



# MBBS CURRICULUM

GUIDE

EDITION  
2023

WOMEN  
MEDICAL COLLEGE

WOMEN  
MEDICAL COLLEGE

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# **Introduction**

Women Medical College (WMC) is a project of PEPS (Professional Education & Promotion Society), which was established in 1999. The first batch of MBBS students was inducted in 2000 with the purpose of empowering women in the society who want to pursue a career in medicine. Each year 100 female medical students graduate to contribute in addressing the health problems of Pakistan. Women Medical College (WMC) is registered with Pakistan Medical and Dental Council (PMDC) as well as the Higher Education Regulatory Authority, Peshawar (HERA). Women Medical College is also affiliated with Khyber Medical University, Peshawar (KMU) since 2011, which is involved in conducting professional examinations for the program. We have a range of affiliated teaching hospitals to train doctors in real life situations. These include Jinnah International Hospital Abbottabad (JIHA), Benazir Bhutto Shaheed Teaching Hospital Abbottabad, and Women and Children Hospital Abbottabad.

## **Mission Statement**

To train and develop competent healthcare professionals through an ethical, innovative, and culturally appropriate learning experience to cater for the health needs of the community.

## **Vision Statement**

To create ethically strong healthcare professionals by strengthening academic activities and patient care and develop state of a art university.

# Affiliated Institutions

## Benazir Bhutto Shaheed Teaching Hospital (DHQ)

Women Medical College is associated with Benazir Bhutto Shaheed Teaching Hospital (DHQ) and Women & Children Hospital through Public Private Partnership Agreement under KPK Government. BBS Hospital is a reputed teaching hospital, to which Ayyub Medical College Abbottabad had been affiliated for more than 20 years.

These two hospitals collectively have more than 500 beds and their OPDs have been catering one thousand patients per day.

## Jinnah International Hospital, Abbottabad

Women Medical College has its own teaching hospital named as Jinnah International Hospital Abbottabad, located within the premises of WMC having the capacity of 200 beds with latest and sophisticated equipment like Laparoscope & Hysteroscopy, diagnostic & operative, Colposcopy, Ultrasound with vaginal probe for Gynae, Ventilators for neonatal & adults, Cardiac machine, Pulse Oximeter, Ultrasonic Nebulizer, Audiogram, CT Scan, Fluoroscopy, Digital X-ray, Multimedia & Image Intensifier, Bronchoscopy and Endoscopy etc.



## Governing and Regulatory Bodies:

### Pakistan Medical & Dental Council

It is a national statutory body of the country that regulates the medical profession in general and monitors the medical education in particular. The College was initially recognized for 50 students in the year 2003 by PMDC and thereafter in year 2007, for admission of 100 students per year purely on its meritorious grounds of teaching and training.

### Khyber Medical University, Peshawar

Women Medical College is affiliated with Khyber Medical University, Peshawar since 2010. The KMU was established in January 2007 and is the first Medical University of Health Sciences in Khyber Pakhtunkhwa. The University conducts professional examinations in MBBS and BDS program. In addition, the university conducts the postgraduate, nursing, medical technology and physiotherapy exam. The university has a mandate to uplift the

medical education not only nationally but internationally. All Medical & Dental colleges of public & private sector of K.P.K are affiliated with KM



# WORLD HEALTH ORGANIZATION (WHO):

The World Health Organization (WHO) is a specialized agency of the United Nations responsible for international public health. The WHO Constitution states its main objective as "**the attainment by all peoples of the highest possible level of health**". Women Medical College is affiliated with the WHO and strives to accomplish the goals that are endorsed by WHO.

## THE UNITED NATIONS SDGs - THE GOALS WE SUPPORT

Aligned with Agenda 2030, the United Nations has defined 17 sustainability goals known as Sustainable Development Goals (SDGs). As an entity of Pakistan, WM&DC has strategically prioritized these goals and make significant strides towards their achievements.

### Goal-3 Good health & Wellbeing:

The hospitals of WM&DC offer the best treatment options among the Private Sector Hospitals in the City. The medical hospital affiliated with the institute, named "Jinnah International Hospital Abbottabad" provides free and high-quality treatments based on the Sehat Sahulat Card Program, fulfilling the criteria of Universal Health Coverage (UHC). The Card offers the opportunity to avail free of charge treatment from Jinnah International Hospital Abbottabad to the public. The Dental Hospital named "Rehmat Memorial Dental Teaching Hospital" provides affordable dental treatments, organizes free dental camps in rural areas, offers free complete dentures, and implements scaling treatment programs at the hospital. The hospital staff treat patients with both equality, and respect, while upholding patient rights.



### Goal-4 Quality Education:

The college Principal & Directors support the implementation of innovative teaching & learning programs within the institute. The Department of Medical Education strategically plans and organizes workshops on innovative teaching methodologies to improve and enhance students' active & critical thinking skills to deal with real-life situations more effectively. To ensure the quality improvement of education,



the Feedback forms are distributed to both students & faculty members, and further improvements are made in the Curriculum based on the feedback received.

### **Goal-5 Gender Equality:**

The Institute supports Women Empowerment to achieve gender equality by providing opportunities for female students to grow their careers as doctors. Principal, Prof. Dr. Salma Kundi, supports women's autonomy, empowering them with knowledge, skills & self-confidence to participate in the development process. More than 60% of the faculty is represented by the female staff promoting economic independence for the women in the district.



### **Goal-6 Clean Water & Sanitization:**

The Administration ensures the cleanliness of the hospitals and the teaching and learning institute. Water filters are strategically installed all over the hospital and the college building. Our hospitals achieve sanitization through the proper use of disinfectants and sterilization practices, ensuring no transmission of infectious diseases to patients.



### **Goal-10 Reduce inequalities:**

Our college provides a special quota for overseas students, and the college provides a feasible environment for these students. Our college provides opportunities for girls of remote rural settings to become doctors. Equal opportunities are being provided to urban & rural areas.



### **Goal-13 Climate action:**

WM&DC makes climate-conscious efforts and arranges activities that majorly include the Tree Plantation for each year of MBBS & BDS Students, to integrate climate change measures into building knowledge of the students.



### **Goal-14 Safeguarding Life Below Water:**

The affiliated hospitals of WM&DC have a contract with the Abbottabad Private Hospital Association at Gillani Medical Complex, that makes sure the waste is incinerated and no chemicals are harmful to the life below water.



# Curriculum Development

This curriculum book consists of the content introduced to the medical students of MBBS during their 5 years of undergraduate medical education at Women Medical College, Abbottabad (WMC). It is based on the educational standards and curriculum guidelines provided by the World Federation for Medical Education (WFME), Pakistan Medical & Dental Council (PMDC), Higher Education Commission, Pakistan (HEC), and Khyber Medical University, Peshawar (KMU). The curriculum of Women Medical College (WMC) adopts the evidence-based concept of constructive alignment.

## World Federation for Medical Education (WFME):

WFME standards allow the medical schools to develop their curriculum according to the needs of the community. (Federation & Medical, 2020, pp. 5–6)

There are 8 standards provided by WFME:

- Mission and values
- Curriculum
- Assessment
- Students
- Academic staff
- Educational resources
- Quality assurance
- Governance and administration

### Mission and values:

This area concerns the purpose and values of the medical school. It provides a frame of reference against which all other activities can be judged. The mission statement reflects the medical school's distinct qualities. (Federation & Medical, 2020, p. 8)

### Curriculum:

A curriculum might be defined as a managerial, ideological, and planning document that should:

- Enlighten the learner exactly what to expect, including entry requirements, length and organisation of the programme and its flexibility.
- Advise the teacher, the content and support the learners in their task of personal and professional development,

- Help the institution to set appropriate assessments of student learning and implement relevant evaluations of the educational provision, tell society how the school is executing its responsibility to produce the next generation of doctors appropriately. (Federation & Medical, 2020, p. 9)

### **Assessment:**

Assessment assures, drives, guides, creates, and optimises learning while providing feedback. In the context of a medical school, a system of assessment must exist, which incorporates multiple assessments that achieve the purpose of school and its stakeholders. (Federation & Medical, 2020, p. 15)

### **Students:**

Appropriate admission and selection policies, and systems for support of students are important for educational quality, management, and outcomes, and for the wellbeing of students. (Federation & Medical, 2020, p. 19)

### **Academic Staff:**

Importance of this area Adequate numbers of well-trained and committed academic staff (also referred to as faculty or teachers), supported by technical and administrative staff, are critical to the effective delivery of the curriculum. (Federation & Medical, 2020, p. 22)

### **Educational Resources:**

Sufficient educationally and contextually appropriate physical, clinical, and information resources are critical to the delivery of a medical curriculum. (Federation & Medical, 2020, p. 24)

### **Quality Assurance:**

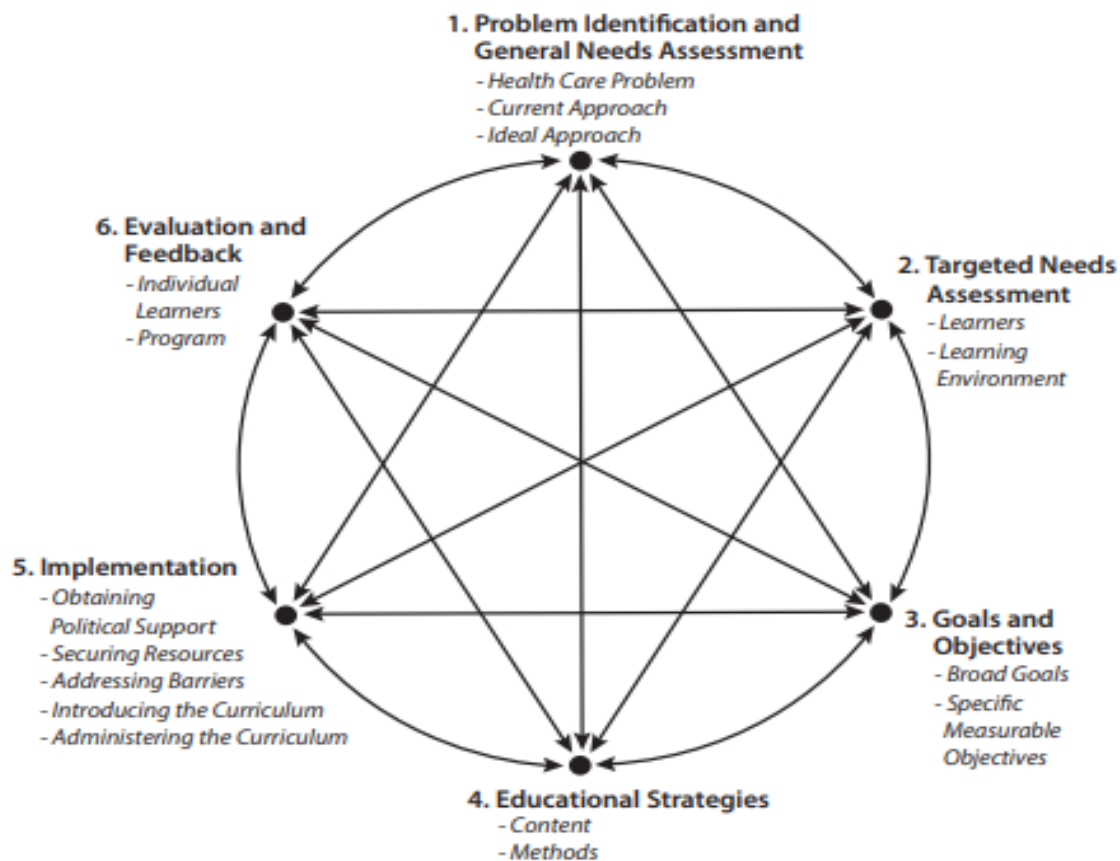
Regular review of the activities of the medical school, supported by a system of school-level quality assurance, will ensure that they are appropriate, and compliant with the mission statement and curriculum. (Federation & Medical, 2020, p. 27)

### **Governance and Administration:**

Effective implementation of the educational, research, and quality assurance activities of a school requires management, administration, budget allocation, and accountability which should involve all interested parties. (Federation & Medical, 2020, p. 28)

# Guidelines for Curriculum Development by Pakistan Medical Commission (PMC):

PMC provides broad guidelines and a template for standard curriculum; Universities are required to develop curricula according to the framework given in the document of “Pakistan Medical & Dental Council’s Guidelines for Undergraduate Medical Education MBBS Curriculum” (Suparyanto dan Rosad (2015, 2020, p. 9).



Kern, D. E. (1998). Curriculum development for medical education: A six-step approach. Baltimore: Johns Hopkins University Press

A medical curriculum is designed to produce competent, compassionate, and efficient professionals capable of caring for the sick.

## Standards for a Seven Star Doctor

The expected generic competencies in a medical graduate are as follows: (PMC, 2021, p. 10)

1. Skillful
2. Knowledgeable
3. Community Health Promoter

4. Critical Thinker
5. Professional
6. Scholar
7. Leader and Role Model

## **Higher Education Commission (HEC):**

The HEC in collaboration with the Pakistan Medical & Dental Council (PMDC) developed a curriculum document for the MBBS program in 2011. This document provides details about the course content, credit hours, and the competencies of a medical graduate. According to HEC 2011, a system-based curriculum with horizontal and vertical integration is preferred, which is being followed at Women Medical College (WMC). It also recommends 36 weeks of teaching and learning in one academic year with 42 hours of teaching per week and 1512 hours per year.

## **Khyber Medical University (KMU):**

In 2018, Khyber Medical University took the initiative of transforming medical education in KPK and introduced the integrated system-based modular curriculum for the MBBS program with the help of its affiliated institutions including Women Medical College (WMC). Our college leadership and faculty members welcomed the change and fully supported the curricular reform initiative with active participation in Central Curriculum Committee (CCC) meetings in Khyber Medical University (KMU). MBBS curriculum by Khyber Medical University (KMU) is available at the given link.

<https://www.kmc.edu.pk/curriculum/>

# Curriculum Development in Women Medical College (WMC):

With the changing trends in medical education worldwide, the Department of Medical Education & Research (DMER), Women Medical College (WMC) reviewed the teaching and learning process in the institute. This led to the introduction of small group interactive sessions and online learning management systems to promote learning. The curriculum of Women Medical College (WMC) is distinct due to the application of the evidence-based concept of constructive alignment introduced by the Biggs in 1996. According to this concept, the Intended Learning Outcomes (ILOs) must be aligned with the Learning and Teaching (L&T) activities and assessment for effective learning (as shown in figure below). Intended Learning Outcomes (ILOs) refers to what a learner should be able to acquire or do at the end of a course or session. This framework has been integrated into the guidelines provided by Pakistan Medical Commission (PMC) standard 5.2, Higher Education Commission (HEC), and Khyber Medical University (KMU).

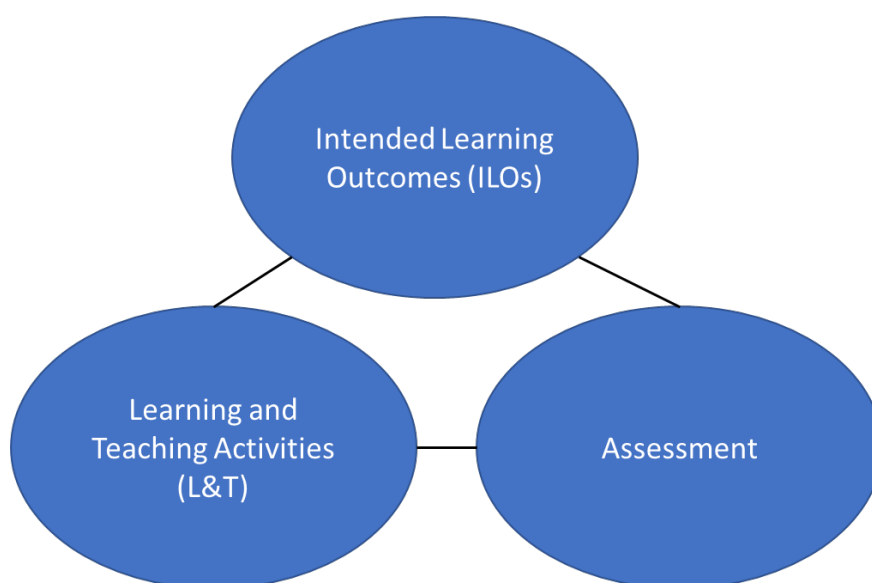


Figure 1: Constructive Alignment

The prioritization of Pakistan's health issues is integrated into the WM&DC curriculum through organized visits to various sites and centres. e.g, Basic health units, Maternal and Child healthcare centres, hospital waste management plants, small industries, slaughterhouses and rehabilitation centres. However, this activity had to be halted as the covid pandemic pushed the universities online in 2019-2021. The clinical wards

during this pandemic focused on covering the syllabus mostly related to the museum of community medicine like communicable and non-communicable diseases, nutrition, occupational health, reproductive health etc. as these activities were stopped during the pandemic now the college is coming back to a normal routine.

## **Curriculum Development Committee:**

In keeping with the Pakistan Medical & Dental Council standards, Women Medical College aims to foster a positive learning environment that facilitates student learning, promotes professionalism, and equips students for lifelong self-directed learning.

### **Purpose:**

The purpose of the Women Medical College Curriculum Committee is:

1. Develop, implement, and evaluate a curriculum that reflects current medical knowledge and practice and is consistent with meeting PMDC standards.
2. To ensure the learning outcomes of the five-year MBBS program are achieved, rooted in the seven-star doctors' philosophy of PMDC.

### **Responsibilities:**

The Curriculum Committee has three areas of responsibility. These responsibilities follow the overall mission of the Women Medical College and the accreditation standards of the PMDC.

1. Planning and designing curricular content.
2. Curriculum implementation and management
3. Curriculum evaluation and revision.

To meet these targets, the curriculum committee must:

- Coordinate with the medical education and research department, and participate in curriculum meetings.
- Set overall objectives, curriculum content, and pedagogical structure for the MBBS curriculum.
- Allocate sufficient time/ teaching hours to achieve the learning outcomes as per PMDC guidelines.
- Recommend appropriate allocation of resources to ensure that teaching and learning methodologies follow national and international standards.
- Formulate the methods of assessments following the principles of medical education.



- Ensure the periodic review of the objectives, content, assessments, and teaching.
- The curriculum and its components will be evaluated regularly by the Curriculum Committee to ensure continuous quality improvement.
  - In evaluating the quality of the curriculum, the Curriculum Committee considers evaluations and outcomes of board performance, courses, clerkships, and teachers as part of the evaluation process.
  - There are multi-source, periodic, systematic reviews of the design, content, and instruction in each course to ensure that learning objectives are appropriate and clearly stated, course content is relevant, methods are matched to the level of learning, appropriate reinforcement is included, and unnecessary redundancy is eliminated.
  - Faculty are provided with the necessary resources and tools to become effective teachers, including faculty development programs, coaching and feedback, and structured faculty evaluations.

The Curriculum Committee may establish sub-committees made up of committee members (students, staff, and faculty) with specific information or skills to support the task of the committee to develop, monitor, and improve the curriculum.

Such sub-committees may include but are not limited to:

- Basic Medical Sciences Curriculum Sub-Committee
- Assessment subcommittee
- Program Evaluation subcommittee

## **Structure:**

The structure of the curriculum committee will include the members<sup>1</sup> of the curriculum, its administrative support, and the students.

### **Curriculum Committee**

**CHAIRPERSON:** Principal, Women Medical College, Abbottabad

**CO- CHAIRPERSON:** Vice-Principal Basic Medical Sciences.

**COORDINATOR:** HOD Medical Education

**MEMBERS:** All Heads of Departments

#### **1. Curriculum Sub Committees Basic Medical Sciences**

**Chair:** Vice-Principal Basic Medical Sciences

**Module Coordinator<sup>2</sup>:** Assistant Professor or above

**Members:** Department Faculty Members

## 2. Curriculum Sub Committee Clinical Sciences

**Chair:** Vice-Principal Clinical Sciences

**Module Coordinator:** Assistant Professor or above

**Members:** Department Faculty Members

## Curriculum Committee Members Responsibilities (TORs)

They will:

1. Represent their module to Medical Education Committees. Ensure that all-academic team members have attended the module meeting (*Called by the Curriculum Coordinator*) to review their respective parts in the study guide.
2. Review/finalise the module guide with topics, discipline, learning objectives, learning strategy, assessment tool, learning resources, and teaching hours 15 days before commencement of the module.
3. Make sure that all-academic team members are kept on board as they review & sign the study guide.
4. Will collect the scheduling of tentative formal formative assessment from respective academic team members.
5. Responsible for collecting rationales from academic team members in case of any suggested change.
6. Ensure that unauthorised changes are not made in the module or Timetable. Changes, if required, should be approved by the Curriculum Committee/Curriculum Implementation Committee.
7. Is responsible for providing a complete module timetable one week before the start of the module.
8. Is responsible for providing teachers' names for sessions scheduled in the timetable.
9. While preparing the module timetable, the module coordinator should consider the following points as well;
  - Make sure that the timetable is followed accurately.

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<sup>2</sup> **Responsibilities of a module coordinator:** The module coordinator is the moderator of the assigned module; they are responsible for performing the following duties in close coordination with the Principal, Vice Principal, Medical Education Committees, Module planners, Head of Departments, and Curriculum Coordination Office.

- Self-Study should not be placed at the start or end of the day if the timetable contains such place, the session before Self-Study is interchanged with self-study.
- Module coordinator should ensure that no unauthorised changes are made in the module or Timetable.

### **Monitoring Responsibilities:**

- Module Coordinator will be responsible for giving feedback on weekly timetables regarding any deviation in the timetable.
- They will be responsible for providing Module reports to the Principal, Vice Principal, and Medical Education Committees when required.
- No deviation is allowed without approved rationales.
- Module teaching hours must be corrected and up to date.
- Module coordinator will sign the checklist of all tasks performed, with dates and signatures.

### **Assessment Responsibilities:**

Assistant Controller Exam Cell is responsible for the assessment processes in collecting Assessment Items (MCQs/OSPEs/OSCEs) from the department through Academic Team Members, in which the modular coordinator is the supporter of the Exam Cell.

# Intended Learning Outcomes:

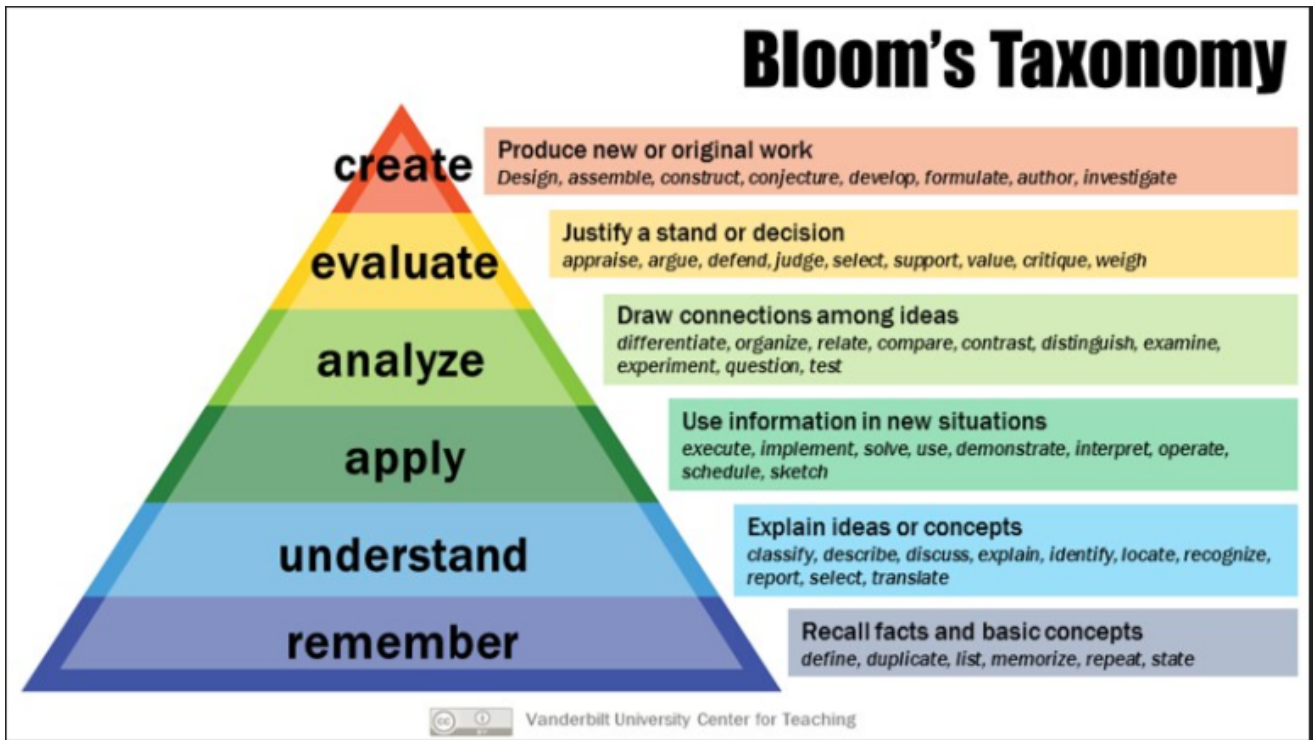
*“Clear intended learning outcomes are a key component of good programme and unit planning and assessment for our students” (Bloom, 1956).*

## What are ILO’s?

ILOs define what a learner will acquire and will be able to do upon successfully completing their studies. ILOs should be expressed from the students’ perspective and are measurable, achievable and assessable.

## Writing learning outcomes:

1. When writing learning outcomes, it is important to get the language right.
2. Start with 'at the end of the session/course/programme a successful student will be able to...'
3. Then choose an action verb that says clearly what you expect the students to be able to do at the end of the course and the cognitive level they are expected to operate at when assessed.
4. Remember that the learning outcome represents the threshold level for a pass. It is also important to use language that students understand.
5. Try to avoid expressions such as 'know', 'understand', 'appreciate', 'be familiar with', 'be aware of' as these are too vague to convey the exact nature of the outcome being sought and are difficult to assess accurately.
6. There are many lists of appropriate verbs available, mostly based on **Benjamin Bloom's Taxonomy of Learning Objectives (1956)** which identified levels of the 'cognitive domain', 'psychomotor domain' & affective domain'.
7. At each level, a range of verbs are listed which can be used in learning outcomes. We have provided a few suggestions below from the cognitive domain:



### Three Learning Domains:

1. Cognitive Domain
2. Affective Domain
3. Psychomotor Domain

## Cognitive Domain:

The cognitive domain involves the development of our mental skills and the acquisition of knowledge. The Six categories under this domain are: (Anderson, 2000, p. 1)

### I. Remember:

It is better to think of a verb that helps students to recall previously learned information. (Anderson, 2000, p. 1)

**Verbs Used:** Describe, Identify, Recognise, Define, Name, Recall

### II. Comprehension or Understanding

Second step of cognitive domain, use verbs like which will show students' understanding. (Anderson, 2000, p. 1)

**Verbs Used:** Explain, Summarise, Discuss, Recognize, Report

### III. Application

Higher level where students are able to put their knowledge and understanding to use in new situations. (Anderson, 2000, p. 1)

**Verbs Used:** Employ, Illustrate, Interpret, Practice, Solve and Use.

#### **IV. Analysis**

Is about understanding complex structures by the identification of parts and their relationships so learning outcomes (Anderson, 2000, p. 1)

**Verbs Used:** Analyse, Appraise, Compare, Contrast, Criticize.

#### **V. Evaluation**

Is posited as the highest level where students can make judgements based on the value of evidence and material for a given purpose. (Anderson, 2000, p. 1)

**Verbs Used:** Appraise, Argue, Assess and Judge.

#### **VI. Synthesis**

Is about putting parts together to form a new whole, which is important in constructing an argument and integrating knowledge. (Anderson, 2000, p. 1)

**Verbs Used:** Construct, Create, Design, Develop and Organise.

## **Affective Domain**

Like the cognitive domain, the affective domain is hierarchical, with higher levels being more complex and depending upon mastery of the lower levels. With the movement to more complexity, one becomes more involved, committed, and self-reliant. (Anderson, 2000, p. 2)

### **I. Receiving**

One is expected to be aware of or to passively attend to certain stimuli or phenomena. Simply listening and being attentive are the expectations. (Anderson, 2000, p. 2)

**Verbs Used:** Attend, Listen, Be aware, Look, Control, Notice, Discern, Share.

### **II. Responding**

One is required to comply with given expectations by attending or reacting to certain stimuli. One is expected to obey, participate, or respond willingly when asked or directed to do something. (Anderson, 2000, p. 2)

**Verbs Used:** Applaud, Participate, Comply, Play, Discuss, Practice, Follow, Volunteer, Obey.

### **III. Valuing**

Display behavior consistent with a single belief or attitude in situations where one is neither forced nor asked to comply. One is expected to demonstrate a preference or display a high degree of certainty and conviction. (Anderson, 2000, p. 2)

**Verbs Used:** Act, Express, Argue, Help, Convince, Choose, Organize, Debate, Prefer, Display.

### **IV. Organization**

Commitment to a set of values.

This level involves

- 1) forming a reason why one values certain things and not others, and
- 2) making appropriate choices between things that are and are not valued.

One is expected to organize likes and preferences into a value system and then to decide which ones will be dominant. (Anderson, 2000, p. 2)

**Verbs Used:** Classify, Organize, Abstract, Formulate, Balance, Select, Compare, Systemize, Decide, Theorize, Define.

### **V. Internalizing values (Characterization):**

All behavior displayed is consistent with one's value system. Integrates a value into a value system that controls behaviors. (Anderson, 2000, p. 2)

**Verbs Used:** Defend, Act upon, Justify Behavior, Support, Exhibit, Internalize, Manage, Require, Resist, Resolve, Revise.

## **Psychomotor Domain**

This domain is given primarily for information. Other courses within the curriculum stress these various levels of psychomotor performance (e.g., Clinical Skills Laboratory, Pharmacy Practice I). Psychomotor behaviors are performed actions that are neuromuscular in nature and demand certain levels of physical dexterity. (Dave 1975)

## **I. Imitation**

The learner observes and then imitates an action. This behavior may be crude and imperfect. The expectation that the individual is able to watch and then repeat an action. (*Bloom's Taxonomy: The Psychomotor Domain*, 2015)

**Verbs used:** Copy, Follow, Replicate Align, Place, Balance, Repeat.

## **II. Manipulation**

Performance of action with written or verbal directions but without a visual model or direct observation. The difference is that these actions are performed with the aid of written and verbal instruction, not visual demonstration. (*Bloom's Taxonomy: The Psychomotor Domain*, 2015)

**Verbs used:** Recreate, Build, Perform, Execute, Implement.

## **III. Precision**

Requires performance of some action independent of either written instructions or a visual model. One is expected to reproduce an action with control and to reduce errors to a minimum. (*Bloom's Taxonomy: The Psychomotor Domain*, 2015)

**Verbs used:** Demonstrate, Complete, Show, Perfect, Calibrate, Control, Accurately, Independently.

## **IV. Articulation**

Requires the display of coordination of a series of related acts by establishing the appropriate sequence and performing the acts accurately, with control as well as with speed and timing. (*Bloom's Taxonomy: The Psychomotor Domain*, 2015)

**Verbs used:** Construct, Solve, Combine, Coordinate, Develop, Formulate, Master.

## **V. Naturalization**

High level of proficiency is necessary. The behavior is performed with the least expenditure of energy, becomes routine, automatic, and spontaneous. (*Bloom's Taxonomy: The Psychomotor Domain*, 2015)

**Verbs used:** Automatically, Invent, Design, Spontaneously, Effortlessly, Naturally, Professionally, Routinely.



# Program General Outcomes:

Learning outcomes are key to meaningful learning, providing a transparent pathway for the student's success. The curricular outcomes of WMC are established based on Institute's Mission & University Vision.

At the end of the MBBS program, the graduates of Women Medical College should be able to demonstrate the following competencies.

1. To diagnose and manage common health problems of the individual and community by applying relevant clinical skills, using a patient-centered approach, and utilizing evidence-based practice guidelines.
2. To Demonstrate knowledge of the medico-legal responsibilities and to ensure the safety and well-being of patients.
3. Identify and differentiate the most frequent clinical, laboratory, radiological, and pathologic symptoms of common diseases, and use this knowledge to guide patient diagnosis and management.
4. Identify and evaluate factors that place individuals at risk for disease or injury and develop effective strategies to prevent and manage these risks in both individual and community settings.
5. Perform emergency and routine surgical procedures, including normal delivery, CPR, etc., using appropriate techniques and equipment to provide prompt and effective patient care.
6. Conduct a thorough and accurate general physical, organ system & mental status examination, and use this information to develop and implement effective management plans for patients.
7. Develop and implement appropriate management strategies for patients with common conditions, both acute and chronic, using a patient-centered approach and evidence-based practice guidelines.
8. Demonstrate effective communication skills with patients and members of the medical community, using appropriate language and non-verbal communication to establish rapport and build trust.
9. Integrate a holistic approach to patient care, encompassing promotive, preventive, curative, and rehabilitative aspects of common diseases, and utilizing a patient-centered approach to treatment.
10. Prescribe safe and essential drugs, keeping in view their common side effects and cost-effectiveness on the part of the patient, and follow established guidelines for drug dosages, interactions, and contraindications.

11. Analyze human psychosocial behavior in relation to health disorders and use this knowledge to inform clinical decision-making and develop effective management plans for patients.

## Competencies to be acquired at the end of the five-year MBBS program

At the end of a five year MBBS training program, students should acquire the following competencies encompassing knowledge, skills, and attitude.

<b>Knowledge</b>	<b>Skills</b>	<b>Attitude</b>
Interpret the analytical and clinical techniques, diagnostic procedures, for treating common health issues in society.	Ability to do thorough physical examinations, order and interpret diagnostic tests, develop appropriate treatment plans, and provide follow-up care.	Having empathy for patients, respecting their autonomy and uniqueness, and a dedication to offering high-quality, patient-centered treatment that is based on the best data available.
understanding of the moral and legal rules that govern the practice of medicine, such as patient rights, confidentiality, and informed consent.	The capacity to use these principles in clinical practice, properly document patient care, and deal with any potential medico-legal concerns.	To keep the trust and confidence of patients and the larger community, it is important to respect patient autonomy and act ethically.
Understanding the anatomy, physiology, and pathophysiology of prevalent disorders, and the fundamentals	To analyze patient data from various sources, such as clinical history, physical examination, laboratory tests, and	A dedication to offering patient-centered treatment based on the greatest evidence available and adapted to

of clinical decision-making and evidence-based medicine.	imaging studies, and use this data to develop a differential diagnosis and treatment plan.	the requirements and preferences of each patient.
Understanding epidemiology, environmental health, social determinants of health, behavioral and lifestyle factors influencing disease and injury, and the principles of health promotion and disease prevention.	The capacity to undertake a thorough assessment of the health risks to the individual and the community, and to create and put into practice effective prevention and management measures, such as patient education, behavior modification interventions, and community-based treatments.	An understanding of the value of prevention in enhancing health outcomes and lowering healthcare costs, as well as a dedication to promoting health equity and addressing social and environmental determinants of health.
Understanding of the fundamentals of patient safety, infection control, sterile technique, and surgical procedures.	Ability to carry out both routine and emergency surgeries, including deliveries, CPR, and other life-saving interventions, with the use of the proper tools and techniques, and to handle difficulties as they occur.	A dedication to patient safety and high standards of care, as well as an understanding of the significance of prompt, efficient action in emergency situations.

Understanding patient evaluation, diagnostic, and treatment planning principles and knowledge of anatomy, physiology, and pathophysiology.	Ability to conduct an accurate and thorough physical examination, including a system review and a mental status evaluation, and to use this data to create and carry out patient treatment plans that are effective.	A dedication to providing care that is patient-centered and an understanding of how crucial it is to conduct a complete assessment to guide effective treatment planning.
Understanding of the pathophysiology, epidemiology, and available therapies for a variety of acute and long-term health issues, as well as the values of patient-centered care and evidence-based practice.	Ability to create and implement appropriate management strategies for patients with common conditions using a patient-centered approach	A dedication to providing care that is patient-centered and an understanding of how important evidence-based practice is to improving patient outcomes.
understanding of the rules of effective communication, such as the proper use of language, nonverbal cues, and active listening techniques.	Ability to effectively communicate with patients and members of the medical community, using appropriate language and nonverbal cues to forge connections and foster trust.	a dedication to providing treatment that is patient-centered and an understanding of how crucial effective communication is to be building trust and encourage good patient outcomes.
Understanding the fundamentals of medicine, including the promotion, prevention, treatment, and rehabilitation of common diseases and	Ability to incorporate a comprehensive approach to patient care, which includes the capacity to identify and attend to patients' physical, emotional,	A dedication to providing patient-centered treatment and an understanding of how crucial it is to take care of patients' physical, emotional,

<p>the physical, emotional, social, and spiritual facets of health and wellness.</p>	<p>social, and spiritual needs, to create and carry out patient-centered treatment plans that include promotional, preventive, curative, and rehabilitative aspects of care, and to work with interdisciplinary healthcare teams to deliver comprehensive and coordinated care.</p>	<p>social, and spiritual needs to promote optimal health outcomes.</p>
<p>Understanding safe and effective prescribing practices and pharmacology, including the mechanism of action, side effects, and contraindications of routinely prescribed medications.</p>	<p>Capability of prescribing medicines that are safe and efficient, considering patient-specific elements including age, gender, comorbidities, and medication history, as well as cost-effectiveness and probable side effects. having the ability to adhere to prescribed dosage, interaction, and contraindication restrictions</p>	<p>a dedication to patient safety and an understanding of the significance of providing drugs that are both cost-effective and safe. a readiness to monitor and manage medication-related side effects and interactions as well as a grasp of the potential influence of drugs on patient outcomes.</p>
<p>a working knowledge of human psychology, including the influence of psychological and social factors on health outcomes and the fundamentals of</p>	<p>Ability to identify and evaluate psychosocial elements that could affect a patient's health outcomes, to create and carry out efficient management strategies</p>	<p>A dedication to offering evidence-based care that considers these aspects and awareness of the influence of psychological and social</p>

psychological assessment and intervention.	that include social and psychological interventions, and to work together with mental health experts to deliver complete care.	factors on health outcomes.
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## General Modular Outcomes:

General and specific Learning objectives are provided by the Khyber Medical University, for the details of the Specific learning objectives please visit the following link <https://www.kmc.edu.pk/curriculum/>

## First Year MBBS

### General Learning Outcomes of Foundation Module

#### Knowledge

1. Familiarize with the MBBS system-based curriculum
2. Recognize the role of different disciplines in studying the human body and its diseases.
3. Describe the structure, function and biochemical composition of a cell.
4. Describe the cell division, its types and genetic material along with its clinical correlation.
5. Describe the basic organization of the human body.
6. Explain the maintenance of homeostatic mechanism.
7. Describe the various stages of pre-embryonic human development and correlate them with various malformations.
8. Describe the importance of buffer and PH system.
9. Describe various cellular adaptations during cell growth, differentiation and cell injury.

#### Skills

1. Describe the basic laboratory techniques and use of microscope.
2. Follow the basic laboratory protocols.
3. Perform biochemical analysis of carbohydrates.

#### Attitude

1. Follow the basic laboratory protocols.
2. Participate in class and practical work efficiently.
3. Maintain discipline of the college.
4. Follow the norms of the college properly.

5. Communicate effectively in a team with colleagues and teachers.
6. Demonstrate professionalism and ethical values in dealing with patients, cadavers, colleagues and teachers.
7. Communicate effectively in a team with colleagues and teachers.
8. Demonstrate the ability to reflect on the performance.

## **General Learning Outcomes of Blood & Immunology Module I**

### **COGNITIVE DOMAIN**

1. Identify & describe the various cellular and non-cellular components of blood in relation to its Anatomy, Physiology & Biochemistry
2. Describe the structure, synthesis and degradation of Hemoglobin
3. Describe the regulatory mechanisms of normal hemostasis and coagulation
4. Describe the conditions associated with the dysfunction of cellular and non-cellular components of blood
5. Describe the basic characteristics of the immune system.
6. Discuss the structure, functions and biochemical aspects of the Lympho-reticular system.
7. Explain the principles and clinical significance of ABO/RH blood grouping system
8. Explain the pathophysiology of various bleeding disorders
9. Identify the role of pharmacology in anemia and bleeding disorders.

### **PSYCHOMOTOR DOMAIN**

Description of the psychomotor skills to be developed and the level of performance required:

**By the end of BLOOD Module, the student should be able to:**

1. Carry out practical work as instructed in an organized and safe manner
2. Make and record observations accurately.
3. Identify slides of Lymph node, thymus, tonsils and spleen under a microscope
4. Identify slide of Gut-associated lymphoid tissue
5. Determine the percentage of formed blood elements.
6. Identify RBC and should be able to do its counting-on-counting chamber and to know normal values. And also classify Anemia morphologically.

## General Learning Outcomes of musculoskeletal module

### Knowledge

By the end of this module, students should be able to:

1. Develop an understanding of the fundamental components of the musculoskeletal system.
2. Explain the structure & function of the musculoskeletal (MSK) components of limbs and back.
3. Describe how injury and disease alter the MSK structure & function.
4. Integrate concepts relating to various metabolic processes, their disorders and relevant lab investigations in the study of human MSK system.
5. Describe the role of the limbs (upper/lower) in musculoskeletal support, stability and movements.
6. Describe the development of the limbs & correlate it with organization and gross congenital anomalies of the limbs.
7. Identify the anatomical features of bones, muscles & neurovascular components of the limbs and correlate them with their functions, injuries and clinical problems.
8. Describe the types, formation, stability, function & clinical significance of joints of the upper and lower limb.
9. Describe the basic histology of muscle fibers including its molecular structure (Sarcomere).
10. Explain the mechanism of excitation and contraction of skeletal and smooth muscles.
11. Describe the basis for the use of therapeutic agents to modulate neuromuscular transmission.
12. Describe the general principles of MSK pain management.
13. Describe ergonomics and its principles. Prevention of different MSK disorders.
14. Interpret the mechanism of post-mortem rigidity. (spiral II)
15. Give an overview of pathology of bones, muscles and joints.
16. Explain the role of different minerals, hormones and specific metabolic products related to the musculoskeletal system and correlate them with their relevant clinical metabolic disorders.
17. Interpret the relevant laboratory investigations for diagnosis of common musculoskeletal disorders. (Spiral two)
18. To develop the critical thinking and analysis in the context of various case scenarios pertaining to locomotors system.

### Skills

By the end of this module, it is a core objective that students should have acquired the following skills:

1. Demonstrate the anatomical structures of the limbs in a dissected cadaver/Model/prosected specimen & X-ray.
2. Demonstrate the provision of first aid measures in case of a limb fracture.
3. Communicate effectively in a team with colleagues and teachers.

### Attitude

While not necessarily taught explicitly, students are expected to develop following attitudes throughout the course:

1. Demonstrate respect and care for the cadaver and prosected parts.



2. Demonstrate humbleness and use socially acceptable language during academic and social interactions with colleagues and teachers.
3. Make ethically competent decisions when confronted with an ethical, social or moral problem related to MSKS in professional or personal life.
4. Discuss ethical issues social and preventive aspect of health care in the context of MSK system.
5. To create awareness about the ethical, social and preventive aspect of health care in the context of locomotor system.

## **General Learning Outcomes of CVS Module**

At the end of this module, the students will be able to;

- 1) Describe the structure and surface markings of the heart, valves and great vessels
- 2) Describe the steps of development of the heart
- 3) Describe the steps of development of arterial, venous and lymphatic system
- 4) Describe the conduction system of the heart
- 5) Describe the anatomy of the valves of the heart
- 6) Describe the microscopic structure of the myocardium, and blood vessels
- 7) Describe the cardiac cycle
- 8) Discuss cardiac output and venous return
- 9) Discuss blood pressure and its regulation
- 10) Discuss the coronary circulation and diseases associated with it
- 11) Describe the mechanisms and types of circulatory shock and associated compensatory mechanisms
- 12) Describe the anatomy and common pericardial diseases
- 13) Describe the cardiac enzymes
- 14) Discuss the hyperlipidemias and the roles lipoproteins and cholesterol in the development of atherogenesis
- 15) Describe the mechanisms of impulse generation, conduction and excitation of myocardium
- 16) Discuss normal ECG and common ECG abnormalities
- 17) Enlist the drugs used in ischemic heart disease and hyperlipidemias
- 18) Describe preventive strategies of cardiovascular diseases

## General Learning Outcomes of Respiration Module

By the end of this module the students will be able to;

- 1- Describe the anatomy and abnormalities of the thoracic cage
- 2- Describe the development and gross anatomy of the diaphragm
- 3- Describe the contents of the mediastinum and their relations
- 4- Describe the anatomy of pleura and its reflections
- 5- Describe the gross and microscopic structure, development, nerve supply and blood supply of the trachea, bronchi and lungs
- 6- Describe the epithelia and connective tissues lining the respiratory passageways.
- 7- Describe pulmonary ventilation
- 8- Discuss the mechanisms of gaseous exchange between alveoli, and blood and blood and tissues
- 9- Elaborate the transport of gases in the blood
- 10- Describe the mechanisms of regulation of respiration
- 11- Define hypoxia and cyanosis
- 12- Describe the effect of ageing on the respiratory system
- 13- Describe glycolysis
- 14- Describe the processes of Krebs cycle
- 15- Describe the mechanisms of biological oxidation
- 16- Describe the mechanisms of energy production in the body
- 17- Describe the mechanisms of O<sub>2</sub> and CO<sub>2</sub> transport in the blood
- 18- Classify anti-asthmatic and anti-tuberculous drugs
- 19- Describe the types and signs of asphyxia
- 20- Enlist the causes and signs of pneumonia, bronchial asthma, tuberculosis, Acute Respiratory Distress Syndrome (ARDS), and pulmonary oedema
- 21- Describe the parameters of Pulmonary Function Tests (PFTs)

## SECOND YEAR MBBS:

### **General learning outcomes of Neuroscience-1A**

At the end of this module, the 2<sup>nd</sup> year MBBS students will be able to:

- 1) Explain the gross and microscopic structural and functional features of peripheral nerves, spinal cord and brain.
- 2) Describe the development of forebrain, midbrain and hindbrain
- 3) Describe the basic functions of synapses, neurotransmitters and mechanisms of electrical events during neuronal excitation
- 4) Explain the structure and functions of different receptors during neuronal excitation
- 5) Describe the mechanisms and pathways of sensory inputs in the nervous system
- 6) Explain the organization, structure, functions, and neurotransmitters of autonomic nervous system
- 7) Describe the blood supply and venous drainage of brain and spinal cord
- 8) Describe the organization, structure and functions of motor system of the brain and spinal cord
- 9) Explain the organization, structure and functions of cerebellum and basal ganglia
- 10) Explain the structure, formation and drainage of cerebrospinal fluid in the brain and spinal cord
- 11) Describe the functions of limbic system and reticular activating system
- 12) Describe the pathophysiology and prevention of common diseases like stroke, epilepsy, hydrocephalus and brain injuries
- 13) Identify the microscopic structure of spinal cord, cerebral and cerebellar cortex
- 14) Examine nervous system of a standardized patient (sensations, motor functions, and higher cortical functions and tendon reflexes)

## **General learning outcomes of Neuroscience-1B**

At the end of this module, the 2<sup>nd</sup> year students will be able to:

- 1) Describe the structure of vertebrae, skull bones palate, pharynx, larynx, facial bones and base of the skull
- 2) Describe the contents walls and boundaries of anterior and posterior triangles of the neck
- 3) Describe the structure, relation, blood supply and venous drainage of thyroid
- 4) Describe the arteries, veins and nerves of the neck including cervical plexuses
- 5) Describe the nuclei, course, relations, and structures supplies by all cranial nerves
- 6) Describe the origin, course, relations and structures supplies by the arteries, veins and lymphatics of head and neck
- 7) Describe the anatomy of all the muscles of facial expression and head and neck
- 8) Describe the structure and functions of eye, ears, nose and paranasal sinuses
- 9) Describe the development of different structures of organs of the head and neck.
- 10) Identify the microscopic structure of salivary glands and tongue.
- 11) Examine a standardized patient`s cranial nerves.
- 12) Demonstrate Perimetry and Audiometry

## **General learning outcomes of GIT Module**

At the end of this 6 weeks` module, the 2<sup>nd</sup> year students will be able to:

- 1) Describe the anatomy of oral cavity with respect to GI functions
- 2) Elaborate the structure and functions of salivary glands
- 3) Describe the structure and development of esophagus, stomach, small intestine and large intestine
- 4) Describe the anatomy of peritoneum and mesentery
- 5) Explain the movements, functions and regulations of gastrointestinal functions
- 6) Describe the structure, development and functions of hepatobiliary system and pancreas

- 7) Discuss the mechanisms of digestion and absorptions of carbohydrates, proteins, fats and other nutrients
- 8) Describe different physiological reflexes occurring upon stimulation of gastrointestinal organs
- 9) Discuss the chemistry and functions of gastrointestinal hormones
- 10) Describe common pathological conditions like peptic ulcers, viral hepatitis, obstructive jaundice, carcinoma of esophagus and colorectal cancers
- 11) Explain the metabolic processes related to carbohydrates, fats and protein metabolism
- 12) Describe the components of medical ethics
- 13) Explain research ethics, research misconduct and plagiarism
- 14) Explain the psychosocial aspects of common psychiatric and functional bowel disorders

### **General learning outcomes of Reproduction module**

- 1) Describe the development, structure and functions of bony pelvis, uterus, ovaries and perineum
- 2) Describe the development, structure and functions of mammary glands
- 3) Explain the contents and mechanism of formation of milk
- 4) Describe the development, structure and functions of male genital organs
- 5) Explain the synthesis, mechanism of action, physiological effects and regulation of sex hormones in males and females and hormones released from placenta
- 6) Describe the physiology of gestation and parturition
- 7) Describe basic statistical tests and their significance
- 8) Describe the concept of empathy as part of professionalism
- 9) Explain the steps of research evaluation, its validity and reliability

## **THIRD YEAR MBBS:**

### **General learning outcomes of Foundation-2 Module**

1. Define pathology, its different branches and enumerate clinically important bacteria.
2. Describe the structure of bacterial cell and mechanisms by which they cause the disease.
3. Describe methods used to identify different microbes in laboratory and explain the interventions employed to prevent infections including vaccines.

4. Describe cell injury, its different mechanisms and sub cellular responses to cell injury.
5. Describe necrosis, apoptosis and adaptive changes seen in clinical settings and its identification in surgical specimens.
6. Define common terms related to Pharmacology.
7. Describe the basic principles of pharmacokinetics and pharmacodynamics and apply these principles to clinical practice as they relate to drug absorption, distribution, metabolism, excretion, mechanism of action, clinical action and toxicity.
8. Describe the cellular and biochemical sites where drugs bind to act.
9. Describe the general principles of drug interactions in relation to clinical practice.
10. Describe the process of new drug development.
11. Identify different dosage forms of drugs.
12. Demonstrate searching accurate information quickly in a formulary.
13. Demonstrate administration of a drug through intramuscular and intravenous routes.
14. Write down the basic format of drug prescription and describe the general principles of prescribing drugs.
15. Write correctly medical abbreviations used in clinical practice.
16. Identify commonly used equipment's in pharmacy.
17. Describe Forensic medicine, its different branches and importance.
18. Describe law and its various components
19. Explain medicolegal system and legal procedure for a doctor.
20. Describe the contents of medical jurisprudence.
21. Describe the diagnosis of death and WHO death certificate
22. Describe different refractive errors and its management.
23. Explain causes of watery eyes in both infants and elders and its management.
24. Describe the basic concept of health, disease and primary health care.
25. Demonstrate different pathological laboratory procedures and identify gross and microscopic features in the given specimens.
26. Demonstrate professionalism, respect, honesty and compassion by behaving in a courteous manner with colleagues and teachers during course activities like long lectures, SGDs and Practicals.
27. Describe the PMC code of Ethics
28. Describe the steps of process of developing a research protocol

## **General learning outcomes of Infection & Inflammation Module**

1. Describe the process of acute & chronic inflammation with their outcomes
2. Relate different aspects of healing and repair
3. Differentiate common pathogenic bacteria based on morphology, pathogenesis & lab diagnosis.
4. Relate bacterial pathogenic factors to clinical manifestations of common infectious diseases.
5. Describe the pharmacological details of anti-inflammatory drugs
6. Apply/relate the pharmacokinetics & pharmacodynamics of chemotherapeutic agents to their use in infectious diseases
7. Construct / Write prescriptions for various inflammatory and infectious diseases
8. Describe medico-legal aspects of HIV patients.
9. Describe the mechanism of wound causation.
10. Describe medico-legal aspects of parameters used for personal identification in real life situation
11. Apply parameters of a person's identification in a simulated environment
12. Describe the epidemiology of common infectious diseases.
13. Explain the preventive and control measures for infectious diseases.
14. Explain the control & preventive measures for nosocomial infections.
15. Describe the risks associated with hospital waste and its management.

## **General Learning Objectives of Multisystem-1 module**

1. Explain the functional organization of Autonomic Nervous system (ANS)
2. Describe the basic and clinical pharmacology of drugs acting on the ANS
3. Describe anticancer drugs
4. Describe the basic and clinical pharmacology of Eicosanoids.
5. Describe the basic and clinical pharmacology of drugs used for common skin problems.
6. Describe the clinical uses of some popular herbal medications.
7. Describe single Gene Disorders, cytogenetic disorders and different mutations
8. Describe the molecular Genetics Diagnosis
9. Define neoplasia and nomenclature of tumours
10. Describe characteristics of benign and malignant tumors
11. Describe epidemiology of cancer
12. Describe carcinogens, their types and clinical aspects of neoplasia
13. Describe diagnosis of cancer, grading and staging of tumors
14. Describe pathways for tumor spread and tumor immunity
15. Describe the protocols and procedures of autopsy.

16. Describe Thanatology and its medicolegal implications.
17. Describe general principles of Toxicology and their role in medicolegal sciences.
18. Describe the fundamentals of Research Ethics

## **General Learning Outcomes of Blood and Immunology Module**

**By the end of Blood & Immunology II Module, 3rd year MBBS students will be able to:**

1. Describe the pathophysiology and diagnosis of different types of anemia.
2. Explain the pathogenesis of different haematological malignancies.
3. Discuss the diagnostic approach to malignant haematological disorders.
4. Discuss the pathophysiology and diagnosis of bleeding disorders.
5. Explain the immune system of the body and its components.
6. Describe the mechanism of defence from infection.
7. Explain hypersensitivity and allergy.
8. Discuss the rationale for immunomodulation and its impact on improving the therapeutic dynamics of autoimmune disorders and malignancies.
9. Describe the drugs for treating various types of anemia.
10. Discuss the prevention and treatment of iron-deficiency anemia.
11. Describe the application of blood groups in Forensic work
12. Describe the examination of blood stains
13. Describe the medico-legal importance of blood as trace evidence
14. Describe the EPI schedule of Pakistan and the basic principles of Immunization.
15. Describe the most prevalent anaemia's that affect the population of Pakistan, and the risk factors for a vulnerable population.
16. Describe the most prevalent blood-borne infections that affect the population of Pakistan, and the appropriate preventive strategies including safe blood practice.

## **General Learning objectives of MSK-II Module**

### **Knowledge**



## **Reinforcement**

1. Explain important anatomical and physiological characteristics of musculoskeletal system

## **Pathology**

2. Explain essential pathological concepts of diseases involving

- Joints
- Bones
- Muscles
- Cartilages
- Soft tissues
- Skin

## **Pharmacology**

1. Describe the clinical applications of NSAIDs in the treatment of musculoskeletal disorders
2. Describe the basic and clinical pharmacology of drugs affecting bone and Mineral Homeostasis
3. Describe the basic and clinical pharmacology of drugs used to treat Gout and Rheumatoid Arthritis
4. Describe the basic and clinical pharmacology of skeletal muscles relaxants
5. Describe the drugs used for dermatological disorders.

## **Community medicine**

1. Classify accidents and injuries, burden of RTAs, prevention and control strategies of RTAs
2. Define poliomyelitis and discuss the epidemiology, prevention, and control of poliomyelitis
3. Define Ergonomics, Principles of Ergonomics, Epidemiology of MSK disorders and their prevention.
4. Discuss burden and prevention of Osteoporosis, Osteomalacia and Rickets

## **Forensic medicine**

1. Define and classify wounds
2. Describe types of hurt according to Qisas and Diyat Act
3. Describe firearm and explosives injuries
4. Describe RT As, Railway and Aircraft injuries

5. Describe the Medico legal aspects of wounds

### **Medicine**

1. Describe Osteoporosis and Osteomalacia and develop its management plan
2. Discuss Rheumatoid Arthritis and Ankylosing Spondylitis
3. Discuss Myopathies

### **Orthopedic**

1. Describe types of fracture and explain the open fractures
2. Explain the emergency treatment of an injured limb.
3. Identify and describe common benign and malignant bone tumours.
4. Describe common ligamentous, tendon injuries and common spinal fractures

### **Dermatology**

1. Describe the pathological lesions of skin and their clinical presentation with differential diagnosis.

### **Radiology**

1. Interpret normal X-Rays and X-Rays showing structural deformities

### **Paeds**

1. Explain bone pains and aches in children
2. Discuss Congenital/Hereditary Myopathies

### **Eye**

1. Describe the basic Anatomy of Eye ENT
2. Discuss anatomy of Ear, Nose, Para nasal Sinuses and Oral Cavity

### **Prime:**

### **Communication Skills**

1. Dealing with patients Behavioral Sciences / Professionalism
2. Attributes of Professionalism

### **Research**

1. Study Designs
2. Research question

**Skills:****Special Pathology**

1. Identify morphological features of Basal cell carcinoma and Squamous cell carcinoma
2. Identify morphological features of Tuberculous osteomyelitis

**Pharmacology**

1. Writing a prescription for a patient with Rheumatoid arthritis
2. Writing a prescription for a patient with Gout

**Forensic Medicine**

1. Identify types of mechanical wound
2. Identify the causative weapons
3. Identify the manner of wound causation
4. Issue a medico legal certificate for the given wound

**Orthopedic/Medicine**

1. Acquire a thorough history in relevance to MSK and take focused general examination of musculoskeletal system.
2. Identify, evaluate and interpret the X-ray to diagnose fractures/musculoskeletal conditions
3. Discuss the radiological characteristics of fractures and radiological characteristics of dislocations

**Attitude:**

While not necessarily taught explicitly, students are expected to develop following attitudes throughout the course:

1. Demonstrate teamwork, leadership, punctuality and good manners
2. Demonstrate humbleness and use socially acceptable language during academic and social interactions with colleagues and teachers.
3. Make ethically competent decisions when confronted with an ethical, social or moral problem related to MSK in professional or personal life
4. Discuss ethical issues, social and preventive aspect of health care in the context of MSK system.

**General Learning Objectives for Respiration-II Module**

**At the end of this module, students will be able to:**

1. Explain various lower respiratory tract infections
2. Explain obstructive respiratory diseases.
3. Describe various Granulomatous lung diseases
4. Prescribe medication according to guidelines for common respiratory disorders.
5. Describe medico legal aspect of asphyxial death.
6. Describe respiratory tract diseases of public health importance with emphasis on agent factors, epidemiology, preventive and control measures.
7. Describe management of common respiratory problems.

## **Fourth Year MBBS**

### **General Learning Objectives of Neurosciences module**

**By the end of NS II Module, 4th year MBBS students will be able to:**

- 1) Describe anxiety disorders and their pharmacological management.
- 2) Explain the concepts of Mood disorders and their pharmacological management.
- 3) Explain psychotic disorders and their pharmacological management.
- 4) Describe the pathophysiology and management of Dementias.
- 5) Elaborate the pathophysiology, clinical features, management, and prevention of cerebrovascular diseases.
- 6) Classify epilepsy and describe the pharmacological management of epilepsy in children and adults.
- 7) Describe the types and protocols of anesthesia and explain the drugs used as anesthetics.
- 8) Explain the pathology and clinical features of cerebellar diseases.
- 9) Elaborate the clinical features and pharmacological management of Parkinson`s disease.
- 10) Explain the clinical features and management of Motor neuron disease and Friedrich`s ataxia.
- 11) Describe the pathology and management of head injury.
- 12) Describe the pathogenesis, clinical features, and management of common CNS infections.
- 13) Classify brain, spinal cord, and peripheral nerves tumors, and describe

their clinical features and management. 14) Explain the pathophysiology, clinical features, investigations and management of Multiple sclerosis, transverse myelitis, and Guillain Barre syndrome. 15) Classify peripheral neuropathies and elaborate their etiologies and clinical presentations. 16) Explain the clinical features and forensic approach to a patient with neurotoxic poisons. 17) Explain the forensic aspects of insanity and head injury.

### **General Learning Objectives of Hepatobiliary-II Module**

**By the end of GIT-II Module, 4th year MBBS students will be able to:**

1. Describe the etiology, pathogenesis, morphology, clinical features, laboratory diagnosis, medical and surgical management of diseases of GIT & hepatobiliary system.
2. Interpret the liver function tests in different hepatic diseases.
3. Describe the basic and clinical pharmacology of drugs used in GIT & hepatobiliary diseases.
4. Write prescriptions for common GIT & hepatobiliary disorders.
5. Describe medico legal aspects of abdominal trauma.
6. Describe medico legal aspects of vegetable acid, corrosive and irritants poisoning.
7. Describe the epidemiology and prevention of malnutrition and viral hepatitis.
8. Analyze demographic processes in context of public health care.

### **Learning Objectives of Renal-II Module**

**By the end of Renal Module, 4th year MBBS students will be able to:**

1. Describe applied anatomy of Urinary System with video demonstration
2. Discuss physiology of the renal system
3. Describe the different Acid-base Disorders and the Mechanism for maintaining Acid-base Balance
4. Classify the diseases involving glomeruli, tubules, interstitium, renal blood vessels, Chronic nephron loss, Cystic, urine out flow obstruction, congenital-developmental and neoplastic diseases of renal system
5. Describe the etiology, pathogenesis, clinical manifestations, diagnosis, and prognosis of the renal system diseases.

6. Perform various practical's used in laboratory diagnosis of renal diseases.
7. Describe the Pharmacology of drugs used in the treatment of Renal System Diseases.
8. Describe ethics of Organ Transplantation.
9. Describe prevalence of renal diseases.
10. Describe the clinical features of renal diseases.
11. Diagnose & manage Acute & Chronic Kidney Disease, Nephrotic, Nephritic Syndromes, Urinary Tract Infections.
12. of Urinary Tract Infections, Chronic Kidney Diseases & Renal Transplant patients during Pregnancy.
13. Enumerate/Describe various renal diseases primarily effecting pediatrics age group.
14. Describe pathogenesis and management of renal stones.
15. Describe pathogenesis and management of bladder outlet obstruction.

### **Learning Objectives of Endocrine &. Reproduction Module**

**By the end of Endocrine & Reproduction Module, 4th year MBBS students will be able to:**

1. Describe the pathology, clinical features, investigations, and treatment of Hyper and hypopituitarism
2. Describe the pathology, clinical features, investigations, and treatment of Hyper and hypothyroidism, and hyper and hypoparathyroidism
3. Describe the classification, pathogenesis, clinical features, investigations, and treatment of Diabetes mellitus
4. Explain the pathology, clinical features, investigations, and treatment of Hyper and hypoadrenalism
5. Explain the causes of male and female infertility and its management
6. Explain the classification, pathology, and management of testicular tumors
7. Explain benign and malignant breast disease
8. Discuss the etiology, risk factors, clinical features, investigations, and treatment of carcinoma of breast
9. Describe the pharmacokinetics and pharmacodynamics of pituitary, gonadal, pancreatic, thyroid, and adrenocortical hormones, their synthetic analogues and antagonists, and their role in the management of relevant disease conditions

10. Formulate prescriptions for patients with Graves' disease and Diabetes mellitus
11. Discuss the laws related to sexual offenses, and management of a rape victim in forensic aspects
12. Explain the pathophysiology and surgical management of benign prostatic hyperplasia and carcinoma of the prostate

### **General Learning Objectives of ENT Module**

**By the end of ENT Module, 4th year MBBS students will be able to:**

1. Describe the anatomy and physiology of Ear, Nose, Throat & Neck.
2. Obtain appropriate history, examine Ear, Nose, oral cavity, pharynx, larynx and Neck including mirror examinations and functional examinations of these areas.
3. Describe benign and malignant tumors involving the ENT and Head & Neck.
4. Assist in diagnostic procedures and take swab for culture and sensitivity from ear, Nose & throat under supervision.
5. Prescribe hematological investigations, x-ray paranasal sinuses, CT/MRI scan of paranasal sinuses, temporal bone and Head & Neck & interpret it.
6. Perform clinical tests of hearing, tuning fork tests and balance independently
7. Interpret pure tone audiogram & tympanogram.
8. Describe the ABC protocol for resuscitation of traumatic patients.
9. Discuss differential diagnosis of membrane on the tonsils and describe diphtheria.
10. Describe sialadenitis, sialolithiasis and enumerate the benign and malignant salivary tumors.
11. Discuss a treatment plan for the patients with various common diseases of the ENT and Head and Neck region.
12. Describe dysphagia and its causes, Plummer-Vinson Syndrome and malignant tumors of hypopharynx that could lead to dysphagia and hoarseness along with their management.

12. Describe the management of corrosive ingestion and foreign body in the esophagus.
14. Describe various congenital and acquired disorders of the ENT and Head & Neck region.

### **General Learning Objectives of Eye Module**

**By the end of Eye Module, 4th year MBBS students will be able to:**

1. Describe the visual standards.
2. Define and classify blindness.
3. Describe the anatomy and physiology of visual pathway and different visual field defects.
4. Describe the basics and usage of optical coherence tomography (OCT), visual fields and ultrasonography in common eye disorders.
5. Differentiate different types of lid bumps and propose a management plan for it.
6. Discuss ptosis, ectropion and entropion and describe the treatment options.
7. Examine bulgy eyes and investigate different causes of it.
8. Describe the differential diagnosis of red eye.
9. Explain the pathophysiology, and management of different conjunctival inflammations.
10. Explain the pathophysiology, and management of different corneal inflammations.
11. Discuss the pathophysiology, and management of uveal inflammations.
12. Describe the aqueous humor dynamics and its role in glaucoma.
13. Enumerate different causes of gradual visual loss and propose their management plan.
14. Enumerate different causes of sudden visual loss (painful/painless) and propose their management plan.
15. Describe squint, its presentation and principles of management.
16. Enumerate different causes of double vision and propose their management plan.



# FINAL YEAR MBBS

## **General Learning Objectives of Foundation-III module**

- 1) Discuss the process of Evidence-based medicine/practice.
- 2) Explain the concepts and processes of patient safety and types of medical errors.
- 3) Explain the objectives and process of clinical audit and governance.
- 4) Discuss the principles of communications skills, counseling, and breaking bad news.
- 5) Discuss the psychological aspects of patient care in hospital and ambulatory care settings.
- 6) Explain the concepts of surgical skills, perioperative, intraoperative, and postoperative care.
- 7) Discuss the concepts of palliative and end-of-life care. 8) Explain the concepts of developmental assessment in pediatrics.

## **General Learning Objectives of Blood & Immunology-III Module**

- 1) Explain the etiology, clinical features, diagnostic workup, and management of a patient with Anemia.
- 2) Explain the etiology, clinical features, diagnostic workup, and management of a patient with anemia of pregnancy.
- 3) Explain the etiology, clinical features, diagnostic workup, and management of a patient with Leukopenia.
- 4) Explain the etiology, clinical features, diagnostic workup, and management of a patient with Leukocytosis.
- 5) Explain the management and complications of a patient with hematological malignancies.
- 6) Discuss the diagnostic workup of a patient with splenomegaly.
- 7) Explain the etiology, clinical features, diagnostic workup, and management of a patient with bleeding and clotting disorders.
- 8) Explain the etiology, clinical features, diagnostic workup, and management of a patient with anemia of pregnancy.

## **General Learning Objectives of Musculoskeletal-III Module**

1. Discuss the diagnostic and therapeutic approach to children and adult patients with arthritis's.
2. Explain the surgical management of different arthritic disorders.
3. Elaborate on the management of osteoporosis, Rickets, and Osteomalacia.
4. Explain the types of spine diseases and their management.
5. Explain the types, aetiology, clinical features, and management of primary muscle diseases including poliomyelitis
6. Discuss different dermatological conditions in terms of aetiology, classification, investigations, and management.
7. Take history and examine a patient with an arthritic condition
8. Counsel a patient with chronic arthritic condition, psoriasis, and muscular dystrophies.

### **General Learning Objectives of Cardiorespiratory Module**

1. Discuss the management of a patient with chest pain
2. Explain the management of patients with different types of ischemic heart diseases
3. Explain the management of patients with different types of arrhythmias
4. Discuss the management of traumatic chest injuries as a primary care physician
5. Explain the management of a patient with heart failure
6. Explain the management of patients with different types of Obstructive lung diseases
7. Discuss the management of pleural and pericardial diseases
8. Explain the diagnostic criteria and management of Bacterial endocarditis and Rheumatic fever and their complications
9. Explain the clinical features and management of cyanotic and acyanotic congenital and Valvular heart diseases
10. Discuss the management of cardiomyopathies and myocarditis
11. Explain the diagnostic workup and management of patients with different types of Pneumonias
12. Explain the management approach of a patient with Hypertension
13. Discuss the diagnostic approach and management of DVT and its prevention.

### **General Learning Objectives of Renal-III Module**

- 1) Discuss the diagnostic approach and management of an adult and a child with suspected glomerular disease.

- 2) Discuss the diagnostic approach and management of an adult and a child with acute and chronic renal disease.
- 3) Discuss the management of a patient with nephrocalcinosis.
- 4) Discuss the etiology, clinical features, and management of common electrolyte abnormalities.
- 5) Explain the diagnosis and management of a patient with hematuria and UTIs.
- 6) Explain the common diseases of the urogenital system.
- 7) Take history and perform a physical examination of urogenital system. 8) Counsel a patient with acute and chronic renal failure.

### **General Learning Objectives of Endocrine and Reproduction-III Module,**

1. Discuss the clinical conditions resulting in Tall/short stature and its management.
2. Discuss the clinical conditions causing Excessive thirst and Urination and its management.
3. Discuss the clinical conditions resulting in Infertility and its management.
4. Discuss pathophysiology of Pregnancy, its Management, and complications.
5. Discuss the development of fetus, its growth, and complications.
6. Discuss the pathophysiology of Obstetrics emergencies, its Management, and complications.

### **General Learning Objectives of Neurosciences-III Module**

1. Discuss the management approach to a patient with different types of Dementia
2. Discuss the management of common psychiatric disorders, autism, and substance abuse disorders
3. Explain the management of different types of strokes, and epilepsy
4. Discuss the management of different types of movement disorders
5. Explain the management of different intracranial infections
6. Discuss the management of intracranial space-occupying lesions and head injuries
7. Explain the management of common neuropathies and spinal cord diseases

### **General Learning Objectives of GIT-III Module**

- 1) Discuss the approach to the management of a patient with dysphagia and upper GI bleed.

- 2) Explain the approach to the management of a patient with pain epigastrium.
- 3) Discuss the management of a patient with acute and chronic hepatitis, liver cirrhosis, and encephalopathy.
- 4) Explain the management of a patient with acute and chronic diarrheas.
- 5) Discuss the management of a patient with peritonitis and intestinal obstruction.
- 6) Explain the management of a patient with constipation and lower GI bleeding.
- 7) Take history and perform a physical examination of a patient with GI diseases.
- 8) Counsel patients and their families with common GI diseases.

### **Learning Objectives of Multisystem-II Module**

1. Explain the etiology, risk factors, complications, and management of obesity
2. Explain the classification, etiology, risk factors, and management of PCM
3. Explain the risk factors, clinical features, investigations, and treatment of common water-soluble and fatsoluble vitamins
4. Explain the concepts of nutritional support both in the hospital and community settings
5. Explain the risk factors, clinical features, complications, and management of Anorexia nervosa and Bulimia nervosa
6. Discuss the management of common household poisoning including natural gas and snake bites
7. Explain the management of heat and cold-related disorders
8. Discuss the high-altitude sickness, decompression sickness, drowning, and electrocution.
9. Discuss chromosomal abnormalities, their clinical features, and the concepts of genetic counselling
10. Discuss the management of different autoimmune disorders and vasculitides in children and adults and their complications.

## **Learning and Teaching Activities:**

### **Instructional strategies for integrated curriculum:**

Active learning as described by educational researchers is based on the fact that learning is an active process, and that different people learn in different ways (says, 1970). Our college makes sure that different teaching strategies are used to allow students to participate actively. Following the standard 6.2 of WFME we provide appropriate clinical resources by using different approaches (Federation & Medical,

2020, p. 24). Our College follows the Standard 5 “Educational Content” of PMC, we make sure the learning objectives of the content taught and is aligned with the assessment appropriately(PMC, 2021, p. xxiv)

Different approaches are preferred, including:

1. Large Group Format
2. E-Lecture
3. Small Group Discussions
4. Problem-based-learning
5. Task-based-learning
6. Case-based-learning
7. Peer-assisted learning
8. Role-play
9. Tutorials
- 10.Seminars
- 11.Self-Directed Learning
- 12.Lab Works
- 13.Group Assignments
- 14.Bedside Teaching
- 15.Ward Rounds
- 16.Community Work
- 17.Skill Lab Teaching

### **Large Group Format (LGF):**

It is a teacher-centred approach in which a class size of 25 or more students, often in a big lecture hall setting. A large group of students are taught through different teaching strategies involving peer teaching, brainstorming, cooperative learning, etc. (Fabiana Meijon Fadul, 2019, p. 44)

### **E-Lecture/ Distant Learning**

In a large group format, the students are engaged through various teaching strategies. For example, Powerpoint presentations, Breakout rooms, Online videos, graphics, Q&A sessions. Various tools like Zoom, Google Classroom, Kahoot, Socrative, Tedtalks & Pedlet can be used to achieve the learning objective. (Fabiana Meijon Fadul, 2019, p. 101)

### **Small Group Discussion (SGD):**

It is a student-centred methodology, that allows students to be actively involved, and interact with the peers and instructor, sharing and discussing different ideas. (Fabiana Meijon Fadul, 2019, p. 52)

### **Problem-Based Learning (PBL):**

The problem is provided to the students; they use triggers from it and derive their learning objectives this learning results in the problem's solution. It is based on two sessions. Students work independently, and it's self-directed learning. The tutor plays a silent role. (Fabiana Meijon Fadul, 2019, p. 134)

### **Task-based-learning (TBL):**

The task is provided to the students, and they end up learning those generic competencies for which the study was provided. (Harden et al., 1996, pp. 1–2)

### **Case-based-learning (CBL):**

Specific learning objectives are provided to the learners; a small group discussion format helps the learners to work in a group and answer the questions relating to the knowledge gained in the teaching session. (Williams, 2005, pp. 1–2)

### **Peer-assisted learning (PAL):**

It has two different types Near-Peer-Assisted learning & Peer-Assisted Learning. In this strategy, the instant seniors or the class-fellows are helpers in learning. (Fabiana Meijon Fadul, 2019, p. 345)

### **Role-play:**

Role plays can be effectively used in the classroom to provide real-world scenarios to help students learn. Role-play can be used in teaching different behaviors in a medical setup to motivate learning. (Northern Illinois University Center for Innovative Teaching and Learning, 2012a)

### **Tutorial:**

It is a teaching session given to one student or a small group of students; teachers lead classes, but tutors are educators who also help students, usually one on one or in a group format.

### **Seminar:**

It is a form of academic instruction either at an academic institution or offered by a commercial or professional organization. It has the function of bringing together small

groups for recurring meetings, focusing each time on some particular subject, in which everyone present is requested to participate.

### **Self -Directed Learning (SDL):**

It is a process where individuals take primary charge of planning, continuing & evaluating their learning experiences. In an SDL the responsibility to learn shifts from the teacher to the student.

### **Lab Works:**

The Laboratory Method is a planned learning activity dealing with original or raw data in the solution of problem. It is a procedure involving first hand experiences with materials or facts derived from investigations or experimentation.

### **Group Assignments:**

The Group assignment allows teachers to set an assignment which a group can work on collaboratively, and receive a common grade and feedback. Before adding a group assignment in your course, you have to split the students into different groups this will also enhance the teamwork, communication and collaboration of the students.

### **Bedside Teaching:**

Bedside teaching is a vital component of medical education and one of the most effective ways to learn clinical and communication skills. Bedside teaching is defined as teaching in the presence of a patient. This will have a great impact on the clinical skills and the communication skills. (Fabiana Meijon Fadul, 2019, p. 58)

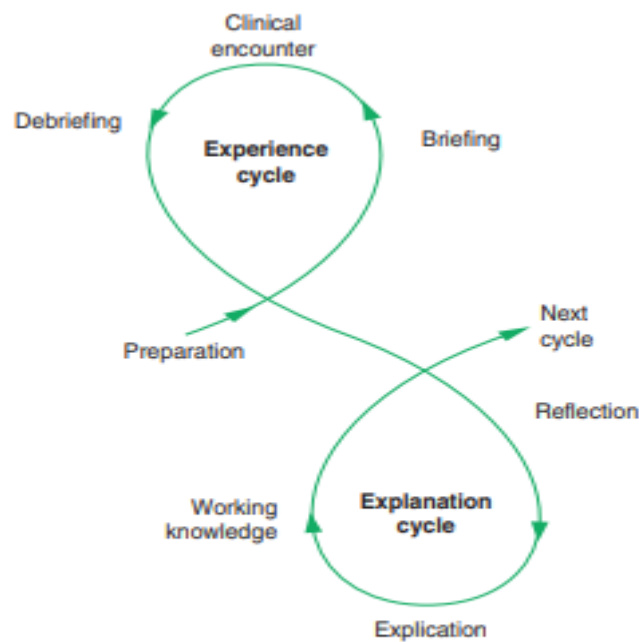
### **Different Models Are Recommended for Bedside Teaching:**

Models for effective bedside teaching have been described specifically for ward-based and ambulatory teaching, many of these educational principles and strategies can be adapted for different clinical settings. (Fabiana Meijon Fadul, 2019, pp. 60–61)

1. COX'S CYCLE
2. MIPLAN

#### **I. COX'S CYCLE:**

A linked two-cycle model has been described (Cox, 1993) to maximize the students' learning from each patient contact. (Fabiana Meijon Fadul, 2019, pp. 60–61)



**Fig. 9.1** Experience and explanation cycles.

*(redrawn from Cox, 1993, with modifications).*

(DOPS, Mini Cex, SNAP, VOPS)

## II. MIPLAN:

Stickrath and colleagues described a three-part model for efficient bedside teaching (Stickrath et al., 2013):

- **M:** meeting between teacher and learners to get acquainted, set goals, clarify expectations
- **I:** five teaching behaviours at the bedside:
  - introductions: introducing the team to patients and orienting them to the agenda
  - in the moment: focused listening
  - inspection: observation of patient and engagement of entire team
  - interruptions: minimizing them
  - independent thought: encouraging clinical reasoning.
- **PLAN:** algorithm for teaching after bedside presentations
  - patient care: clarification of clinical findings, role-modelling
  - learners' questions: responding to questions
  - attending's agenda: teaching points, referring to relevant literature



- next steps: debriefing, feedback, questions for further learning.

## **Ward Rounds**

Ward rounds are critical to smooth flow of the patient journey as they are the key method by which patients in the hospital are systematically reviewed by the multidisciplinary team that includes the students that review each patient under the care of their consultant and trainees of the hospital. During the ward round the current status of each patient is established and the next steps in their care plan. (Fabiana Meijon Fadul, 2019, p. 58)

### **The recommended model for Ward Teaching: Peyton’s four-step approach**

A model that is becoming increasingly prevalent in medical education is “Peyton’s four-step approach”, which consists of four clearly defined instructional steps:

Step 1 – “Demonstrate”: The trainer demonstrates the skill at a normal pace and without additional comments.

Step 2 – “Talk the trainee through”: The trainer demonstrates the respective skill while describing each procedural substep in detail.

Step 3 – “Trainee talks trainer through”: The trainer performs the skill for a third time, based on the substeps described to him by the trainee.

Step 4 – “Trainee does”: The trainee performs the skill on his/her own. (Krautter et al., 2015)

## **Community Work**

Teaching and learning communities are communities of practice in which a group of faculty and staff from across disciplines regularly meet to discuss topics of common interest and to learn together how to enhance teaching and learning. (Fabiana Meijon Fadul, 2019, p. 68)

## **Skills Lab Teaching**

A Skills lab is a learning resource centre that provides an environment for learning clinical skills where students can practise without jeopardizing patient care or provoking adverse effects. In the skills lab students practise basic and advanced nursing skills supervised by faculty members. Various skills are practiced using

simulated patients and videos. Interactive lecture sessions, discussions, demonstration of skills, practise on manikins, case studies, presentations, videos are some of the teaching methods used. (Fabiana Meijon Fadul, 2019, p. 92)

## Teaching Strategies for Specific Years of MBBS

MBBS Course Teaching Sessions Overview	
Class	Teaching sessions
1 <sup>st</sup> Year	<ul style="list-style-type: none"> <li>• LGF</li> <li>• E-Lecture</li> <li>• SGD</li> <li>• PBL</li> <li>• PAL</li> <li>• TBL</li> <li>• SDL</li> <li>• Lab Works</li> <li>• Group Assignments</li> <li>• Seminars</li> <li>• Tutorials</li> </ul>
2 <sup>nd</sup> Year	<ul style="list-style-type: none"> <li>• LGF</li> <li>• SGD</li> <li>• PBL</li> <li>• PAL</li> <li>• TBL</li> <li>• SDL</li> <li>• Skills Lab</li> <li>• Lab Works</li> <li>• Seminars</li> <li>• Tutorials</li> <li>• Group Assignments</li> </ul>
3 <sup>rd</sup> Year	<ul style="list-style-type: none"> <li>• LGF</li> <li>• SGD</li> <li>• CBL</li> <li>• PAL</li> </ul>

	<ul style="list-style-type: none"> <li>• TBL</li> <li>• SDL</li> <li>• Bedside Teaching</li> <li>• Ward Rounds</li> <li>• Community Work</li> <li>• Skills Lab Visits</li> <li>• Lab Works</li> <li>• Seminars</li> <li>• Tutorials</li> <li>• Group Assignments</li> </ul>
4 <sup>th</sup> Year	<ul style="list-style-type: none"> <li>• LGF</li> <li>• SGD</li> <li>• CBL</li> <li>• PAL</li> <li>• TBL</li> <li>• SDL</li> <li>• Bedside Teaching</li> <li>• Ward Rounds</li> <li>• Community Work</li> <li>• Skills Lab Visits</li> <li>• Lab Works</li> <li>• Seminars</li> <li>• Tutorials</li> <li>• Group Assignments</li> </ul>
Final Year	<ul style="list-style-type: none"> <li>• LGF</li> <li>• SGD</li> <li>• CBL</li> <li>• PAL</li> <li>• TBL</li> <li>• SDL</li> <li>• Bedside Teaching</li> <li>• Ward Rounds</li> <li>• Community Work</li> <li>• Skills Lab Visits</li> </ul>

	<ul style="list-style-type: none"><li>• Lab Works</li><li>• Seminars</li><li>• Tutorials</li><li>• Group Assignments</li></ul>
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## Assessment:

### Constructive Alignment:

Our college follows the constructive alignment in which the assessment is aligned with the learning objectives and the teaching strategies. Our college has the definite assessment policy and an Exam Cell for the assessment of Formative exams of MBBS program. However, the Summative Professional Examinations are conducted by the KMU <https://kmu.edu.pk/examination/news>. We support the WFME standards that include 3.1, 3.2, 3.2, 3.4 of Standard-3 Assessment. Our college is also fulfilling the Standard 7 of Assessment of PMC.

### Formative & Summative Assessment:

There are two forms of assessments: formative and summative. These are described below:

#### Formative Assessment:

Formative assessment has been defined as “activities undertaken by teachers and by their students in assessing themselves that provide information to be used as feedback to modify teaching and learning activities” (Black & Wiliam, 2010, p. 82).

Formative assessments also inform students

- about what the learning goal is,
- where the students are in relation to that learning goal,
- what can be done to improve subsequent performance (Black & Wiliam, 2010; Sadler, 1989).

Although formative assessments can be graded (e.g., quizzes), evaluations of these assessments usually are not factored into final grades (i.e., summative assessments) because the focus is on assessing student understanding and teaching effectiveness (Faculty Development and Instructional Design Center).

## **Principles of Feedback:**

Direct observation and clear goals are needed in the provision of effective feedback, with good performance being reinforced, and poor performance being corrected. Although the provision of constructive feedback detailing both positive and negative aspects of the learner's performance can be time-consuming and difficult, not giving feedback can have a substantial negative effect. Feedback must be non-judgmental and descriptive. There are many key principles to consider when conducting effective feedback. Namely, feedback should be:

1. Planned, considering the place, timing and environment
2. Explicit
3. Descriptive
4. Focused on behaviour, not personality
5. Specific
6. Concise
7. Verified by the recipient
8. Honest

The success of a feedback session is dependent on **three broad areas**: structure, format, and content, as outlined below

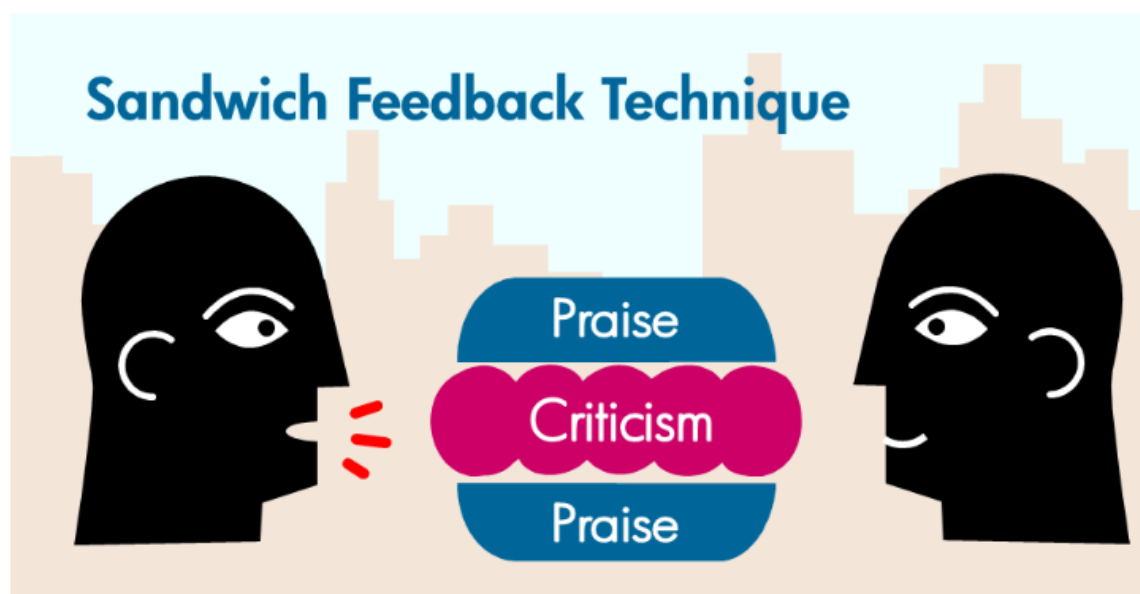
Structure
• Schedule the feedback session at convenient time for teacher and student
• Make the purpose of meeting clear
• Seating arrangement in the room should show the teacher as a 'participant' e.g. round table
• Feedback should focus on observed knowledge, attitudes and behaviours
• The format of the session should include self-assessment, teacher assessment and joint development of an action plan
Format
• The aim of the feedback session is to improve student performance - make this clear
• Session structure should be made clear - student self-assessment, teacher assessment, joint development of an action plan
• Use an appropriate feedback model e.g. Pendleton's positive critique method
• It is important to both give positive feedback and areas requiring improvement
• The assessor should provide examples and strategies for improvement
Content
• Teachers and students need time to prepare respective content for the session
• The learner should assess their own learning objectives for the clinical placement, including formal objectives and personal objectives
• The teacher should prepare for the session by making direct observations of the student's performance, and gaining feedback from others on the team
• The teacher should review notes and only select a few points to cover

## Sandwich Technique:

The sandwich feedback technique uses positive reinforcement followed by constructive criticism. The sandwich feedback method, in other words, entails talking about corrective feedback that is "sandwiched" between two layers of praise.

It is claimed that using this strategy has two advantages:

- (1) it reduces the impact of criticism or corrective feedback, and
- (2) because praising a trainee/student is more comfortable for the seniors, doing so makes it simpler for the Seniors to discuss issues with the student's behaviours (Nagesh Belludi, 2019)



## Pendleton Feedback Model:

The Pendleton Feedback Model, which serves as a framework for organising efficient and meaningful dialogues, lowers the obstacles to providing useful feedback by promoting self-reflection and proactive problem-solving. It's crucial to keep in mind that this model tries to facilitate a real interaction that empowers the employee rather than pushing a robotic and planned feedback session. It can be used in conjunction with other employee check-in and feedback forms to provide you a clear picture of your staff members' performance and welfare.

**Step 1:** The employee is asked to think back on how they feel their performance went, paying particular attention to:

- Initially, what they felt went well.
- followed by what they believe could be improved.

**Step 2:** After hearing what was said, the manager should intervene and address the following:

- First off, they concur with the employee's evaluation of themselves.
- Next, and most significantly, they must identify any areas of disagreement.

The conversation structure for both sides might sound something like this:

- "What did you believe worked well?"
- What could be done differently, in your opinion?
- What could yet be enhanced?
- "How is this accomplished?"

## Summative Assessments:

*"Cumulative Assessments has intended to capture what a student has learned, or the quality of the learning, and judge performance against some standards" (National Research Council, p. 25).*

Unlike formative assessments, which are generally used for providing feedback to students and teachers, summative assessments are generally "high stakes" assessments and used to get a final assessment of how much learning has taken place—that is, how much does a student know (Gardner, 2010).

Summative assessments are almost always graded, are typically less frequent, and occur at the end of segments of instruction. At the end of the session KMCU is the regulatory body for Summative Examinations of the MBBS programme.

Examples of summative assessments are final exams, state tests, college entrance exams (e.g., MDCAT, GAT, GRE & SAT), final performances, and term papers. Typically, if a student performs satisfactorily, no more formal learning on the assessed subject occurs after a summative assessment, except in the case of a cumulative final examination. In addition to their role in determining a student's level of success or proficiency at a particular time, summative assessments are also used to determine eligibility for special programs (e.g., gifted and talented education), to assess if a student should advance to the next grade level, to provide career guidance, or to assess qualifications for awards (Harlen & Gardner, 2010)

## **Summative Assessment Tools:**

The following summative assessment tools are suggested:

### **Multiple Choice Question (MCQ):**

An assessment item known as a multiple-choice question (MCQ) consists of a stem the question or problem — followed by a list of potential answers, often known as options and distractors. Barry (2020)

### **Objective Structured Clinical Exam (OSCE):**

OSCE stands for "Objective Structured Clinical Examination." OSCEs are very helpful in medical education because they allow a student to practice and demonstrate clinical skills in a standardized medical scenario. Struijk (2023)

### **Objective Structured Practical Exam (OSPE):**

The objective structured practical examination (OSPE) is used as an objective instrument for assessment of laboratory exercises in preclinical sciences, particularly physiology, anatomy & Biochemistry. Nayar et al. (1986)

### **Long Cases:**

An undergraduate student, trainee, or junior professional discusses a particular case with a senior professional as part of a long case, a type of clinical examination. As implied by the name, each scenario in a long case normally lasts at least 20 minutes, however it may last longer depending on the circumstances (Griffin, 2021)



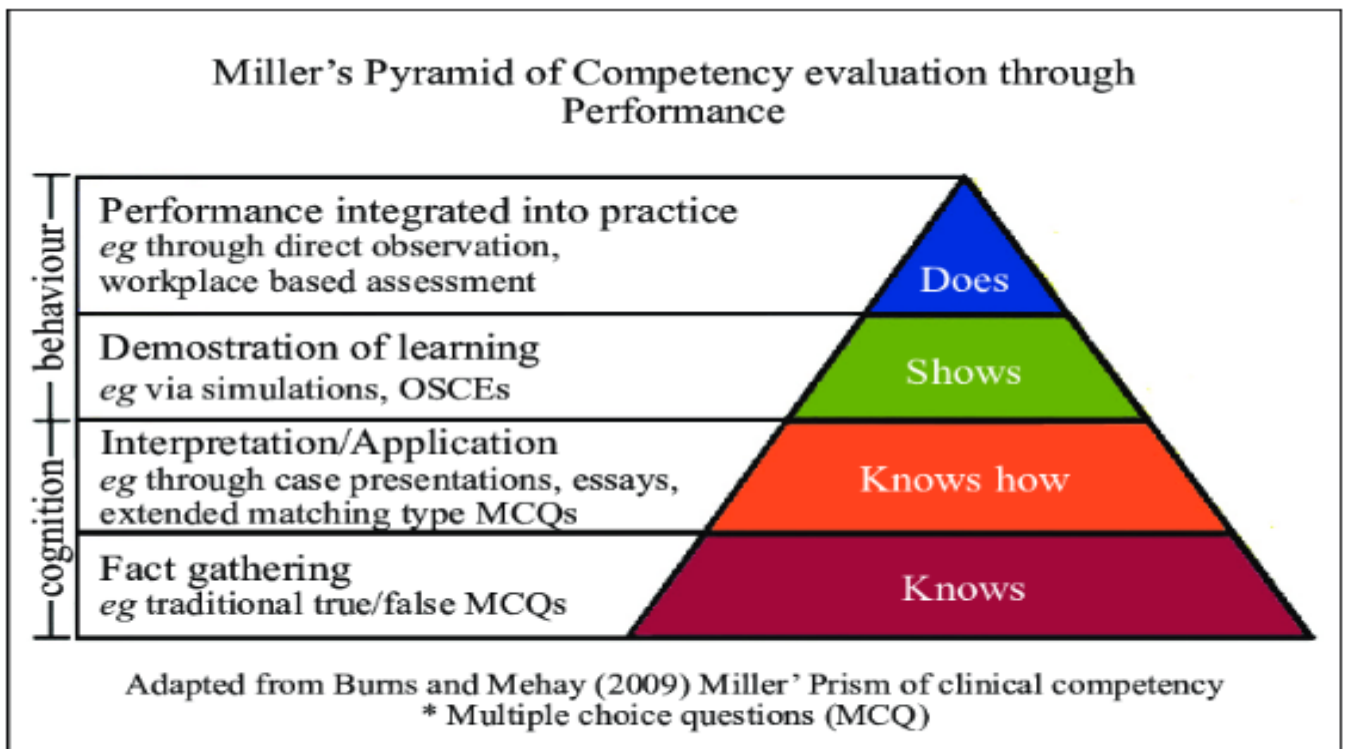
## Short cases:

There is a stem at the beginning of each short case, and you have seven minutes to finish the examination. In order to come up with a valid diagnosis or aetiology for the patient's presenting problem.

## Assessment of Clinical Competencies through Miller's Pyramid:

Miller's pyramid model divides the development of clinical competence into four, hierarchical processes.

- Lowest level of the pyramid is 'knowledge', tested by written exams and traditional multiple-choice questions (MCQs).
- The next level stands for 'application of knowledge', assessed by essays, clinical problem-solving exercises and extended MCQs.
- The third tier of the pyramid represents 'clinical skills competency', assessed by standardized patient exercises, simulations and clinical exams.
- Finally, on top of the pyramid is 'clinical performance', assessed by direct observation in real clinical settings.



-miller's Prism of clinical competence (also known as miller's Pyramid). 28

# Internal Assessment

The policy stated below was provided by KMU: Reference

- (a) There shall be internal assessment in all the subjects as per the prescribed format.
- (b) Continuous internal assessment shall consist of evaluation at the end of each assignment, e.g., stages / sub-stages, class tests, etc., attitudinal assessment from educational and clinical supervisors, clinical skill assessment from clinical supervisors, and Year's workbooks.
- (c) Assessment of Knowledge, Skills, and Attitude shall contribute towards internal assessment. Methods used to assess these domains shall include Multiple Choice Questions, Short Essay Questions, Oral / Viva, and Practical / Clinical examinations.
- (d) Awards of internal assessment in all the candidates' subjects shall be submitted to the Controller of Examinations and Admission Forms for the annual examination. Internal assessment received after commencement of the final examination shall not be accepted.
- (e) The internal assessment marks shall be submitted only once a year before the annual examination, and the same shall be counted both for annual and supplementary examinations. It is further emphasized that a new assessment or a revision of assessment for supplementary examination shall not be permissible.
- (f) Proper record of continuous internal assessment shall be maintained by respective departments and the Department of Medical Education & Research. It shall be forwarded to the Controller of Examinations as per the requirements of Khyber Medical University.

## Internal Assessment Structure:

The Structure mentioned below has been developed according to the rules provided by PMC & KMU. And is approved by the Principal Women Medical College Abbottabad.

# Internal Assessment Criteria

## 1<sup>st</sup> to 3<sup>rd</sup> Year MBBS

Criteria for Theory Paper of Block Assessments		Criteria for Attendance	Marks awarded		OSPEs Award of Internal Assessment Marks	
Marks Obtained	Internal Assessment Marks		Paper A, D, G	Paper B, C, E, F, H, I	Marks obtained in OSPEs Block Assessments	Internal Assessment marks
90-100 %	10	90-100 %	4	3	90-100 %	10
80-89 %	9	85-89 %	3	2.5	80-89 %	9
70-79 %	8	80-84 %	2	2	70-79 %	8
60-69 %	7	75-79 %	1	1	60-69 %	7
50-59 %	6	<75 %	0	0	50-59 %	6
40-49 %	5				40-49 %	5
30-39 %	4				30-39 %	4
20-29 %	3				20-29 %	3
10-19 %	2				10-19 %	2
1-9 %	1				1-9 %	1
Absent	0				Absent	0
Total Marks		Paper A = 14	Paper D = 14		Paper G = 14	
		Paper B = 13	Paper E = 13		Paper H = 13	
		Paper C = 13	Paper F = 13		Paper I = 13	

## 4<sup>th</sup> Year MBBS

Criteria for Theory Paper of Block Assessments		Criteria for Attendance	Marks awarded		OSPEs Award of Internal Assessment Marks	
Marks Obtained	Internal Assessment Marks		Paper L	Paper J,K&M	Marks obtained in OSPEs Block Assessments	Internal Assessment marks
90-100 %	10	90-100 %	4	3	90-100 %	13
80-89 %	9	85-89 %	3	2.5	85-89 %	12
70-79 %	8	80-84 %	2	2	80-84 %	11
60-69 %	7	75-79 %	1	1	75-79 %	10
50-59 %	6	<75 %	0	0	70-74 %	9
40-49 %	5				60-69 %	8
30-39 %	4				50-59 %	7
20-29 %	3				40-49 %	6
10-19 %	2				30-39 %	5
1-9 %	1				20-29 %	4
					10-19 %	3
					5-9 %	2

					1-4%	1
Absent	0				Absent	0
<b>Total Marks</b>	<b>Paper J = 13</b>		<b>Paper L = 14</b>			
	<b>Paper K = 13</b>		<b>Paper M = 13</b>			

## 5<sup>th</sup> Year MBBS



# Department of Medical Education & Research

Women Medical & Dental College

Ref. No: WMC/ \_\_\_\_\_

Date: \_\_\_\_\_

## Internal Assessment Criteria

### Final Year MBBS

Criteria for Theory Paper of Block Assessments		Criteria for Attendance	Marks awarded	OSPE + Short cases+ Long cases + Log books Award of Internal Assessment Marks	
Marks Obtained	Internal Assessment Marks		Paper N,O,P&Q	Marks obtained in OSPEs Block Assessments	Internal Assessment marks
80-100 %	8	90-100 %	4	90-100 %	18
70-79 %	7	85-89 %	3	80-89 %	17
60-69 %	6	80-84 %	2	75-79 %	16
50-59 %	5	75-79 %	1	70-74 %	15
40-49 %	4	<75 %	0	65-69 %	14
30-39 %	3			60-64 %	13
15-29 %	2			55-59 %	12
1-14 %	1			50-54 %	11
Absent	0			45-49 %	10
				40-44%	9
				35-39%	8
				30-34%	7
				25-29%	6
				20-24%	5
				15-19%	4
				10-14%	3
				5-9%	2
				1-4%	1
				Absent	0
<b>Total Marks</b>		<b>Theory Paper N, O, P and Q = 12</b>		<b>Practical N, O, P and Q = 18</b>	

Principal  
Women Medical & Dental College,  
Abbottabad

**Copy to:**

- Managing Director, WM&DC
- Director Academics, WM&DC
- All HODs, WM&DC
- Noticeboard Final Year MBBS
- LMS
- Office File

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# Assessment policy

The assessment policy aligns with Khyber Medical University rules and regulations and covers the following points.

1. To appear in the university examination, the student has to fulfil the following criteria:
  - (a) Has passed all the subjects of the previous examination.
  - (b) Has undergone the specified period of theoretical and practical courses and clinical training, including demonstrations for the said examination to the satisfaction of the Department concerned.
  - (c) No student is eligible for university examination without attending at least 75% of lectures, demonstrations, tutorials, and practical/clinical work in both in-patient and out-patient departments in that academic session.
  - (d) Has their name submitted to the Controller of Examination KMU by the Principal on clearance by the Head of Institute/teacher concerned.
  - (e) Has paid the requisite fees for the examination to the KMU and has cleared all the college/hostel dues.
  - (f) Any student who fails to clear the 1<sup>st</sup> Professional MBBS examination in FOUR chances availed or un-availed after becoming eligible for the examination shall cease to become eligible for further medical education in Pakistan.
  - (g) Any student who fails to clear the 2<sup>nd</sup> Professional MBBS examination in FOUR chances availed or un-availed after becoming eligible for the examination shall cease to become eligible for further medical education in Pakistan.
  - (h) Maximum of FOUR chances availed or un-availed will be allowed to a student to clear First Professional BDS Examination. If a student fails to pass First Professional BDS in stipulated FOUR chances, their name will be struck off the college. They will be considered ineligible (to undertake) BDS studies anywhere.
  - (i) The Principal will not forward the examination form of any student unless they produce a clearance certificate from the college cashier, hostel warden, and the college librarian.
  - (j) A student who fails in part of the exam and does not avail two consecutive chances will have to clear all the subjects in the subsequent chances. However, there is no bar on the number of chances except for 1<sup>st</sup> and 2<sup>nd</sup> Professional as described in f, g & h.

2. The minimum passing marks in each subject shall be 50% in theory and practical.  
A student who fails in theory or practical examination of a subject shall be considered  
to have failed in the subject and will have to reappear in theory and practical.
3. Any student who fails both annual and supplementary examinations in any subject of any Professional examination shall not be promoted to the next higher class. They shall undergo the course of studies in the subject(s) in which they failed. There will be no provisional promotion in such cases.
4. A student who fails in any subject shall be required to attend the lectures and practical courses regularly with the subsequent class.
5. A student who re-appears in any professional examination shall pay the requisite fee for the examination to the KMU.
6. A student eligible to appear in the examination but did not take the examination for whatever reason shall be considered to have failed.
7. Only two examinations, one Annual and one Supplementary of the same professional are allowed in any year. No third or extra supplementary examination is permitted.
8. A student who has passed their all professionals MBBS / BDS examinations shall be entitled to the degree of Bachelor of Medicine and Bachelor of Surgery (MBBS) and Bachelor of Dental Surgery (BDS) from the Khyber Medical University provided that they have conformed to the requirements of Pakistan Medical & Dental Council in vogue which may be changed from time to time.
9. Preparatory holidays shall be a minimum of one month for the 1<sup>st</sup> to 4<sup>th</sup> Professional MBBS / BDS examinations and a minimum of six to eight weeks in the Final Professional MBBS / BDS examination. The gap between two consecutive papers should not be more than two days.

A student who discontinued their studies for five years or more will not be allowed readmission. If he wants readmission before that period, he will be allowed to continue his studies from the class he left. However, the validity of an examination will be three years. After three years, the student has to retake the last professional examination.

## Evaluation of Curriculum:

The Quality Enhancement Cell (QEC) of Women Medical College was officially established in 2020 as per instructions from Khyber Medical University. The main goal of QEC is to enhance the quality of education of different programs in WMC. Self-evaluation is an essential method for assuring the

quality of academic programs with the help of faculty and administration to build good educational standards. To preserve and raise the standard of higher education, QEC must make sure that quality assurance processes are created. Receiving feedback and utilizing data gathered during the assessment of an educational program is a continuous process that helps students learn better.

Assessment is a systematic method for acquiring, assessing, and utilizing significant quantitative and qualitative data and information about educational programs from numerous various sources in order to enhance student learning. This is to evaluate and monitor whether academic and learning standards are being met or need further improvements. The process culminates when assessment results are used to improve student learning. For a successful assessment of the program, the following factors are included:

## Objectives

1. QEC is responsible for facilitating the adoption of Quality Assurance policies and practices.
2. Ensuring the quality, relevance, and alignment of educational programs with national and international standards.
3. Collaborating with faculty to review, update, and innovate the curriculum to meet changing healthcare demands.
4. Establishing robust assessment methods to measure student achievement and program outcomes accurately.
5. Collaborating with faculty to review, update, and innovate the curriculum to meet changing healthcare demands.
6. To improve institutional performance and stakeholders' satisfaction, WM&DC should adopt quality-focused strategies.
7. QEC is responsible for receiving feedback from students, faculty, alumni recently graduating, and employees.
8. Collecting and analyzing student feedback to identify areas for improvement and better aligning educational experiences with student needs.
9. Ensuring compliance with regulations, policies, and guidelines related to medical education and healthcare.
10. QEC is responsible for the review of academic affiliations with other institutions in terms of effective management of standards and quality of programs  
<https://wmc.edu.pk/quality-enhancement-cell-qec/>



## **Process of Curriculum Evaluation**

The process of curriculum evaluation led by the Quality Enhancement Cell (QEC) in a medical college involves the following stages

1. Planning and Preparation
2. Data Collection
3. Analysis and Assessment
4. Recommendations and Action Plan
5. Implementation and Monitoring

### **Planning and Preparation:**

This step involves defining the scope and objectives of the evaluation, crafting a detailed plan outlining the evaluation process, timeline, and accountable parties, and collecting essential documents, such as curriculum materials, learning outcomes, and assessments.

### **Data Collection:**

The second step involves employing various methods, including surveys, interviews, and document analysis. The data is gathered from students, faculty, alumni, employers, and other stakeholders to assess the alignment between learning objectives, teaching methods, and evaluations.

### **Analysis and Assessment:**

The third step involves analyzing the accumulated data to identify strengths, weaknesses, and areas for improvement by evaluating the effectiveness of teaching approaches, assessment strategies, and curriculum content, gauging the curriculum's relevance in addressing current healthcare requirements and industry trends. The curriculum is against national and international standards and best practices in medical education

### **Recommendations and Action Plan:**

This step involves the Formulation of well-founded recommendations derived from evaluation findings. Developing a detailed action plan specifying steps to address identified areas for enhancement based on analysis assessments and recommendations.

### **Implementation and Monitoring:**

All of the above steps have the value when they are implemented this step involves executing recommended changes within the curriculum continuously monitoring the implementation progress and making necessary adjustments.

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