) Venue- Histology laboratory-Dr. Tariq, Dr. Sana (Biochemistry Practical) Biochemical Analysis of Aqueous Humor Venue- Biochemistry laboratory - Performance of Hearing Test (cochlear function) (Physiology Practical) Venue – Physiology Lab	Day	Histology Practical		Biochemistry Practical		Physiology Practical			Physiology SGD		Biochemistry SGD		
					Batch	Teacher Name	Batch	Teacher Name		Batch		Teacher Name		Batch	Teacher Name	Batch	Teacher Name
Sr. No	Batch	Roll No.		Monday	C	Supervised by HOD	B	Dr. Rahat	Supervised by HOD	E	Dr. Fareed	Supervised by HOD	A	Dr. Aneela	D	Dr. Uzma
1.	A	01-70		Tuesday	D		C	Dr. Almas		A	Dr. Aneela		B	Dr. Shazia	E	Dr. Romessa
2.	B	71-140		Wednesday	E		D	Dr. Uzma		B	Dr. Shazia		C	Dr. Fahd	A	Dr. Sana Latif
3.	C	141-210		Thursday	B		A	Dr. Sana Latif		D	Dr. Jawad		E	Dr. Fareed	C	Dr. Almas
4.	D	211-280		Saturday	A		E	Dr. Romessa		C	Dr. Fahd Anwar		D	Dr. Jawad	B	Dr. Rahat
5.	E	281-onwards														
			Topics for SGDs / CBL with Venue													
			- Physiology SGD: Physiology of Taste & Smell (Venue: Lecture Hall No 5) - Biochemistry CBL: Night Blindness													

Table No. 4 Batch Distribution and Venues for Anatomy Small Group Discussion SGDs / Dissections					Table No. 5 Batch Distribution and Venues for Physiology & Biochemistry Small Group Discussion SGDs								
Batches	Roll No	Subgroup	Anatomy Teacher	Venue	Batches	Roll No	Subgroup	Physiology Teacher	Physiology Venue	Biochemistry Teacher	Biochemistry Venue		
A	01- 60	A1: Roll No (1 – 15) A2: Roll No (16 – 30) A3: Roll No (31 – 45) A4: Roll No (46 – 60)	Dr. Tariq Furqan (Senior Demonstrator Anatomy)	Anatomy Lecture Hall 04	A	01-70	A1: Roll No (1 – 14) A2: Roll No (15 – 28) A3: Roll No (29 – 42) A4: Roll No (43 – 56) A5: Roll No (57 – 70)	Dr. Aneela Yasmeen (APWMO)	Physiology Lecture Hall 5	Dr. Uzma Zafar (APWMO)	Basement Lecture Hall No. 2		
B	61-120	B1: Roll No (61 – 75) B2: Roll No (76 – 90) B3: Roll No (91 – 105) B4: Roll No (06 – 120)	Dr. Minahil (Senior. Demonstrator)	New Lecture Hall Complex 02	B	71-140	B1: Roll No (71 – 84) B2: Roll No (85 – 98) B3: Roll No (99 – 112) B4: Roll No (113 – 126) B5: Roll No (127 – 140)	Dr. Shazia Nosheen (APWMO)	Physiology Lecture Hall 5	Dr. Rahat (APWMO)	Basement Lecture Hall No. 2		
C	121-180	C1: Roll No (121 – 135) C2: Roll No (136 – 150) C3: Roll No (151 – 165) C4: Roll No (166 – 180)	Dr. Sara Bano (Assistant Professor)	New Lecture Hall Complex 01	C	141-210	C1: Roll No (141 – 154) C2: Roll No (155 – 168) C3: Roll No (169 – 182) C4: Roll No (183 – 196) C5: Roll No (197 – 210)	Dr. Fahd Anwar (Demonstrator)	Physiology Lecture Hall 5	Dr. Almas (APWMO)	Basement Lecture Hall No. 2		
D	181- 240	D1: Roll No (181 – 195) D2: Roll No (196 - 210) D3: Roll No (211 – 225) D4: Roll No (226 – 240)	Dr. Sana (PGT Anatomy)	Anatomy Lecture Hall 03	D	211-280	D1: Roll No (211 – 224) D2: Roll No (225 – 238) D3: Roll No (239 – 252) D4: Roll No (253 – 266) D5: Roll No (267 – 280)	Dr. Jawad (Demonstrator)	Physiology Lecture Hall 5	Dr. Sana Latif (Senior Demonstrator)	Basement Lecture Hall No. 2		
E	241- 300	E1: Roll No (241 – 255) E2: Roll No (256 – 270) E3: Roll No (271 – 285) E4: Roll No (286 – 300)	Dr. Sadia Baqir (Senior. Demonstrator)	New Lecture Hall Complex 03	E	281- onwards	E1: Roll No (281 – 294) E2: Roll No (295 – 308) E3: Roll No (309 – 322) E4: Roll No (323 – 336) E5: Roll No (337 – onwards)	Dr. Fareed (Demonstrator)	Physiology Lecture Hall 5	Dr. Romessa (Demonstrator)	Basement Lecture Hall No. 2		
F	301- onwards	F1: Roll No (301 – 315) F2: Roll No 316 – 330) F3: Roll No 331 – 345) F4: Roll No (346 – onwards)	Dr. Sadia Amaan (Assistant Professor)	New Lecture Hall Complex 4									
Supervised by Prof. Dr. Ayesha Yousaf					Supervised by Prof. Dr. Samia Sarwar							Supervised by. Dr. Aneela Jamil	

Tentative Schedule for LMS Based Weekly Online Assessments for Second Year MBBS (Special Senses Module-I) Batch 52

The online assessment for Special Senses Module-I for Second Year MBBS will be as per following schedule:

Class	Module	Day & Date	Time of Assessment	Focal person	Department Responsible
Second Year MBBS	Special Senses Module	Monday 12 th October, 2026	9:00 pm-9:40pm	Prof. Dr Ayesha Yousaf	Anatomy
		Tuesday 13 th October, 2026	9:00 pm-9:40pm	Prof. Dr Samia Sarwar	Physiology
		Wednesday 14 th October, 2026	9:00 pm-9:40pm	Dr Aneela Jamil	Biochemistry

Note: All dates are subject to change.

Second Year MBBS Time Table for Special Senses Module (Fifth Week)
(22-10-2026 To 28-10-2026)

Date / Days	08:00am – 02:00pm
22-10-2026 Thursday	Assessment Week
23-10-2026 Friday	
24-10-2026 Saturday	
26-10-2026 Monday	
27-10-2026 Tuesday	
28-10-2026 Wednesday	

Note: Timetable Subject to Change According to The Current Circumstances.

Annexure-I

Templates for Theory Paper

• MCQ, SEQ Paper, & EMQ

Templates for AV OSPE

Templates for Structured Viva

Note: These sample papers aim to facilitate comprehension. However, it's important to note that the content and format of actual assessment papers may differ.

RMU-12
Integrated Modular Curriculum 2026
Isolation to Beyond Boundaries

Approved Template of Module Assessment

Multiple choice questions (MCQs)		% Weightage	Number of MCQs	Level of Cognition
Section A	Complimentary Integration (Theme Based) of Anatomy / Physiology / Biochemistry	(70%)	18MCQs	C1-C4
Section B	Integrations	(30%)		
	• Multidisciplinary Integration	(10%)	2 MCQs	C4
	• Interdisciplinary Integration	(5%)	1 MCQs	C4, C5
	• Transdisciplinary Integration	(5%)	2 MCQs	C5, C6
	• C ³ 6 Sessions Transdisciplinary Integration	(10%)	2 MCQs	C6

Chairperson

Department of _____
Rawalpindi Medical University, Rawalpindi

Additional Director Assessment

Rawalpindi Medical University
Rawalpindi

Director DME

Rawalpindi Medical University
Rawalpindi

Prof. Dr. Muhammad Umar

Vice Chancellor
Rawalpindi Medical University
Rawalpindi

Rawalpindi Medical University Rawalpindi
Department of Anatomy, Physiology & Biochemistry
MCQs & EMQ Paper for _____ Module, Second Year MBBS Batch 52
Date: 00-00-0000

Total Marks: 30 (MCQs: 25, EMQ: 5)

Total Time: 30 Minutes

Each MCQ carries 1 mark and EMQ carries 5 marks

Roll No. _____

Name. _____

Encircle the single best response

Q.#	RMU-12 Integrated Modular Curriculum 2026 Isolation to Beyond Boundaries Integrated Modular Assessment of the Subject Anatomy, Physiology & Biochemistry Section A: Complimentary Integration of Anatomy / Physiology / Biochemistry (70%)	Level of Cognition
1.	Question a. b. c. d. e. USMLE: Type Question Reference: Ganong 25 th Edition Page No. 101	C1
Section – B: Integrations (30%)		
Multidisciplinary Integration (5%)		
2.	Horizontal Integration with Anatomy (2.5%) Questions a. b. c. d. e. USMLE: Type Question Reference: Ganong 25 th Edition Page No. 101	C4
Interdisciplinary/Transdisciplinary Integration (15%)		

3.	Question a. b. c. d. e. USMLE: Type Question Reference: Ganong 25 th Edition Page No. 101	C5
C³6 Sessions Integration (10%)		
4.	Question a. b. c. d. e. USMLE: Type Question Reference: Ganong 25 th Edition Page No. 101	C6
5.	Question a. b. c. d. e. USMLE: Type Question Reference: Ganong 25 th Edition Page No. 101	C6

RMU-12
Integrated Modular Curriculum 2026
Isolation to Beyond Boundaries
Approved Template of Module Assessment

Short Answer Questions (SAQs) Total Marks: 25 (Each SAQ carries 5 marks)	% Weightage	Number of SAQs	Level of Cognition
Complimentary Integration (Theme Based) of Anatomy / Physiology / Biochemistry	(60%)	3SAQ	C1-C4
Integrations	(40%)		
Multidisciplinary Integration	(20%)	1SAQ	C4
Interdisciplinary Integration / Transdisciplinary Integration / C ³ 6 Sessions Transdisciplinary Integration	(20%)	1SAQ	C4, C5

Short Essay Question (SEQs) Total Marks: 45 (Each SEQ carries 9 marks)	% Weightage	Number of SEQs	Level of Cognition
Complimentary Integration (Theme Based) of Anatomy / Physiology / Biochemistry	(60%)	3SEQ	C1-C4
Integrations	(40%)		
Multidisciplinary Integration	(20%)	1SEQ	C4
Interdisciplinary Integration / Transdisciplinary Integration / C ³ 6 Sessions Transdisciplinary Integration	(20%)	1SEQ	C4, C5

Chairperson

Department of _____
Rawalpindi Medical University, Rawalpindi

Additional Director Assessment

Rawalpindi Medical University
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Rawalpindi

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

Rawalpindi Medical University Rawalpindi
Department of Anatomy, Physiology & Biochemistry
SEQ & SAQ Paper for _____ Module, _____ Year MBBS Batch _____
Date: 00-00-0000

Total Marks: 70
Each SAQ carries 5 marks
Each SEQ carries 9 marks

Time allowed: 1 hour & 30 minutes
Each SAQ: 5 minutes, SEQ: 10 minutes
Attempt all Questions

RMU-12 Integrated Modular Curriculum 2026 Isolation to Beyond Boundaries Integrated Modular Assessment of the Subject Anatomy, Physiology & Biochemistry					
Integration			Percentage		
• Complimentary Integration (Theme Based) of Anatomy/Physiology Biochemistry (CI)			(70%)		
• Integration			(30%)		
○ Multidisciplinary Integration (MI)			(05%)		
○ Interdisciplinary (II)/Transdisciplinary Integration (TI)			(15%)		
○ C ³ 6 Assessment			(10%)		
Q.#	Construct your Answers according to the given Scenarios and Questions	Domain	Marks	% Weightage	Level of Cognition
Short Answer Questions (SAQs) Total Marks: 25 (Each SAQ carries marks)					
SA Q 1	A 55 years Male, known case of Coronary Artery Disease, presented to.....	CI & TI	.....	.....	.....
	a.	CI	2	8%	C2
	b.	CI	2	12%	C2

	c.	CI	2	8%	C2
	d.	CI	2	12%	C2
	e. USMLE Question. References: Part a: Guyton & Hall 14 th Edition page # 114 Part b: Guyton & Hall 14 th Edition Page # 116	CI	1	8%	C2
Short Essay Question (SEQs) Total Marks: 45					
SEQ 1	A 55 years Male, known case of Coronary Artery Disease, presented to.....	CI & TI	.....	.....	..... ...
	a.	MI with Anatomy	2	6.66%	C4
	b.	CI	3	6.66%	C2
	c.	CI	2	6.66%	C2
	d.	CI	1	6.66%	C2
	e. USMLE Style Question. References: • Part a: Guyton & Hall 14 th Edition page # 101 • Part b: Guyton & Hall 14 th Edition Page # 103 • Part c: Guyton & Hall 14 th Edition Page # 103	CI	1	6.66%	C2

Rawalpindi Medical University Rawalpindi
Department of Anatomy / Physiology / Biochemistry
Clinically Oriented Audio-Visual Objective Structured Practical Examination (OSPE)
_____ **Module 2026**
_____ **Year MBBS (Batch _____)**

Day: _____

Date: _____

10 AV OSPE Slides

Time Allowed: 50 minutes

05 minutes for each slide

Chairperson

Department of _____
Rawalpindi Medical University, Rawalpindi

Additional Director Assessment

Rawalpindi Medical University
Rawalpindi

Director DME

Rawalpindi Medical University
Rawalpindi

Vice Chancellor

Rawalpindi Medical University
Rawalpindi

Slide 1

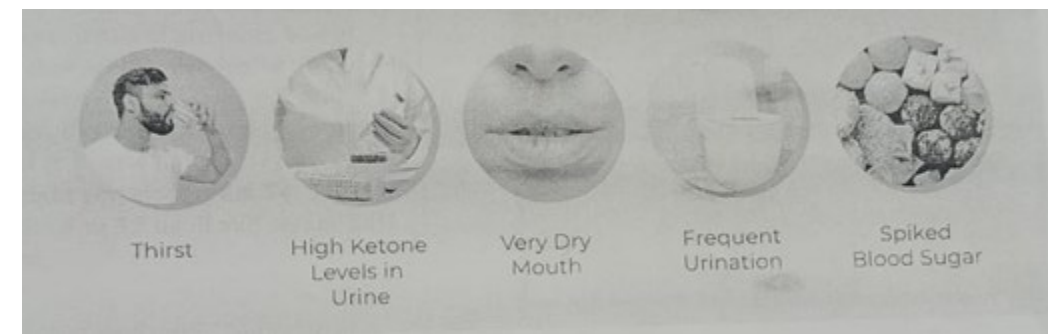
Core Knowledge with Horizontal / Vertical / Spiral Integration

Topic:

Teaching Strategy:

Requirements: Answer sheet, Pen

Objective: _____



- | | |
|---------|------|
| 1. | (01) |
| 2. | (01) |
| 3. | (01) |
| 4. | (01) |
| 5. | (01) |

Slide 1

Key for Examiner

- | |
|---------|
| 1. |
| 2. |
| 3. |
| 4. |
| 5. |

Date: _____ Time: 8:00-2:00pm _____ Roll no: 181 onwards _____

[illegible]

Examiner _____
Sign _____
Stamp _____

214 | Page

Department of Physiology
Special Senses Module-I (Structured Viva)

MODULE: _____ **DATE:** _____ **TEACHER NAME:** _____ **SIGNATURE** _____

[illegible]

***Objective Structured Practical Examination (OSPE) will be held in end of block assessment.**

Department of Biochemistry
Special Senses Module-I (Structured Viva)

Date:

Time:

Teacher's Name

Roll No.	Classification / Definition/ Enumerate (C1) (05 Marks)	Metabolic role/ Mechanism of action/ Physiological mechanism (C2) (08 Marks)	Related clinical disorders/ Pathogenesis (C3) (07 Marks)	Additional domains of Knowledge to be assessed Family Medicine, Artificial Intelligence, Ethics and Research (C1, C2, C3) (03 Marks)	Professionalism & Behavior (A3) (02 Marks)	Total marks (25)

***Objective Structured Practical Examination (OSPE) will be held in end of block assessment.**

Rawalpindi Medical University
2nd Year MBBS Model MCQS (USMLE Format)

1. A 16-year-old boy is brought to the clinic by his parents due to a recent decline in his academic performance and difficulty hearing during conversations, especially in noisy environments. His parents mention that he frequently listens to loud rock music through his headphones for several hours each day. On physical examination, his tympanic membranes are normal bilaterally. Audiometry reveals a bilateral high-frequency hearing loss. Which of the following is the most likely diagnosis? Left medial lemniscus A. Nerve deafness B. Presbycusis C. Conductive deafness D. Sensorineural deafness E. Otosclerosis	Anatomy
2. A 32-year-old man visits the clinic because he's noticed that, after walking into strong-smelling environments (like a bakery or a perfume store), the scent seems intense at first but fades quickly, even though the smell is still present. He wonders if this is due to damage to his smell receptors. Which of the following best explains the underlying physiology of olfaction? A. Olfactory receptor neurons are unable to undergo adaptation to continuous stimuli. B. Olfactory receptor neurons do not regenerate over time. C. Odorants hyperpolarize olfactory receptor neurons to encode smell. D. Olfactory receptor neurons communicate via electrotonic (electrical) junctions. E. Olfactory receptor neurons form gap junctions with each other to modulate sensitivity.	Physiology
3. A 70-year-old man comes to your office complaining that he has had increasing difficulty understanding conversations over the past few years. He often asks people to repeat themselves, especially in noisy environments like family gatherings or restaurants. He notices that his TV hearing is better when the volume is turned up. On examination, tuning-fork tests show air conduction > bone conduction bilaterally (positive Rinne) and Weber lateralizes to neither ear. Which of the following is the most likely diagnosis? A. Nerve deafness B. Presbycusis C. Conductive deafness D. Sensorineural deafness E. Otosclerosis	Biochemistry

Rawalpindi Medical University
2nd Year MBBS Model EMQ

Theme: Cataract

Instructions:

For each clinical or physiological scenario, select the most appropriate answer from the list of options below. Each option may be used once, more than once, or not at all.

Options:

- A. Lens capsule
- B. Alpha-crystallin
- C. Aqueous humor
- D. Glucose-6-phosphate dehydrogenase deficiency
- E. Posterior chamber
- F. Sorbitol accumulation
- G. Zonular fibers (suspensory ligament of lens)
- H. Accommodation reflex
- I. Lens epithelium
- J. Oxidative stress

Scenarios:

1. A 60-year-old man develops age-related cataracts. Histological examination of the lens shows misfolded structural proteins and opacification. A key protein that prevents aggregation of other lens proteins is dysfunctional.
2. A young man with uncontrolled diabetes develops early cataract. Biochemical testing shows high levels of aldose reductase activity in the lens and accumulation of a sugar alcohol that increases osmotic stress.
3. A 2-year-old boy presents with bilateral congenital cataracts. There is a family history of metabolic disorders. Lab tests reveal deficient enzyme activity in the pentose phosphate pathway, leading to reduced NADPH and increased oxidative damage.
4. During accommodation for near vision, ciliary muscles contract and the lens becomes more convex. This action is mediated through tension changes in which structure?
5. In cataract surgery, the surgeon first makes an incision into a thin, elastic, transparent structure that envelops the lens. This structure maintains the lens shape and plays a role in focusing.

Answers:

- B. Alpha-crystallin
- F. Sorbitol accumulation
- D. Glucose-6-phosphate dehydrogenase deficiency
- G. Zonular fibers
- A. Lens capsule

Rawalpindi Medical University
2nd Year MBBS Model SEQs & SAQs (USMLE Format)

1. A 45-year-old man presents with deep facial pain that worsens when chewing, radiating toward his ear and temple. MRI reveals a mass located deep to the zygomatic arch, wedged between the mandible's ramus and the lateral pterygoid plate. Neurological examination shows diminished sensation in the lower face and altered taste on the anterior two-thirds of the tongue. Given the suspected lesion in the infratemporal fossa, which of the following boundaries and contents correspond anatomically to this region? Which of the following best describes the primary pathophysiologic mechanism underlying this patient's condition? - Superior (roof) boundary: Is it the greater wing of the sphenoid bone and infratemporal surface of the temporal bone (containing foramen ovale and spinosum)? - Medial boundary: Is it the lateral pterygoid plate (and associated pharyngeal musculature)? - Anterior boundary: Is it formed by the posterior surface of the maxilla? - Lateral boundary: Is it defined by the ramus of the mandible? - Contents: Should include muscles of mastication (lateral/medial pterygoids, temporalis), branches of CN V₃ (e.g., lingual nerve, inferior alveolar nerve), chorda tympani, the maxillary artery and middle meningeal artery, and the pterygoid venous plexus.	Anatomy
2. A 24-year-old chef reports a sudden loss of smell (anosmia) after recovering from a mild viral upper respiratory tract infection. He finds it difficult to appreciate the aroma of food and cannot detect the smell of gas in the kitchen. His taste sensation is also slightly affected. Neurological examination is otherwise normal. - Describe the structure and location of olfactory receptors in the human nasal cavity. - Explain the process by which odorant molecules activate olfactory receptors, including the role of second messengers. - Outline the pathway of olfactory signal transmission from the receptor to the brain. - Discuss why olfactory receptor neurons have high turnover and the physiological importance of this property. - Briefly explain how olfactory input can influence taste perception.	Physiology
3. A 52-year-old woman presents with episodic headaches, palpitations, and diaphoresis. Laboratory tests reveal elevated plasma-free metanephrines. Imaging confirms a pheochromocytoma in the adrenal medulla. Based on these findings and her adrenal pathology, consider the following statements regarding catecholamine physiology: - Rate-limiting step in catecholamine synthesis: catalysis of tyrosine to L-DOPA by tyrosine hydroxylase (TH). - Conversion sequence: L-DOPA → dopamine via aromatic L-amino acid decarboxylase, dopamine → norepinephrine via dopamine β-hydroxylase, norepinephrine → epinephrine via phenylethanolamine-N-methyltransferase (PNMT). - Enzyme induced by cortisol: PNMT in adrenal medulla enhances epinephrine synthesis. - Termination of catecholamine action: clearance primarily by reuptake into nerve terminals and inactivation by monoamine oxidase (MAO) and catechol-O-methyltransferase (COMT). - Final urinary metabolites: vanillylmandelic acid (VMA), metanephrine, normetanephrine, and homovanillic acid (HVA).	Biochemistry

Rawalpindi Medical University
2nd Year MBBS Model AV OSPE

Slide 1 / Video

Core Knowledge with Horizontal / Vertical / Spiral Integration

Topic: Coloboma Of Iris

Teaching Strategy: LGIS, SGD

Requirements: Answer sheet, Pen

Objective: To Assess the Knowledge of Students Regarding Development of Iris



1. Define coloboma of the iris? (01)
2. Coloboma of the iris results from the failure of closure of which embryological structure? (01)
3. In which quadrant of the iris is coloboma most commonly located? (01)
4. Name one syndrome associated with coloboma of the iris. (01)
5. Which cranial nerve is responsible for controlling the muscles that may be functionally affected in a large iris coloboma? (01)

Special Senses Module-I Entrustable Professional Activities (EPAs)

Theme: I

EPA 1: Focused History Taking for Suspected Raised Intraocular Pressure

1. Title of the EPA

Obtain a focused history from a patient presenting with acute blurred vision, eye pain, headache, halos, nausea, or vomiting, and identify red-flag features suggestive of raised intraocular pressure.

2. Specification and Limitations

This EPA includes no more and no less than the ability of the undergraduate medical student to:

1. Obtain a focused ophthalmic history from a patient presenting with acute blurred vision, painful red eye, headache, halos around lights, nausea, or vomiting.
2. Ask relevant questions regarding onset, duration, severity, progression, laterality, associated symptoms, previous similar episodes, use of spectacles, trauma, medication history, and past ocular history.
3. Identify red-flag features suggestive of raised intraocular pressure, including severe eye pain, sudden reduction of vision, colored halos around lights, headache, nausea, vomiting, red eye, and fixed or poorly reacting pupil.
4. Recognize the possibility of an ophthalmic emergency and inform the supervising clinician promptly.
5. Communicate respectfully with the patient and attendants while maintaining patient comfort, privacy, and confidentiality.

Context:

Outpatient department, emergency department, ophthalmology clinic, primary care setting, or simulated clinical setting.

Target transition point:

From pre-clinical/early clinical learning to supervised clinical clerkship in Ophthalmology.

Limitations:

This EPA does not include independent diagnosis, measurement of intraocular pressure, prescription of definitive treatment, or independent management of acute glaucoma. The student must work under supervision and refer immediately to a qualified clinician when red flags are present.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☐ Collaborator
- ☒ Professional
- ☒ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour

Knowledge

The student should demonstrate knowledge of:

- Basic anatomy and physiology of the eye relevant to aqueous humour drainage and intraocular pressure.
- Common symptoms of raised intraocular pressure and acute angle-closure glaucoma.
- Important red-flag symptoms: acute painful red eye, sudden blurred vision, halos around lights, headache, nausea, vomiting, and reduced vision.
- Risk factors such as older age, hypermetropia, previous similar episodes, family history of glaucoma, use of certain medications, and previous ocular disease.
- The emergency nature of acute raised intraocular pressure and the risk of permanent visual loss if treatment is delayed.
- The importance of urgent ophthalmological referral.

Skills

The student should be able to:

- Introduce themselves and confirm the patient's identity.
- Obtain consent before taking history.
- Ask focused, relevant, and sequential questions related to acute visual symptoms.
- Clarify onset, duration, severity, progression, aggravating/relieving factors, and associated systemic symptoms.
- Ask about past ocular history, trauma, drug history, family history, and systemic diseases.
- Identify red flags suggesting raised intraocular pressure.
- Summarize the history clearly and present key findings to the supervisor.
- Document relevant positive and negative findings appropriately.

Attitude and Behaviour

The student should demonstrate:

- Empathy towards a patient experiencing pain or sudden visual disturbance.
- Respect for patient privacy, dignity, and confidentiality.
- Awareness of personal limitations and willingness to seek senior help.
- Promptness in reporting emergency features.
- Clear and calm communication with the patient and attendants.
- Professional behaviour in urgent clinical situations.

Required Experience

Before entrustment, the student should have:

- Observed focused ophthalmic history taking in patients with red eye or visual symptoms at least twice.
- Practiced focused history taking in simulated or real supervised clinical settings at least three times.
- Participated in case-based discussion on acute painful red eye and raised intraocular pressure.
- Received feedback from a clinical supervisor on history taking and red-flag recognition.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- Direct observation of focused history taking in OPD, emergency, ward, or simulated setting.
- Mini-CEX or workplace-based assessment.
- OSCE station on acute painful red eye/blurred vision.
- Case-based discussion on acute glaucoma or raised intraocular pressure.
- Review of written history/documentation.
- Feedback from ophthalmology faculty, clinical demonstrator, or trained supervisor.
- Reflective note by the student on recognition of ophthalmic emergencies.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant teaching session/module in Second Year MBBS, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The Second Year MBBS student should be able to obtain a focused history from a patient or simulated patient presenting with acute blurred vision, eye pain, headache, halos, nausea, or vomiting, while being directly supervised by a faculty member, demonstrator, or clinical supervisor.

The student should be able to identify important red-flag features suggestive of raised intraocular pressure and immediately inform the supervisor. The student should not independently diagnose, manage, treat, prescribe medication, refer, or counsel without direct supervision.

Expected entrustment level for this EPA: **Level 2 — Direct supervision required.**

7. **Expiration Date** Entrustment remains valid for **one year**, provided the student continues clinical exposure and demonstrates satisfactory performance in relevant assessments. Reassessment is required if the student has prolonged absence from clinical training or shows unsatisfactory performance in history taking or emergency recognition.

EPA 2: Basic Structured Eye Examination in a Patient with Suspected Raised Intraocular Pressure

1. Title of the EPA

Perform a basic structured eye examination including visual acuity, inspection of redness, corneal clarity, pupillary reaction, ocular movements, and gross assessment of anterior chamber depth.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a **Second Year MBBS student** to:

1. Perform a basic, structured, non-invasive eye examination under direct supervision.
2. Assess visual acuity using a Snellen chart or near vision chart, where available.
3. Inspect the eye for redness, watering, photophobia, corneal haze/cloudiness, and visible ocular abnormality.
4. Observe pupillary size, shape, equality, and reaction to light.
5. Assess ocular movements in the six cardinal directions of gaze.
6. Perform a gross assessment of anterior chamber depth using torchlight/oblique illumination, where appropriate and under supervision.
7. Recognize abnormal findings that may suggest raised intraocular pressure or acute angle-closure glaucoma.
8. Report examination findings promptly to the supervising faculty member or clinician.

Context:

Skills laboratory, simulated patient setting, ophthalmology demonstration room, outpatient department, emergency department, or supervised clinical teaching session.

Target transition point:

Second Year MBBS student progressing from basic science knowledge of eye anatomy and physiology to supervised clinical observation and basic examination skills.

Limitations:

This EPA does not include independent diagnosis, measurement of intraocular pressure, use of slit-lamp biomicroscopy, gonioscopy, fundoscopy for diagnostic decision-making, prescription of treatment, or independent referral. The student must perform the examination under direct supervision and report abnormal findings immediately.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☐ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour

Knowledge

The student should demonstrate knowledge of:

- Basic anatomy of the eye, especially cornea, pupil, iris, anterior chamber, lens, and extraocular muscles.
- Normal and abnormal visual acuity.
- Common signs of acute red eye and raised intraocular pressure.
- Significance of corneal haze, mid-dilated/fixed pupil, conjunctival redness, reduced vision, and shallow anterior chamber.
- Basic principles of pupillary light reflex and ocular movement testing.
- Importance of avoiding pressure on a painful or acutely inflamed eye.
- Limitations of basic eye examination in Second Year MBBS.

Skills

The student should be able to:

- Wash hands and introduce themselves to the patient.
- Explain the examination and obtain consent.
- Position the patient comfortably.
- Assess visual acuity in each eye separately.
- Inspect both eyes systematically.
- Use a torch safely for external eye inspection and pupillary reaction.
- Observe corneal clarity and gross anterior chamber depth.
- Check ocular movements in a structured manner.
- Compare both eyes and identify obvious asymmetry.

- Present findings clearly to the supervisor.

Attitude and Behaviour

The student should demonstrate:

- Gentle handling of the patient with painful eye symptoms.
- Respect for patient privacy and dignity.
- Awareness of personal limitations.
- Willingness to seek help when abnormal findings are observed.
- Calm and professional conduct during examination.
- Appropriate infection control and patient safety measures.

Required Experience

Before entrustment, the student should have:

- Observed basic eye examination by a faculty member or clinical supervisor at least twice.
- Practiced visual acuity testing and torch examination in a skills lab or supervised clinical setting.
- Practiced pupillary reaction and ocular movement assessment on peers, simulated patients, or real patients under supervision.
- Participated in a demonstration or case discussion on acute painful red eye and raised intraocular pressure.
- Received feedback on examination technique from a supervisor.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- Direct observation of basic eye examination.
- OSCE station on structured eye examination.
- Checklist-based assessment in skills lab.
- Mini-CEX or supervised clinical encounter.
- Faculty feedback during ophthalmology teaching session.
- Case-based discussion on abnormal eye findings.
- Review of student's documentation or oral presentation of examination findings.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The Second Year MBBS student should be able to perform a basic structured eye examination while the supervisor is physically present and available to guide, correct, or intervene. The student should immediately report abnormal findings suggestive of raised intraocular pressure or acute ocular emergency.

The student should not independently diagnose, manage, prescribe treatment, measure intraocular pressure, or refer the patient without direct supervision.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student maintains satisfactory performance in supervised clinical skills sessions. Reassessment is required if the student has prolonged absence from clinical training or demonstrates unsafe examination technique.

EPA 3: Recognition of Acute Painful Red Eye as an Ophthalmic Emergency

1. Title of the EPA

Recognize acute painful red eye with reduced vision and halos as an emergency presentation requiring urgent ophthalmological referral and immediate management.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a **Second Year MBBS student** to:

1. Recognize the combination of acute eye pain, redness, reduced vision, halos around lights, headache, nausea, or vomiting as a possible ophthalmic emergency.
2. Identify red-flag features suggestive of raised intraocular pressure or acute angle-closure glaucoma.
3. Understand that sudden painful visual loss may result in permanent visual impairment if treatment is delayed.
4. Immediately inform the supervising faculty member, clinician, or ophthalmology team.
5. Assist in urgent patient prioritization under supervision.
6. Communicate the urgency of the situation to the patient and attendants in simple, calm language.
7. Avoid false reassurance or unnecessary delay.

Context:

Ophthalmology teaching clinic, emergency department, outpatient department, skills lab, simulated patient encounter, or case-based learning session.

Target transition point:

Second Year MBBS student progressing from basic recognition of symptoms and signs to supervised identification of emergency clinical presentations.

Limitations:

This EPA does not include independent diagnosis, independent emergency management, prescribing anti-glaucoma medication, measuring intraocular pressure, performing invasive procedures, or making an independent referral. The student's role is to recognize danger signs, seek immediate senior help, and assist under direct supervision.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☒ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour**Knowledge**

The student should demonstrate knowledge of:

- Common causes of acute painful red eye.
- Red-flag symptoms: severe eye pain, sudden blurred vision, halos around lights, headache, nausea, vomiting, photophobia, and reduced vision.
- Red-flag signs: red eye, corneal haze, fixed or mid-dilated pupil, shallow anterior chamber, and reduced visual acuity.
- Basic concept of raised intraocular pressure and its effect on vision.
- Acute angle-closure glaucoma as an ophthalmic emergency.
- Consequences of delayed treatment, including irreversible visual loss.
- Need for urgent ophthalmological referral and supervised immediate management.

Skills

The student should be able to:

- Recognize emergency features from history and basic examination.
- Distinguish a simple red eye from red eye with danger signs.
- Prioritize the patient for urgent review by a supervisor.
- Present the emergency features clearly and concisely to the supervising clinician.
- Communicate seriousness without creating panic.

- Document key red-flag features, where required.
- Assist the supervisor in arranging urgent ophthalmology review.

Attitude and Behaviour

The student should demonstrate:

- Vigilance in recognizing potentially sight-threatening conditions.
- Promptness in seeking senior help.
- Respectful and empathetic communication with the patient and attendants.
- Professional responsibility and awareness of limitations.
- Avoidance of delay, casual attitude, or false reassurance.
- Willingness to work as part of a healthcare team.

Required Experience

Before entrustment, the student should have:

- Attended teaching sessions on acute red eye and raised intraocular pressure.
- Participated in case-based discussions on acute angle-closure glaucoma.
- Observed or discussed at least two emergency eye presentations in clinical or simulated settings.
- Practiced recognition of red flags using clinical scenarios or OSCE-style stations.
- Received feedback from faculty on emergency recognition and escalation.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on acute painful red eye.
- Case-based discussion on raised intraocular pressure or acute glaucoma.
- Direct observation in OPD, emergency, or simulated setting.
- Scenario-based viva or short-answer assessment.
- Mini-CEX or workplace-based assessment.
- Faculty feedback on recognition and escalation of emergency signs.
- Review of documentation or oral case presentation.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The Second Year MBBS student should be able to recognize acute painful red eye with reduced vision and halos as a possible emergency while under direct supervision. The student should immediately inform the supervising clinician and assist in urgent referral or immediate management only as directed.

The student should not independently diagnose, treat, prescribe, discharge, or refer the patient without direct supervision.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student maintains satisfactory performance in supervised sessions and assessments. Reassessment is required after prolonged absence or unsatisfactory performance in emergency recognition.

EPA 4: Counseling Patient and Attendants Regarding Sudden Visual Loss and Need for Urgent Care

1. Title of the EPA

Counsel the patient and attendants regarding the seriousness of sudden visual loss, importance of early treatment, compliance with medication, and need for follow-up.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a **Second Year MBBS student** to:

1. Explain, in simple language, that sudden painful visual loss or acute blurred vision can be serious.
2. Communicate the need for urgent assessment by a qualified clinician or ophthalmologist.
3. Explain the importance of early treatment in preventing permanent visual loss.
4. Reinforce the need to follow prescribed medication and instructions given by the treating doctor.
5. Explain the importance of follow-up visits.
6. Address basic concerns of the patient and attendants respectfully.
7. Avoid giving unauthorized medical advice, independent diagnosis, or treatment instructions beyond the supervisor's guidance.

Context:

Ophthalmology OPD, emergency department, ward, primary care setting, simulated patient encounter, or supervised communication skills session.

Target transition point:

Second Year MBBS student progressing from basic communication skills to supervised counseling in common emergency presentations.

Limitations:

This EPA does not include independent breaking of bad news, independent diagnosis, prescription of medicines, explanation of complex treatment plans, or counseling without supervision in high-risk/emergency cases. Counseling must be done under direct supervision, and all medical instructions must be consistent with the supervisor's advice.

3. Most Relevant Domains of Competence

- ☐ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☒ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour**Knowledge**

The student should demonstrate knowledge of:

- Basic concept that sudden visual loss may be sight-threatening.
- Importance of early medical care in acute painful red eye and raised intraocular pressure.
- Need for urgent ophthalmological assessment in suspected acute glaucoma.
- Importance of medication compliance when treatment is prescribed by a doctor.
- Importance of follow-up to monitor recovery and prevent complications.
- Basic principles of patient-centered communication.
- Limits of a Second Year MBBS student's counseling role.

Skills

The student should be able to:

- Introduce themselves and communicate respectfully.
- Use simple, non-technical language.
- Explain urgency without causing unnecessary fear.
- Encourage the patient and attendants to follow the treating doctor's instructions.
- Check patient understanding by asking them to repeat key advice.

- Respond to basic questions within the student's level of training.
- Refer unanswered or complex questions to the supervisor.
- Maintain confidentiality and privacy during counseling.

Attitude and Behaviour

The student should demonstrate:

- Empathy towards patient anxiety related to visual loss.
- Respect for patient and family concerns.
- Honesty about personal limitations.
- Calm and reassuring communication.
- Professionalism and confidentiality.
- Cultural sensitivity while counseling patients and attendants.
- Commitment to patient safety and timely care.

Required Experience

Before entrustment, the student should have:

- Observed faculty or clinicians counseling patients with eye complaints.
- Practiced counseling in simulated patient sessions.
- Participated in communication skills teaching related to emergency symptoms.
- Practiced explaining warning signs and follow-up advice in simple language.
- Received feedback from a supervisor on communication and professionalism.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on counseling a patient with sudden visual loss.
- Direct observation of supervised counseling.
- Simulated patient feedback.
- Faculty feedback during communication skills session.
- Mini-CEX or workplace-based assessment.
- Case-based discussion on counseling and follow-up.
- Reflective writing on patient communication and emergency advice.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The Second Year MBBS student should be able to counsel the patient and attendants about the seriousness of sudden visual loss, need for urgent care, compliance with prescribed medication, and follow-up while the supervisor is physically present or directly observing.

The student should not independently counsel high-risk patients, prescribe medication, provide definitive management advice, or make independent referral decisions.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student continues to demonstrate safe, respectful, and supervised communication. Reassessment is required if there is prolonged absence from clinical teaching or unsatisfactory performance in counseling skills.

THEME: II

EPAs for Vertigo and Hearing Loss

For Second Year MBBS Students

EPA 1: Focused History Taking in a Patient with Vertigo and Hearing Symptoms

1. Title of the EPA

Obtain a focused history from a patient presenting with vertigo, hearing loss, tinnitus, ear fullness, nausea, or imbalance, and identify important red-flag symptoms.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a Second Year MBBS student to:

1. Obtain a focused history from a patient presenting with vertigo, hearing loss, tinnitus, ear fullness, nausea, vomiting, or imbalance.
2. Ask about onset, duration, frequency, severity, progression, triggers, positional variation, associated ear symptoms, neurological symptoms, trauma, fever, drug history, and previous similar episodes.
3. Identify red-flag symptoms such as sudden hearing loss, severe headache, diplopia, facial weakness, limb weakness, slurred speech, loss of consciousness, severe vomiting, recent head trauma, high fever, or inability to walk.
4. Recognize that vertigo with neurological symptoms or sudden hearing loss may require urgent referral.

5. Communicate findings clearly to the supervising teacher or clinician.

Context:

Skills lab, ENT OPD, emergency department, ward, primary care setting, or simulated patient encounter.

Target transition point:

Second Year MBBS student progressing from basic anatomy and physiology of ear and vestibular system to supervised clinical history taking.

Limitations:

This EPA does not include independent diagnosis, prescription of treatment, independent referral, or management of vertigo. The student must work under direct supervision.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☐ Collaborator
- ☒ Professional
- ☒ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour

Knowledge

The student should demonstrate knowledge of:

- Basic anatomy of external, middle, and inner ear.
- Basic physiology of hearing and balance.
- Common symptoms of ear and vestibular disorders.
- Difference between vertigo, dizziness, imbalance, and syncope.
- Red-flag symptoms suggesting serious neurological or otological disease.
- Importance of early referral in sudden hearing loss or vertigo with neurological features.

Skills

The student should be able to:

- Introduce themselves and confirm patient identity.
- Take consent before history taking.
- Ask focused questions related to vertigo and hearing symptoms.
- Explore associated symptoms including tinnitus, ear discharge, ear pain, hearing loss, nausea, vomiting, and imbalance.
- Ask about neurological symptoms such as weakness, facial deviation, diplopia, dysarthria, or altered consciousness.
- Summarize and present key findings to the supervisor.
- Document important positive and negative findings.

Attitude and Behaviour

The student should demonstrate:

- Empathy towards a patient experiencing dizziness or hearing difficulty.
- Respect for privacy, dignity, and confidentiality.
- Patience while communicating with a patient who may have hearing impairment.
- Awareness of personal limitations.
- Prompt reporting of red-flag symptoms to the supervisor.
- Professional and respectful behaviour.

Required Experience

Before entrustment, the student should have:

- Observed focused ENT/vestibular history taking at least twice.
- Practiced history taking in simulated or supervised clinical settings.
- Participated in case-based discussion on vertigo and hearing loss.
- Received supervisor feedback on history-taking technique and red-flag recognition.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- Direct observation of history taking.
- OSCE station on vertigo/hearing loss history.
- Mini-CEX or supervised clinical encounter.
- Case-based discussion.
- Checklist-based assessment.
- Review of written documentation.

- Feedback from faculty or clinical supervisor.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to obtain a focused history and identify red-flag symptoms while the supervisor is physically present and available to guide or intervene.

The student should not independently diagnose, manage, prescribe, discharge, or refer the patient.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student maintains satisfactory performance in supervised sessions. Reassessment is required after prolonged absence or unsatisfactory performance.

EPA 2: Basic Structured Ear and Vestibular Examination

1. Title of the EPA

Perform a basic structured ear and vestibular examination including otoscopy, whispered voice test, Rinne test, Weber test, observation for nystagmus, gait assessment, and Romberg test where appropriate.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a Second Year MBBS student to:

1. Perform a basic structured ear examination under direct supervision.
2. Inspect the external ear and surrounding area.
3. Perform otoscopy safely under supervision.
4. Perform whispered voice test as a basic bedside hearing assessment.
5. Perform Rinne and Weber tuning fork tests.
6. Observe for spontaneous or gaze-evoked nystagmus.
7. Assess gait and perform Romberg test where appropriate.
8. Report examination findings to the supervising teacher or clinician.

Context:

Skills lab, ENT OPD, clinical demonstration room, emergency department, or simulated clinical setting.

Target transition point:

Second Year MBBS student moving from basic anatomical knowledge to supervised clinical examination of ear and vestibular function.

Limitations:

This EPA does not include independent interpretation for final diagnosis, ear syringing, advanced audiometry, vestibular function testing, or independent management. Examination must be performed under direct supervision.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☐ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour**Knowledge**

The student should demonstrate knowledge of:

- Basic anatomy of external ear, tympanic membrane, middle ear, and inner ear.
- Principles of otoscopy.
- Basic principles of hearing assessment.
- Purpose of whispered voice test, Rinne test, and Weber test.
- Basic concept of nystagmus, gait assessment, and Romberg test.
- Safety precautions during ear examination and balance assessment.

Skills

The student should be able to:

- Explain the examination and obtain consent.
- Wash hands and prepare examination equipment.
- Inspect the external ear.
- Use an otoscope safely under supervision.
- Perform whispered voice test correctly.
- Perform Rinne and Weber tests using a tuning fork.
- Observe for nystagmus.
- Assess gait safely.
- Perform Romberg test with appropriate precautions.
- Present findings clearly to the supervisor.

Attitude and Behaviour

The student should demonstrate:

- Gentle handling during ear examination.
- Respect for patient comfort and privacy.
- Awareness of patient safety during gait and Romberg testing.
- Professional behaviour and infection control.
- Willingness to seek help if the patient is unstable or symptomatic.
- Recognition of own limitations.

Required Experience

Before entrustment, the student should have:

- Observed ear and vestibular examination at least twice.
- Practiced otoscopy in skills lab or supervised clinical setting.
- Practiced whispered voice, Rinne, and Weber tests.
- Practiced observation for nystagmus, gait assessment, and Romberg test under supervision.
- Received feedback from a faculty member or clinical supervisor.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on ear and vestibular examination.
- Direct observation in skills lab or clinical setting.

- Checklist-based assessment.
- Mini-CEX or workplace-based assessment.
- Faculty feedback.
- Case-based discussion.
- Review of oral presentation of examination findings.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to perform basic ear and vestibular examination while the supervisor is physically present and able to guide or correct the student.

The student should not independently diagnose, perform advanced procedures, or manage the patient.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student maintains safe examination technique. Reassessment is required after prolonged absence or unsatisfactory performance.

EPA 3: Bedside Differentiation of Conductive and Sensorineural Hearing Loss

1. Title of the EPA

Differentiate likely conductive hearing loss from sensorineural hearing loss using bedside clinical findings and tuning fork tests.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a Second Year MBBS student to:

1. Use relevant history and bedside findings to suspect conductive or sensorineural hearing loss.
2. Perform Rinne and Weber tests under direct supervision.
3. Interpret bedside tuning fork findings at a basic level.
4. Correlate tuning fork findings with symptoms such as ear discharge, ear pain, tinnitus, vertigo, or sudden hearing loss.
5. Recognize that sudden sensorineural hearing loss requires urgent referral.
6. Communicate likely findings to the supervising teacher or clinician.

Context:

ENT OPD, skills lab, ward, simulated clinical encounter, or supervised bedside teaching session.

Target transition point:

Second Year MBBS student progressing from basic physiology of hearing to supervised bedside assessment of hearing loss.

Limitations:

This EPA does not include final diagnosis, audiometry interpretation, prescription of treatment, independent referral, or management of hearing loss. The student's role is limited to supervised bedside assessment and reporting.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☐ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour**Knowledge**

The student should demonstrate knowledge of:

- Basic physiology of hearing.
- Difference between conductive and sensorineural hearing loss.
- Common causes of conductive hearing loss such as wax, otitis media, tympanic membrane perforation, and ossicular problems.
- Common causes of sensorineural hearing loss such as inner ear disease, noise exposure, ageing, ototoxic drugs, and sudden sensorineural hearing loss.
- Principles of Rinne and Weber tests.
- Importance of urgent referral in sudden sensorineural hearing loss.

Skills

The student should be able to:

- Ask relevant hearing-related questions.
- Perform Rinne test correctly.
- Perform Weber test correctly.
- Interpret basic Rinne and Weber findings.
- Identify findings suggestive of conductive hearing loss.
- Identify findings suggestive of sensorineural hearing loss.
- Report findings clearly and accurately to the supervisor.
- Avoid overdiagnosis beyond the student's level of training.

Attitude and Behaviour

The student should demonstrate:

- Patience while interacting with patients with hearing difficulty.
- Respectful communication.
- Professionalism and confidentiality.
- Honesty about limitations.
- Prompt reporting of concerning findings.
- Careful and safe use of tuning fork.

Required Experience

Before entrustment, the student should have:

- Observed bedside hearing assessment at least twice.
- Practiced Rinne and Weber tests on peers or simulated patients.
- Participated in teaching sessions on conductive and sensorineural hearing loss.
- Discussed cases of hearing loss with a supervisor.
- Received feedback on technique and interpretation.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on Rinne and Weber tests.
- Direct observation of tuning fork testing.
- Checklist-based assessment.
- Case-based discussion on hearing loss.

- Mini-CEX or supervised clinical encounter.
- Viva/short case on conductive and sensorineural hearing loss.
- Faculty feedback.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to perform bedside hearing assessment and suggest likely conductive or sensorineural hearing loss while the supervisor is physically present.

The student should not independently diagnose, treat, refer, or reassure the patient without supervisor confirmation.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student maintains satisfactory performance. Reassessment is required after prolonged absence or unsatisfactory performance.

EPA 4: Recognition and Escalation of Vertigo with Hearing Loss

1. Title of the EPA

Recognize vertigo with hearing loss as a clinically important presentation requiring appropriate evaluation, referral, and early management.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a Second Year MBBS student to:

1. Recognize vertigo associated with hearing loss as an important clinical presentation.
2. Identify associated symptoms such as tinnitus, ear fullness, nausea, vomiting, imbalance, headache, fever, ear discharge, or neurological symptoms.
3. Recognize red flags requiring urgent senior review, including sudden hearing loss, severe headache, neurological deficit, inability to walk, recent trauma, or persistent vomiting.
4. Inform the supervising clinician promptly.
5. Assist in initial evaluation and referral process under supervision.
6. Understand the importance of early management to prevent complications.

Context:

ENT OPD, emergency department, ward, primary care setting, skills lab, or simulated case scenario.

Target transition point:

Second Year MBBS student progressing from basic clinical recognition to supervised escalation of important ENT presentations.

Limitations:

This EPA does not include independent diagnosis, prescription of vestibular suppressants or antibiotics, independent referral, or management of emergency cases. The student must work under direct supervision.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☒ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour**Knowledge**

The student should demonstrate knowledge of:

- Basic causes of vertigo with hearing loss.
- Difference between peripheral and central warning features at a basic level.
- Important red flags in vertigo.
- Seriousness of sudden hearing loss and neurological symptoms.
- Need for timely evaluation and referral.
- Role of supervised early management and follow-up.

Skills

The student should be able to:

- Recognize clinically important symptoms from history.
- Identify danger signs requiring urgent attention.
- Present the case clearly to the supervisor.
- Assist in arranging supervised referral or further evaluation.
- Communicate urgency to the patient without causing panic.
- Document key findings where required.

Attitude and Behaviour

The student should demonstrate:

- Vigilance in recognizing potentially serious presentations.
- Promptness in seeking senior help.
- Patient-centered communication.
- Respect for patient concerns and anxiety.
- Teamwork with healthcare staff.
- Awareness of personal limitations.

Required Experience

Before entrustment, the student should have:

- Attended teaching sessions on vertigo and hearing loss.
- Participated in case-based discussions.
- Observed supervised evaluation of patients with ENT complaints.
- Practiced recognition of red flags through scenarios or OSCE stations.
- Received feedback from a supervisor.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on vertigo with hearing loss.
- Case-based discussion.
- Direct observation in OPD or simulated setting.
- Mini-CEX or workplace-based assessment.

- Scenario-based viva.
- Faculty feedback.
- Review of oral or written case presentation.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to recognize vertigo with hearing loss as a clinically important presentation and inform the supervisor while working under direct supervision.

The student should not independently manage, prescribe, refer, discharge, or provide definitive diagnosis.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student demonstrates satisfactory supervised performance. Reassessment is required after prolonged absence or unsatisfactory performance.

EPA 5: Counseling a Patient with Vertigo and Hearing-Related Symptoms

1. Title of the EPA

Counsel the patient regarding fall prevention, avoidance of driving during acute vertigo, hearing protection, medication compliance, and need for follow-up.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a Second Year MBBS student to:

1. Counsel the patient and attendants in simple language under direct supervision.
2. Explain basic fall prevention measures during vertigo.
3. Advise avoidance of driving, operating machinery, or climbing heights during acute vertigo.
4. Explain the importance of hearing protection from loud noise.
5. Reinforce compliance with medication prescribed by the treating doctor.
6. Explain the need for follow-up and urgent return if red-flag symptoms occur.
7. Refer complex questions to the supervisor.

Context:

ENT OPD, emergency department, ward, primary care setting, communication skills session, or simulated patient encounter.

Target transition point:

Second Year MBBS student progressing from basic communication skills to supervised patient counseling in ENT presentations.

Limitations:

This EPA does not include independent counseling in emergency cases, prescription of medication, explanation of complex diagnosis, breaking bad news independently, or giving unsupervised medical advice. Counseling must be directly supervised.

3. Most Relevant Domains of Competence

- ☐ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☒ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour**Knowledge**

The student should demonstrate knowledge of:

- Basic safety risks associated with vertigo and imbalance.
- Importance of fall prevention.
- Risk of driving or operating machinery during acute vertigo.
- Importance of hearing protection.
- Importance of medication compliance as prescribed by the doctor.
- Importance of follow-up in vertigo and hearing loss.
- Red-flag symptoms requiring urgent medical attention.

Skills

The student should be able to:

- Communicate in simple, understandable language.
- Explain fall prevention measures such as sitting/lying during severe dizziness, avoiding sudden movements, using support while walking, and seeking help.
- Advise avoidance of driving during acute vertigo.
- Reinforce doctor's instructions regarding medication.
- Explain the importance of follow-up.
- Check patient understanding.
- Answer basic questions within the student's level.
- Refer complex concerns to the supervisor.

Attitude and Behaviour

The student should demonstrate:

- Empathy towards patient anxiety and discomfort.
- Respectful communication with patient and attendants.
- Patience with elderly or hearing-impaired patients.
- Cultural sensitivity.
- Honesty about personal limitations.
- Professionalism and confidentiality.
- Commitment to patient safety.

Required Experience

Before entrustment, the student should have:

- Observed counseling of patients with vertigo or hearing symptoms.
- Practiced counseling in simulated patient sessions.
- Participated in communication skills teaching.
- Practiced giving safety advice and follow-up instructions.
- Received feedback from a supervisor.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on counseling for vertigo and hearing loss.
- Direct observation of supervised counseling.
- Simulated patient feedback.

- Faculty feedback.
- Mini-CEX or workplace-based assessment.
- Reflective writing on patient counseling.
- Case-based discussion.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to counsel the patient regarding safety, driving avoidance during acute vertigo, hearing protection, medication compliance, and follow-up while the supervisor is physically present.

The student should not independently prescribe, diagnose, alter medication, or give definitive management advice without supervisor approval.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student continues to demonstrate safe, respectful, and supervised counseling. Reassessment is required after prolonged absence or unsatisfactory performance.

THEME 3

EPAs for Diplopia, Ocular Movements, Accommodation and Eye Trauma

For Second Year MBBS Students

EPA 1: Focused History Taking in a Patient with Diplopia, Blurred Near Vision, Eye Trauma or Suspected Strabismus

1. Title of the EPA

Obtain a focused history from a patient presenting with diplopia, blurred near vision, eye trauma, headache, abnormal ocular movements, or suspected strabismus, and identify red-flag features.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a **Second Year MBBS student** to:

1. Obtain a focused history from a patient presenting with double vision, blurred near vision, eye trauma, headache, abnormal ocular movements, or suspected squint/strabismus.
2. Ask about onset, duration, progression, laterality, intermittent or constant nature of symptoms, relation with near or distance vision, trauma history, pain, headache, vomiting, and neurological symptoms.
3. Differentiate whether diplopia is monocular or binocular at a basic level.
4. Ask about associated symptoms such as reduced vision, eye pain, drooping of eyelid, facial injury, nausea, vomiting, weakness, imbalance, or loss of consciousness.
5. Identify red-flag features including diplopia after trauma, restricted eye movement, severe headache, vomiting, reduced vision, unequal pupils, ptosis, neurological deficit, suspected orbital fracture, or loss of consciousness.
6. Promptly report red-flag features to the supervising clinician.

Context:

Skills laboratory, ophthalmology OPD, ENT OPD, emergency department, ward, primary care setting, or simulated patient encounter.

Target transition point:

Second Year MBBS student progressing from basic anatomy and physiology of ocular movements and cranial nerves to supervised clinical history taking.

Limitations:

This EPA does not include independent diagnosis, prescription of treatment, independent referral, interpretation of imaging, or management of orbital/facial trauma. The student must work under direct supervision.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☐ Collaborator
- ☒ Professional
- ☒ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour

Knowledge

The student should demonstrate knowledge of:

- Basic anatomy of extraocular muscles and their nerve supply.
- Basic functions of cranial nerves III, IV, and VI.
- Meaning of diplopia, strabismus, ocular movement restriction, and blurred near vision.
- Basic concept of accommodation and near response.
- Common red flags in diplopia and eye trauma.
- Importance of urgent referral in diplopia after trauma, reduced vision, or neurological signs.

Skills

The student should be able to:

- Introduce themselves and obtain consent.
- Ask focused questions about diplopia, near vision, trauma, headache, and ocular movement symptoms.
- Clarify whether diplopia is monocular or binocular.
- Ask about trauma mechanism, timing, severity, and associated facial injury.
- Identify danger symptoms such as reduced vision, severe headache, vomiting, ptosis, unequal pupils, or neurological weakness.
- Summarize and present key findings to the supervisor.
- Document relevant positive and negative findings.

Attitude and Behaviour

The student should demonstrate:

- Empathy towards a patient with visual disturbance or trauma.
- Respect for privacy, dignity, and confidentiality.
- Calm and professional behaviour in emergency situations.
- Awareness of personal limitations.
- Prompt reporting of red flags to the supervisor.
- Safe and respectful communication with patient and attendants.

Required Experience

Before entrustment, the student should have:

- Observed focused history taking in patients with eye symptoms or trauma.
- Practiced history taking in simulated or supervised clinical settings.

- Participated in case-based discussion on diplopia, strabismus, and ocular trauma.
- Received feedback from a supervisor on history taking and red-flag recognition.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- Direct observation of focused history taking.
- OSCE station on diplopia or ocular trauma.
- Mini-CEX or supervised clinical encounter.
- Case-based discussion.
- Checklist-based assessment.
- Review of written documentation.
- Faculty or clinical supervisor feedback.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to obtain a focused history and identify red-flag features while the supervisor is physically present and available to guide or intervene.

The student should not independently diagnose, manage, prescribe, discharge, or refer the patient.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student maintains satisfactory supervised performance. Reassessment is required after prolonged absence or unsatisfactory performance.

EPA 2: Basic Structured Ocular and Cranial Nerve Examination

1. Title of the EPA

Perform a basic structured ocular and cranial nerve examination including visual acuity, pupillary reactions, ocular alignment, extraocular movements, near response/accommodation, and gross neurological screening.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a **Second Year MBBS student** to:

1. Perform a basic structured ocular examination under direct supervision.
2. Assess visual acuity using Snellen chart or near vision chart where available.
3. Assess pupillary size, equality, and reaction to light.
4. Observe ocular alignment and obvious strabismus.
5. Test extraocular movements in the six cardinal directions of gaze.
6. Assess near response/accommodation at a basic level.
7. Observe for ptosis, abnormal eye position, restricted movement, or nystagmus.
8. Perform gross neurological screening relevant to diplopia, including facial symmetry, limb weakness, and gait where appropriate.
9. Present abnormal findings clearly to the supervisor.

Context:

Skills laboratory, ophthalmology OPD, ENT OPD, emergency department, ward, or simulated clinical setting.

Target transition point:

Second Year MBBS student progressing from basic cranial nerve anatomy to supervised clinical examination.

Limitations:

This EPA does not include independent diagnosis, detailed neuro-ophthalmological examination, fundoscopy for diagnostic decision-making, imaging interpretation, or independent management. Examination must be performed under direct supervision.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☐ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour

Knowledge

The student should demonstrate knowledge of:

- Basic anatomy of the eye, extraocular muscles, and cranial nerves III, IV, and VI.
- Normal pupillary reaction and near response.
- Basic concept of ocular alignment and strabismus.
- Causes of abnormal ocular movements at a basic level.
- Red-flag signs such as restricted eye movement, unequal pupils, ptosis, reduced vision, or neurological deficit.
- Safety precautions during examination of patients with trauma.

Skills

The student should be able to:

- Explain the examination and obtain consent.
- Assess visual acuity in each eye separately.
- Examine pupillary reactions using a torch.
- Observe ocular alignment.
- Test extraocular movements systematically.
- Assess near response/accommodation.
- Observe for restriction of movement, diplopia in gaze positions, ptosis, and abnormal pupil.
- Perform gross neurological screening where appropriate.
- Present findings clearly and accurately to the supervisor.

Attitude and Behaviour

The student should demonstrate:

- Gentle handling of patients with eye pain or trauma.
- Respect for patient comfort and privacy.
- Patient safety during examination.
- Infection control and professional conduct.
- Awareness of personal limitations.
- Willingness to seek help when abnormal findings are present.

Required Experience

Before entrustment, the student should have:

- Observed ocular and cranial nerve examination by a supervisor.
- Practiced visual acuity, pupillary reaction, ocular alignment, and extraocular movement testing.

- Practiced near response/accommodation assessment in a skills lab or supervised setting.
- Participated in clinical demonstration or case-based discussion.
- Received feedback from faculty on examination technique.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on ocular and cranial nerve examination.
- Direct observation in skills lab or clinical setting.
- Checklist-based assessment.
- Mini-CEX or workplace-based assessment.
- Case-based discussion.
- Faculty feedback.
- Review of oral presentation of examination findings.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to perform a basic structured ocular and cranial nerve examination while the supervisor is physically present and available to guide or correct the student.

The student should not independently diagnose, manage, prescribe, or refer the patient.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student maintains safe examination technique and satisfactory performance. Reassessment is required after prolonged absence or unsatisfactory performance.

EPA 3: Recognition and Escalation of Diplopia after Orbital or Facial Trauma

1. Title of the EPA

Recognize diplopia after orbital/facial trauma as a potentially serious presentation requiring urgent ophthalmology and/or ENT referral when red flags, restricted eye movement, suspected fracture, or reduced vision are present.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a **Second Year MBBS student** to:

1. Recognize diplopia following orbital or facial trauma as a potentially serious presentation.
2. Identify associated red flags including reduced vision, severe pain, restricted ocular movement, swelling, bruising, deformity, unequal pupils, ptosis, bleeding, headache, vomiting, or loss of consciousness.
3. Suspect possible orbital injury or facial fracture when diplopia is associated with restricted eye movements or facial trauma.
4. Promptly inform the supervising clinician.
5. Assist in urgent evaluation and referral process under supervision.
6. Understand the need for ophthalmology and/or ENT referral when serious features are present.

Context:

Emergency department, ophthalmology OPD, ENT OPD, ward, primary care setting, skills lab, or simulated case scenario.

Target transition point:

Second Year MBBS student progressing from basic recognition of ocular trauma to supervised escalation of urgent presentations.

Limitations:

This EPA does not include independent diagnosis of orbital fracture, imaging interpretation, prescription of treatment, surgical decision-making, independent referral, or emergency management. The student must work under direct supervision.

3. Most Relevant Domains of Competence

- ☒ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional
- ☒ Health Advocate

- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour

Knowledge

The student should demonstrate knowledge of:

- Basic anatomy of orbit, extraocular muscles, and facial bones.
- Basic mechanism of diplopia after trauma.
- Red flags in orbital/facial trauma.
- Clinical importance of restricted eye movement after trauma.
- Seriousness of reduced vision after eye or facial injury.
- Need for urgent ophthalmology and/or ENT referral in suspected orbital fracture or significant ocular injury.

Skills

The student should be able to:

- Identify diplopia after trauma as a warning presentation.
- Ask focused questions about mechanism and timing of injury.
- Observe for swelling, bruising, deformity, eye movement restriction, and reduced vision.
- Recognize danger signs requiring urgent senior review.
- Present the case clearly to the supervisor.
- Assist in arranging urgent referral or further evaluation as directed.
- Avoid unnecessary pressure on the injured eye.

Attitude and Behaviour

The student should demonstrate:

- Promptness in reporting serious trauma-related symptoms.
- Calm and professional behaviour in urgent situations.
- Respectful communication with patient and attendants.
- Awareness of personal limitations.

- Teamwork with ophthalmology, ENT, emergency, and radiology teams where applicable.
- Commitment to patient safety.

Required Experience

Before entrustment, the student should have:

- Attended teaching sessions on ocular trauma and diplopia.
- Participated in case-based discussions on orbital/facial trauma.
- Observed supervised assessment of patients with eye or facial injury.
- Practiced recognition of red flags through OSCE or simulation.
- Received feedback from a supervisor.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on diplopia after trauma.
- Case-based discussion.
- Direct observation in clinical or simulated setting.
- Mini-CEX or workplace-based assessment.
- Scenario-based viva.
- Faculty feedback.
- Review of oral or written case presentation.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to recognize diplopia after orbital/facial trauma as a potentially serious presentation and immediately inform the supervisor while working under direct supervision.

The student should not independently diagnose, manage, prescribe, refer, discharge, or reassure the patient without supervisor confirmation.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student demonstrates satisfactory supervised performance. Reassessment is required after prolonged absence or unsatisfactory performance.

EPA 4: Counseling a Patient with Diplopia, Eye Trauma or Suspected Strabismus

1. Title of the EPA

Counsel the patient regarding avoidance of driving or sports until reviewed, eye protection, danger symptoms, compliance with referral, and need for follow-up.

2. Specification and Limitations

This EPA includes no more and no less than the ability of a **Second Year MBBS student** to:

1. Counsel the patient and attendants in simple language under direct supervision.
2. Explain that diplopia, eye trauma, restricted eye movement, or reduced vision may require urgent medical review.
3. Advise avoidance of driving, sports, climbing heights, or operating machinery until reviewed by a qualified clinician.
4. Explain the importance of eye protection after trauma and during risk-prone activities.
5. Explain danger symptoms requiring urgent return, such as worsening vision, severe pain, vomiting, increasing swelling, double vision, unequal pupils, or neurological symptoms.
6. Reinforce compliance with referral and follow-up instructions given by the treating doctor.
7. Refer complex questions to the supervisor.

Context:

Ophthalmology OPD, ENT OPD, emergency department, ward, primary care setting, communication skills session, or simulated patient encounter.

Target transition point:

Second Year MBBS student progressing from basic communication skills to supervised counseling in ophthalmic and trauma-related presentations.

Limitations:

This EPA does not include independent counseling in emergency cases, prescription of medication, explanation of complex diagnosis, medicolegal advice, or giving unsupervised medical instructions. Counseling must be directly supervised.

3. Most Relevant Domains of Competence

- ☐ Medical Expert
- ☒ Communicator
- ☒ Collaborator
- ☒ Professional

- ☒ Health Advocate
- ☐ Scholar
- ☐ Manager/Leader

4. Required Experience, Knowledge, Skills, Attitude and Behaviour

Knowledge

The student should demonstrate knowledge of:

- Basic safety risks associated with diplopia and abnormal ocular movements.
- Importance of avoiding driving and sports during acute diplopia or after significant eye trauma.
- Importance of eye protection.
- Danger symptoms requiring urgent medical review.
- Importance of referral compliance and follow-up.
- Limits of a Second Year MBBS student's counseling role.

Skills

The student should be able to:

- Communicate in simple, understandable language.
- Explain safety advice clearly.
- Encourage compliance with referral and follow-up.
- Advise avoidance of driving, sports, heights, and machinery until reviewed.
- Explain danger symptoms that require urgent return.
- Check patient understanding.
- Answer basic questions within the student's level of training.
- Refer complex questions to the supervisor.

Attitude and Behaviour

The student should demonstrate:

- Empathy towards patient anxiety about vision and trauma.
- Respectful communication with patient and attendants.

- Cultural sensitivity.
- Honesty about personal limitations.
- Professionalism and confidentiality.
- Commitment to patient safety.
- Calm and reassuring behaviour.

Required Experience

Before entrustment, the student should have:

- Observed counseling of patients with eye complaints or trauma.
- Practiced counseling in simulated patient sessions.
- Participated in communication skills teaching.
- Practiced giving safety and follow-up advice.
- Received supervisor feedback on counseling technique.

5. Assessment Information Sources to Assess Progress and Ground a Summative Entrustment Decision

Assessment may be based on:

- OSCE station on counseling for diplopia or eye trauma.
- Direct observation of supervised counseling.
- Simulated patient feedback.
- Faculty feedback.
- Mini-CEX or workplace-based assessment.
- Case-based discussion.
- Reflective writing on patient counseling and safety advice.

6. Entrustment Decision: Level of Supervision to be Reached at Which Stage of Training

By the end of the relevant Second Year MBBS teaching session/module, the student should be entrusted at:

Level 2: Perform the activity under direct supervision.

The student should be able to counsel the patient regarding safety, avoidance of driving or sports, eye protection, danger symptoms, referral compliance, and follow-up while the supervisor is physically present.

The student should not independently prescribe, diagnose, alter treatment, or give definitive management advice without supervisor approval.

7. Expiration Date

Entrustment remains valid for **one academic year**, provided the student continues to demonstrate safe, respectful, and supervised counseling. Reassessment is required after prolonged absence or unsatisfactory performance.