Avicenna Medical & Dental College

STUDY GUIDE

2023-2024



Program:	MBBS
Year:	3rd Professional Year
Subject:	Pharmacology
Batch No:	M-21
Session:	2023-2024

Department of Medical Education

Content

1. Introduction to Study Guide

- Objectives of the Study Guide……1

2. Avicenna Medical & Dental College Overview

- Institutional Organogram……2
- Vision and Mission……..…..2
- Messages:from the Principal……3
- 7-Star Doctor Competencies (PMDC)……4
- About Medical College……4

3. Department & Subject Overview

- Note from the Head of Department……5
- Departmental Organogram……5
- Faculty Members……6
- Goal of the Department ……...6
- Course Objectives……7
- Attendance Requirement & Internal Assessment Criteria……7

4. Learning Resources & Pedagogy

- Book Recommendations……8
- Teaching Methodologies……8
- Infrastructure Resources……10
- Digital Library & Learning Management System……..……..12

5. Assessment Guideline

- Internal Assessment……..15
- External Assessment……17

- Sample Questions……..……..18

6. Curriculum Details

- Curriculum Framework & Allocation of hours…….21
- Curricular Map & Rationale……..…….22
- Learning Outcomes & Table of Specifications (TOS)…….27
- Academic Calendar / Annual Planner……
- Block Timetable……
- Test Schedules……..…..
- Pre-Clinical / Clinical / Ward Rotations / Community Visits Plan…….
- UHS Syllabus and Statutes……

7. Student's Policy

- Refer to Policy Manual……

Introduction to Study Guide

Welcome to the Avicenna Medical & Dental College Study Guide!

This guide serves as your essential resource for navigating the complexities of your medical & dental education at Avicenna Medical & Dental College. It integrates comprehensive details on institutional framework, curriculum, assessment methods, policies, and resources, all meticulously aligned with UHS, PMDC and HEC guidelines.

Each subject-specific study guide is crafted through a collaborative effort between the Department of Medical Education and the respective subject departments, ensuring a harmonized and in-depth learning experience tailored to your academic and professional growth.



Objectives of the Study Guide

1. **Institutional Understanding:**
    - Gain insight into the college's organizational structure, vision, mission, and graduation competencies as defined by PMDC, setting the foundation for your educational journey.
2. **Effective Utilization:**
    - Master the use of this guide to enhance your learning, understanding the collaborative role of the Department of Medical Education and your subject departments, in line with PMDC standards.
3. **Subject Insight:**
    - Obtain a comprehensive overview of your courses, including detailed subject outlines, objectives, and departmental structures, to streamline your academic planning.
4. **Curriculum Framework:**
    - Explore the curriculum framework, academic calendar, and schedules for clinical and community rotations, adhering to the structured guidelines of UHS & PMDC.
5. **Assessment Preparation:**
    - Familiarize yourself with the various assessment tools and methods, including internal exam and external exam criteria, and review sample papers to effectively prepare for professional exams.
6. **Policies and Compliance:**
    - Understand the institutional code of conduct, attendance and assessment policies, and other regulations to ensure adherence to college standards and accrediting body requirements.
7. **Learning Resources:**
    - Utilize the learning methodologies, infrastructure resources, and Learning Management System to maximize your educational experience and academic success.

This guide, meticulously developed in collaboration with your subject departments, is designed to support your academic journey and help you achieve excellence in accordance with the highest standards set by PMDC and HEC.

DEPARTMENT OF MEDICAL EDUCATION

The Department of Medical Education (DME) serves as a cornerstone in delivering effective and high-quality education to both undergraduate and postgraduate medical and dental students. The DME is integral to the implementation and adoption of the latest curriculum provided by UHS and is responsible for organizing and managing related academic activities.

The DME will oversee the spirals of PERLs and C-FRC and monitor students' portfolio development and logbook completion. Additionally, the department is developing a mentoring platform and plans to initiate faculty development training which will focus on mentorship, reflective writing, and portfolio development skills. DME has a duty to collaborate with other disciplines to ensure that AVMDC students are not only competent in their respective fields but also well-trained in affective domains such as professionalism, ethics, research, and leadership.

A key responsibility of the DME is to plan and implement an effective training competency acquisition framework in collaboration with the academic council.

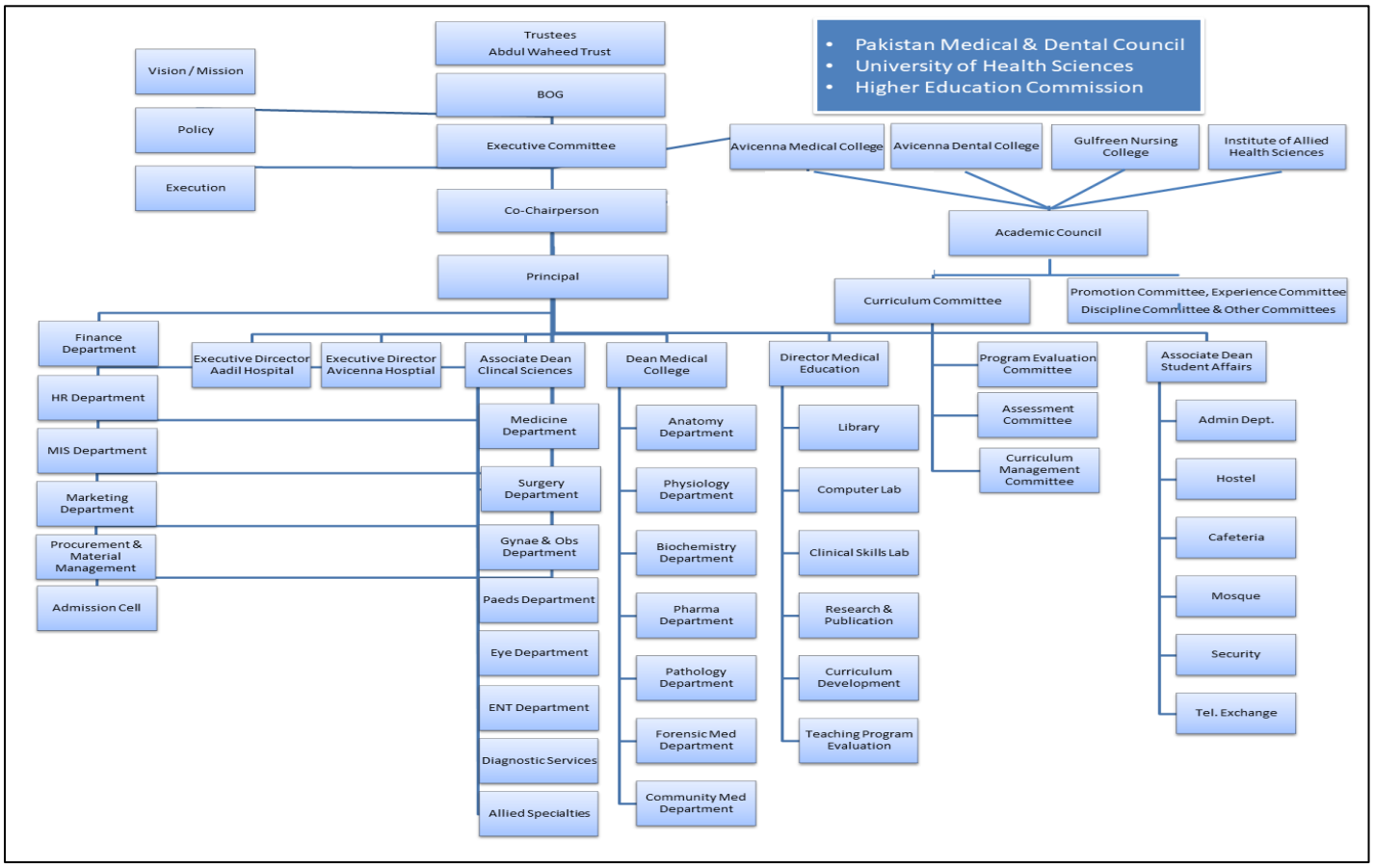
General Responsibilities of DME include:

- Contribute and design, train the trainer activities which fulfill the need for undergraduate and postgraduate training.
- Shape and develop medical education research activities of the college.
- Facilitating & organizing workshops, seminars, symposia & conferences.
- Conducting CME activities to leverage culture of awareness, journal club.
- Networking by representing the college, when needed, in national /international meetings or conferences.
- Student counseling.
- Supervising students' academic progress.
- Academic Committees Development and Support.
- Staff Support and Development.
- Curriculum development and reform.
- Collaborate with curriculum committee and faculty members to develop quality instructional material such as modules, lecture, or study guides.
- Standard Operating Procedures for DME development.
- Skill lab management.
- Assessment analysis which includes blue printing, pre-exam review, item analysis and standard setting and provides feedback to concerned faculty and students on the learning outcome achievement.
- Develop and conduct periodical review of process of the program, learning and teaching activities, and assessment process.
- Identify opportunities for use of IT in teaching and learning, assessment and faculty development activities.
- Exam Cell management.
- Quality Assurance Cell management.
- Record keeping of departmental data.
- Leadership and management.
- Participation in overall planning and management of teaching in liaison with the departments.

Faculty	Department
Assistant Director / Assistant Professor Medical Education	Dr. Saman Fatima
Coordinator Medical Education	Dr. Javaid Shabkhaiz Rab
Deputy Director / Demonstrator Dental Education	Dr. Salar Arsalan
Deputy Director / Demonstrator Allied Health Sciences	Dr. Talha
Deputy Director / Demonstrator Nursing Education	Dr. Muneeba

Avicenna Medical & Dental College Overview

Institutional Organogram



Vision & Mission

Avicenna Medical & Dental College

Vision

The vision of **Avicenna Medical & Dental College** is to become a college that thrives to achieve improvement in healthcare of masses through creative delivery of educational programs, innovative research, commitment to public service and community engagement in a environment that supports diversity, inclusion, creative thinking, social accountability, life-long learning and respect for all.

Mission

The mission of **Avicenna Medical and Dental College** is to educate and produce competent, research oriented healthcare professionals with professional commitment and passion for life-long learning from a group of motivated students through quality education, research and service delivery for the improvement of health status of the general population.

Message from the Chairman



The Avicenna Medical & Dental College is a project of Abdul Waheed Trust which is a Non-profitable, Non-governmental, Non -political & Social organization, working for the welfare of Humanity and based on Community empowerment. Avicenna Medical College has its own 530 bedded Avicenna teaching Hospital (Not for Profit hospital) within the College Campus & 120 bedded Aadil Hospital, at 15 minutes distance. Separate comfortable hostels for boys & girls are provided on the campus.

Our students benefit from the state of the art College Library with facilities of Internet & online Journals that remain open 15 hours a day, for our students & faculty members. I am particularly pleased with the hard work by the Faculty and Students in the achievement of historic 100% results for all the classes. It is a rare achievement and speaks of dedication of the Faculty and Staff. Our motto is Goodness prevails and we aim at producing Doctors' who are knowledgeable, competent in clinical skills and ethical values.

Avicenna Medical College & Hospital was founded to provide quality health care services to the deserving patients belonging to the rural areas near Avicenna Hospital as well as to provide quality medical education of international standard to our students. The Hospital provides all medical services and Lab diagnostics to the local population at minimal cost. So far by the grace of Allah Almighty the number of patients being treated and operated upon at our Hospital is increasing every day as there is no other public or charity hospital in the circumference of 20km. We have already established two Satellite Clinics in the periphery which are providing outdoor care while admission cases are brought to the Hospital in Hospital transport.

Following the success of our reputable Medical College and Hospital, we were able to successfully establish Avicenna Dental College which is recognized by the Pakistan medical & Dental Council & University of Health Sciences. To date, we have enrolled five batches in our dental college and we aim to achieve the same level of success for our dental students as our medical students.

Chairman
Abdul Waheed Sheikh
Avicenna Medical & Dental College

Message from the Principal

Prof. Dr. Gulfreen Waheed
Principal Medical College
MBBS, FCPS, MHPE, PHD Scholar, (HPE)



As a Co-Founder and Co-Chairperson, I have been involved in planning, construction and accreditation of Avicenna Medical College by the Pakistan Medical and Dental Council (PM&DC) and its affiliation with the esteemed University of Health Sciences (UHS). It is a pleasure to see Avicenna Medical College develop, progress and achieve maximum academic excellence in a short period since its inception in 2009. The institution has lived up to its mission of training and producing medical graduates of international standards. Three batches have passed out as Doctors, who currently are serving in the country and abroad while several have opted for post-graduation and are on road to progress. We have achieved several milestones since 2009 including the recognition of our College for FCPS training by College of Physicians and Surgeons of Pakistan (CPSP), establishment of College of Nursing and Avicenna Dental College.

7-Star Doctor Competencies (PMDC)

According to national regulatory authority PMDC, a Pakistani medical/dental graduate who has attained the status of a 'seven-star doctor' is expected to demonstrate a variety of attributes within each competency. These qualities/ generic competencies are considered essential and must be exhibited by the individual professionally and personally.

1. Skillful / Care Provider.
2. Knowledgeable / Decision Maker.
3. Community Health Promoter / Community Leader.
4. Critical Thinker / Communicator
5. Professional / Lifelong learner.
6. Scholar / Researcher
7. Leader/ Role Model / Manager



About Avicenna Medical College

Avicenna Medical & Dental College is a purpose-built, fully equipped institution with experienced and excellence-driven faculty to train high-quality dental professionals in Pakistan.

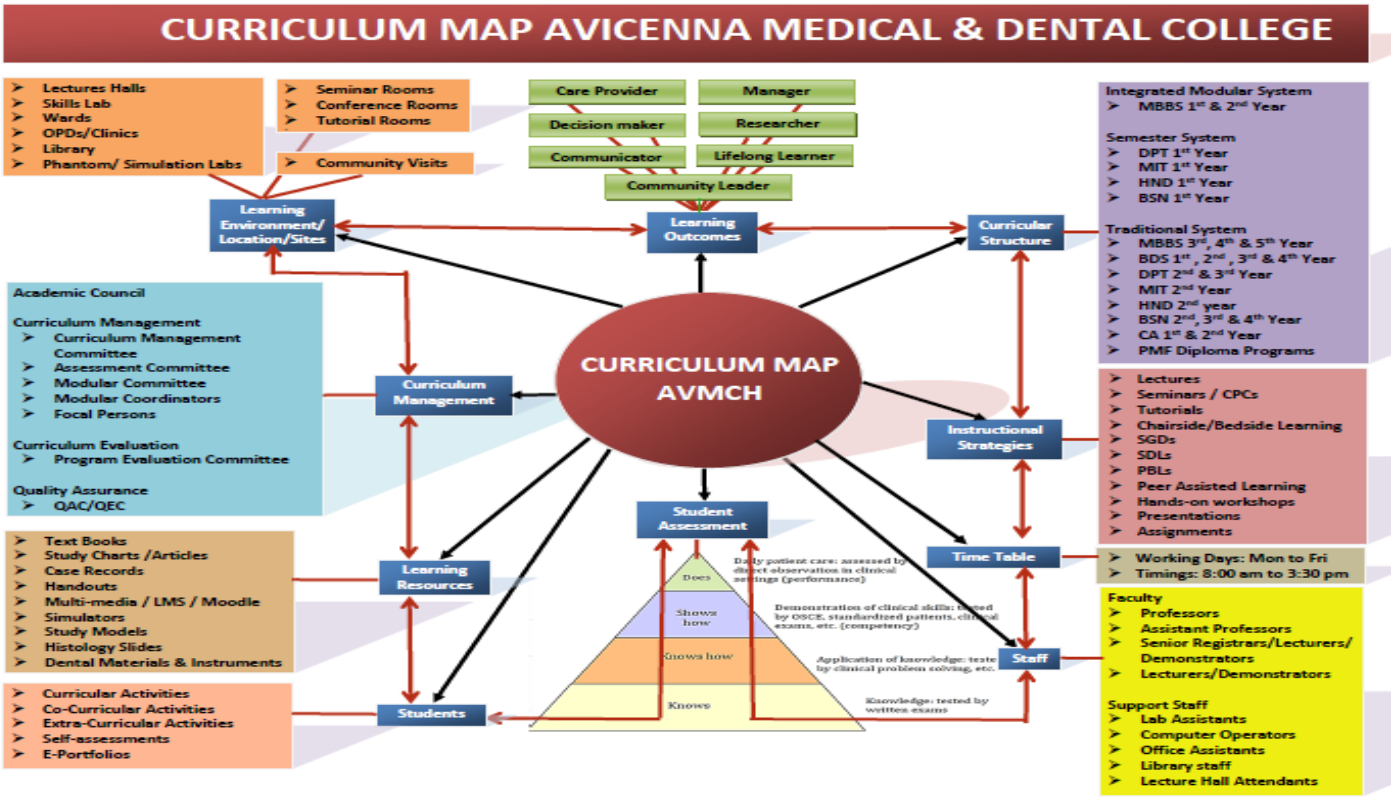
Avicenna Medical & Dental College runs under the umbrella of Abdul Waheed Trust. Abdul Wahid Trust is a non-profit social welfare organization and registered under the Societies Act with the Registrar of Societies. The Trust is legalized through a Trust Deed that bears necessary rectifications. The Trust Deed is further supported by its Memorandum and Article of Association that authorizes the establishment and operation of the Medical College, the Dental College, the Nursing College, the Allied Health Sciences College, and other activities in the healthcare sector.

In 2009, Avicenna Medical & Dental College was recognized by the Pakistan Medical & Dental Council. With the advent of advanced tools and technology in every field of health science, medicine today has shot up to the greater end of the gamut with superior choice and promises in medical therapy in the very vicinity of the common man. AVMDC promises to be one such neighborhood.



Curricular Map

This pictorial, vertical and horizontal presentation of the course content and extent shows the sequence in which various systems are to be covered. Curricular map to cover all the subjects and modules and the time allocated to study of the systems for the undergraduate programs offered at four colleges at campus are as follows:



Note from the Head of Department

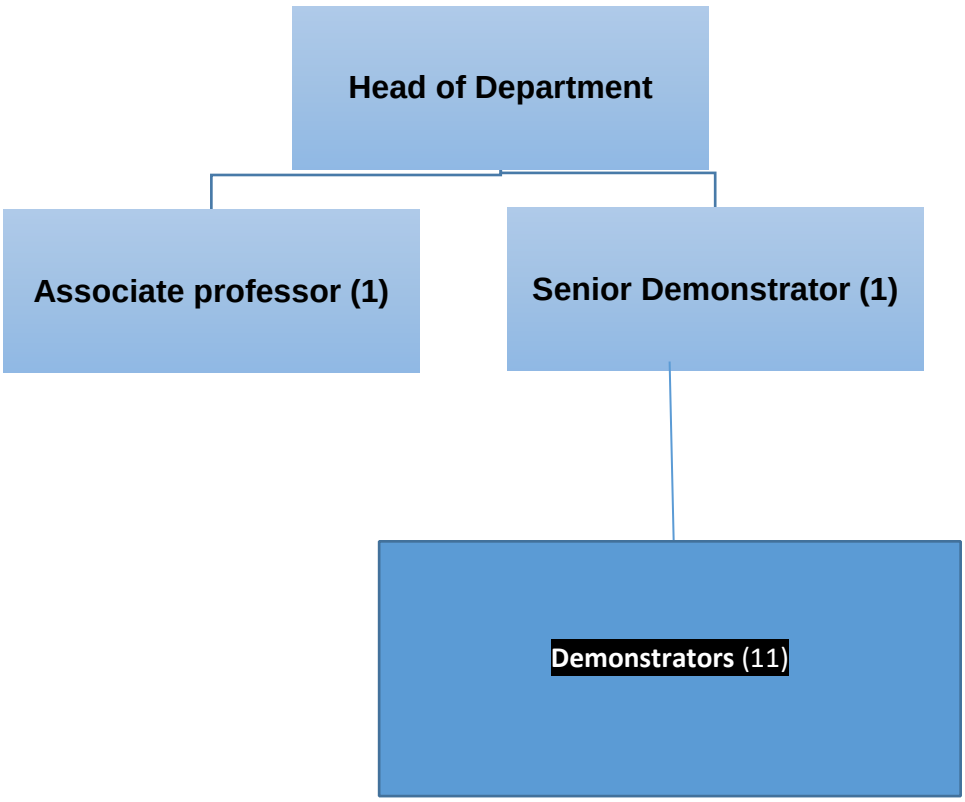


Pharmacology is a pre-clinical subject, and a thorough knowledge of drugs is essential for understanding medicine. A good physician must also be a skilled pharmacologist. Pharmacology covers almost all aspects of drugs, including the various routes of drug administration, pharmacokinetics, and mechanisms of action, clinical uses, adverse drug reactions, drug interactions, and dosage schedules.

Clinical pharmacology encompasses all aspects of the relationship between drugs and humans. For healthcare professionals, clinical pharmacology is crucial as it forms the scientific foundation for the rational prescribing of medicines to alleviate symptoms, treat illnesses, and prevent future diseases.

Our faculty is both qualified and experienced, dedicated to guiding students through their studies. Students can anticipate an engaging learning experience during Pharmacology lectures and lab sessions. They also have access to well-equipped laboratories and a library that provides all necessary resources for learning and practical training in experimental pharmacology, clinical pharmacology, and pharmacy.

Departmental Organogram (as per PMDC guidelines)



Faculty Members

Name	Designation	Qualification
Dr Asma Saeed	Head of Department	**MBBS , MPHIL**
Dr Rubina Iqbal	Associate Professor	**MBBS, MPHIL**
Dr Iqra Ijaz	Senior Demonstrator	**BDS,MPHIL**
Dr Shahida	Demonstrator	**MBBS**
Dr Nayyar	Pharmacist	**D PHARM**
Dr Rohama Bajwa	Demonstrator	**MBBS**
Dr Ashfaque Hussain	Demonstrator	**MBBS**
Dr Fatima Tehreem	Demonstrator	**BDS**
Dr Abdullah Nasir	Demonstrator	**BDS**
Dr Shabnam	Demonstrator	**MBBS**
Dr Ali Murtaza	Demonstrator	**MBBS**
Dr Suffyan	Demonstrator	**MBBS**
Dr Fatima Ali	Demonstrator	**MBBS**
Dr Khuzaima	Demonstrator	**MBBS**

Goal of the Department

Overall, the Pharmacology department of Avicenna Medical and dental college aims to provide productive and fundamental knowledge of drugs along with their application and use in combating diseases.

The major academic objective of the department is to facilitate basic and applied research in the field of pharmacology and educate the medical students so they are able to determine the effectiveness and safety of drugs designed to treat , prevent and diagnose diseases.

We encourage our students and faculty respectively, to actively participate in world class scientific research and evidence based teaching , therefore expanding our track record of innovation and excellence in both of these disciplines, which would ultimately lead to competent , decent and proficient medical graduates.

Course Objectives

oon completion of the pharmacology and therapeutic course, students will be able to:

Understand Drug Mechanisms: Explain the mechanisms of action, pharmacokinetics, and pharmacodynamics of various drug classes.

Apply Pharmacological Principles: Apply knowledge of drug actions, interactions, and side effects to make informed decisions in clinical practice.

Prescribe Medications Safely: Demonstrate the ability to prescribe medications safely and effectively, taking into consideration individual patient needs and potential drug interactions.

Analyze Clinical Scenarios: Analyze and interpret clinical case studies to identify appropriate pharmacological treatments and adjust therapy based on patient response.

Recognize Adverse Drug Reactions: Identify and manage adverse drug reactions, understanding their underlying causes and implications for patient care.

Utilize Evidence-Based Medicine: Integrate evidence-based medicine in the selection and use of therapeutic agents, ensuring up-to-date and scientifically sound decision-making.

Conduct Pharmacological Research: Develop basic research skills in pharmacology, including the ability to design experiments, analyze data, and interpret findings relevant to drug efficacy and safety.

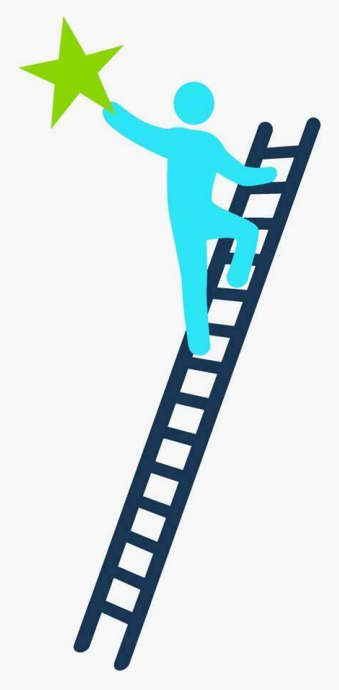
Understand Regulatory and Ethical Issues: Understand the regulatory processes and ethical considerations involved in drug development, approval, and clinical use.

Educate Patients and Peers: Communicate pharmacological information effectively to patients, peers, and other healthcare professionals, providing clear guidance on medication use and safety.

Commit to Continuous Learning: Embrace lifelong learning and stay current

Attendance Requirement & Internal Assessment Criteria

The institution follows the regulations for examinations of the UHS in letter and spirit. The students require **85% attendance** in all academic sessions and **50% marks** in internal assessments and send-up examinations to be eligible for the UHS Professional Examinations.



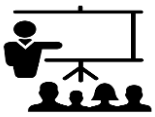
Learning Resources & Pedagogy

Book Recommendations



Sr.	Book Name	Author	Edition
1.	Basic And Clinical Pharmacology	Lang Katzung & Trevor	15th Edition
2.	Katzung Review	Bertrain G. Katzung	14th Edition
3.	Lippincott Illustrated Reviews	Karan Whallen	7th Edition
4.	Pre Test Pharmacology	Marshal Shlafar	14th Edition
5.	Multi Author	Professor Maqsood Cheema	Vol 1 And 2
6.	Pharmacology Basic Of Therapeutics	Good Man & Gillman	10th Edition
7.	Essentials Of Medical Pharmacology	Jaypee Kd Tripathi	6th Edition
8.	Rang & Dale's Pharmacology	H.P Rang M.M Dale	10th Edition

Traditional & Innovative Teaching Methodologies



Sr.	Pedagogical Methodologies	Description
1.	Lectures	Traditional method where an instructor presents information to a large group of students (large group teaching). This approach focuses on delivering theoretical knowledge and foundational concepts. It is very effective for introducing new topics.
2.	Tutorial	Tutorials involve small group discussion (SGD) where students receive focused instruction and guidance on specific topics.
3	Demonstrations	Demonstrations are practical displays of techniques or procedures, often used to illustrate complex concepts or practices, particularly useful in dental education for showing clinical skills.
4	Practicals	Hands-on sessions where students apply theoretical knowledge to real-world tasks. This might include lab work, clinical procedures, or simulations. Practicals are crucial for developing technical skills and understanding the application of concepts in practice.
5.	Student Presentations	Students prepare and deliver presentations on assigned topics. This method enhances communication skills, encourages students to explore topic in-depth. It also provides opportunities for peer feedback and discussion.
6.	Assignment	Tasks given to students to complete outside of class. Assignments can include research papers, case studies, or practical reports. They are designed to reinforce learning, assess understanding, and develop critical thinking and problem-solving skills.
7.	Self-directed Learning	Students take initiative and responsibility for their own learning process. Students are encouraged to seek resources, set goals, and evaluate their progress. This is a learner-centered approach where students take the initiative to plan, execute, and assess their own learning activities. This method promotes independence, critical thinking, and lifelong learning skills.
8.	Flipped Classroom	In this model, students first engage with learning materials at home (e.g., through videos, readings) and then use class time for interactive activities, discussions, or problem-solving exercises. This approach aims to maximize in-class engagement and application of knowledge.
9.	Peer-Assisted Learning (PAL)	A collaborative learning approach where students help each other understand course material. PAL involves structured peer tutoring, study groups, or collaborative tasks. It enhances comprehension through teaching, reinforces learning, and builds teamwork skills.

10.	Team-based Learning (TBL)	A structured form of small group learning where students work in teams on application-based tasks and problems. Teams are responsible for achieving learning objectives through collaborative efforts, promoting accountability, and deeper understanding of the material.
11.	Problem-based Learning (PBL)	Students work on complex, real-world problems without predefined solutions. They research, discuss, and apply knowledge to develop solutions. PBL fosters critical thinking, problem-solving skills, and the ability to integrate knowledge from various disciplines.
12.	Academic Portfolios	A collection of student's work that showcases learning achievements, reflections, and progress over time. Portfolios include assignments, projects, and self-assessments. They provide a comprehensive view of student development, highlight strengths and areas for improvement, and support reflective learning (experiential learning)

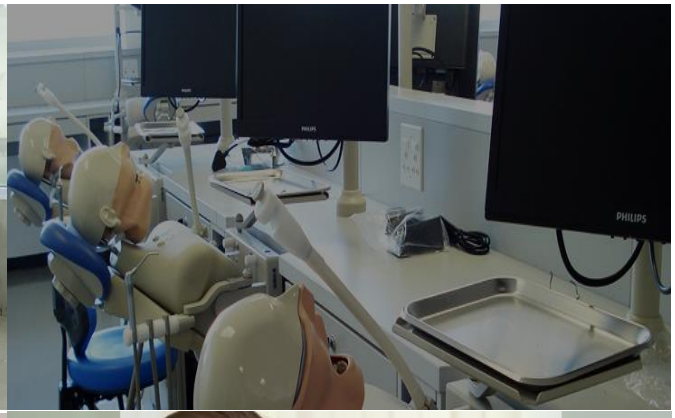


Flipped Classroom

Infrastructure Resources

Sr.	Infrastructure Resources	Description
1.	Lecture Hall	Each year has a dedicated lecture hall, totaling five lecture halls for the five professional years. These halls are equipped with modern audiovisual aids to support effective teaching and learning.
2.	Tutorial Room	The college's tutorial rooms, each with a capacity of 30, are specifically designed to support small group discussions and interactive sessions. These rooms facilitate personalized instruction, enabling more engaged and effective learning through direct interaction between students and instructors.
3.	Lab	The college is equipped with state-of-the-art laboratories for practical and clinical work. Each lab is designed to support various disciplines, to facilitate hands-on learning.
4.	Library on campus	A huge library occupies full floor has 260 seats including study carrels and group-discussion tables. Latest reference books, of Basic and Clinical Sciences along with national & international journals are available in the library.
5.	Digital Library	The digital library offers access to a vast collection of e-books, online journals, research databases, and other digital resources. It supports remote access and provides tools for academic research and learning.
6.	Learning Management System (LMS)	The LMS is a comprehensive online platform that supports course management, content delivery, student assessment, and communication. It provides tools for tracking progress, managing assignments, and facilitates ongoing academic activities.
6.	Phantom Labs	Specialized Phantom Labs are available for advanced simulation and practice in dental procedures. These labs provide high-fidelity models and simulators that help students refine their clinical skills in a controlled environment.
7.	Mess & Cafeteria	The College has its own on-campus Mess which caters to 600 students. All food items including dairy, meat, and vegetables are sourced organically and bought in at the time of cooking, in order to ensure that students get freshly cooked meals at all times Students form the Mess committee which decides the mess menu in consultation with other students. The Mess offers fresh food to all residents three times a day. However, day scholars are also welcome to use the Mess facility at a reasonable cost. Two 50- inch LCD screens provide students an opportunity to get entertained during their meal times.
8.	Gymnasium & Sports	We recognize sports as a pivotal key to shape and maintain students' personality and good health. The College has indoor and outdoor sports facilities to help enhance the cognition and capacity to learn. There is a proper sports section for various games like basketball, football, volleyball, and cricket.

		The gym itself is fully equipped with modern machinery both for students and faculty.
9.	IT Lab	The IT Lab is equipped with modern computers and software available for students who need access for academic purposes.
10.	Auditorium	The college has a spacious auditorium equipped with advanced audio-visual facilities. It is used for large-scale lectures, guest presentations, and academic conferences, providing a venue for students to engage with experts and participate in important educational events.
11.	Examination Halls	The college provides dedicated examination halls that are designed to accommodate a large number of students comfortably. These halls are equipped with necessary facilities to ensure a smooth and secure examination process, including proper seating arrangements, monitoring systems, and accessibility features.





Digital Library & Learning Management System (LMS)

1. The COVID-19 pandemic highlighted the necessity of interactive online teaching for better retention of topics by students. Strategies like online learning management system (LMS), online discussions, online quizzes, assignment design, and flipped learning enhance student engagement in online education when needed.

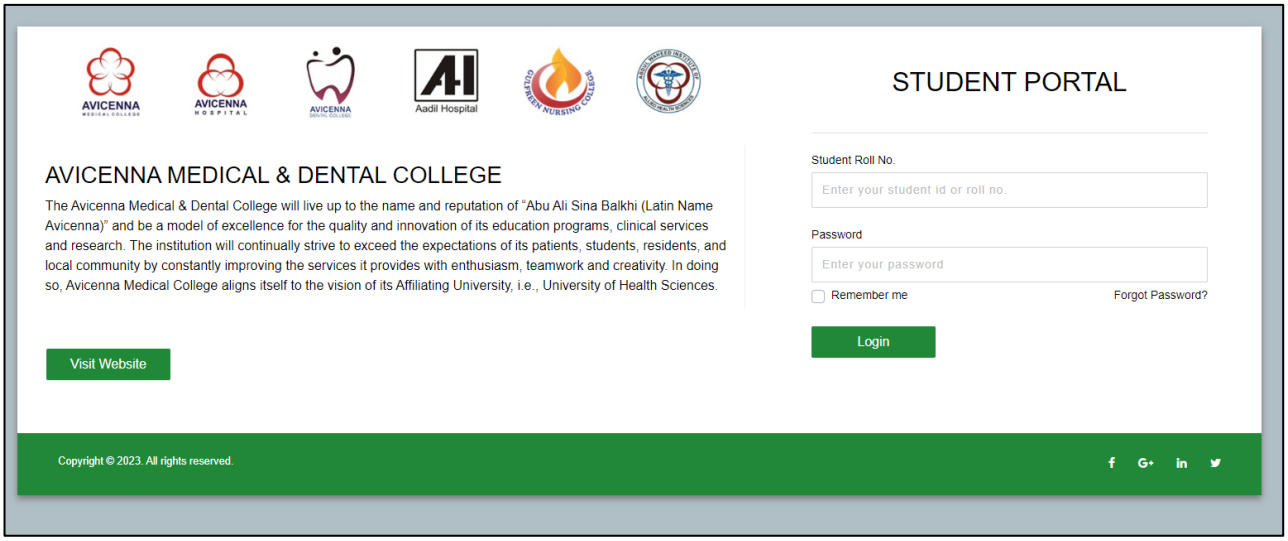
2. Avicenna Medical & Dental College lays emphasis on the provision of learning material and online video lectures, video tutorials in the e-library and learning resource center, which has a dedicated website of Avicenna Medical College to enable the students to develop concepts and clarify their doubts, if they have not been able to do so in the teaching sessions during college hours. The digital library can be approached on http://digital.avicennamch.com/.



3. The institution has also endeavored to link itself with the digital libraries and e-library of the University of Health Science (UHS) and Higher Education Commission (HEC) to enable the students to benefit from the valuable resource material, lectures and knowledge bank at these sites. The links are available with the HEC http://www.digitallibrary.edu.pk/ and learning management system of UHS http://lms.uhs.edu.pk .

4. The Learning Management System (LMS) at Avicenna Medical & Dental College is a comprehensive platform managed by the Department of Student Affairs. It is designed to facilitate effective communication and information exchange between students, parents, faculty, and administrative staff. The LMS portals are specifically tailored to meet the needs of the following stakeholders:

   a. **Students**: For academic resources and scheduling.
   b. **Parents:** For monitoring academic progress and other relevant information.
   c. **Faculty:** For managing course content and academic activities.
   d. **Department of Student Affairs:** For overseeing administrative functions.
   e. **Department of Medical/Dental Education:** For overseeing academic functions.



5. Students can access a comprehensive range of academic resources and information through the student portal. By logging in with their roll number and password, students can:

   - Look at their attendance and results.
   - Review academic activities and weekly timetables/schedules.
   - Access rotation planners and test schedules.
   - Check for any notification, assignment or resource material from their teachers.

6. The information to the parent is duplicated by the issuance of the password and login to the Students Learning Management System which is dedicated to the Academic Program of the students. The parents can view the following by logging in to the mobile app of Avicenna Student Management System:

   a) Syllabus
   b) Table of specifications
   c) Annual Planner
   d) Synopsis
   e) Block Time Table
   f) Weekly training program
   g) Allocation of Marks
   h) Assessment calendar
   i) Results of tests / exams*
   j) Students' attendance record
   k) Fees & fines

Assessment Guidelines

Assessment in medical & dental education is a critical component designed to ensure that medical & dental students acquire the necessary knowledge, skills, and competencies required for effective medical & dental practice.

Assessment drives learning! – George E. Millar

You will encounter a variety of assessment methods, each serving a specific purpose.

- Written examinations, including multiple-choice and essay questions, will test your grasp of theoretical concepts and subject matter.
- Practical assessments will require you to demonstrate your clinical skills and ability to apply knowledge in real-world scenarios.
- Clinical exams will evaluate your communication skills and reasoning abilities through case discussions and problem-solving exercises.
- Clinical skills and work-place based assessments will observe your hands-on proficiency and patient management capabilities.

At Avicenna Medical & Dental College, internal assessments are systematically conducted throughout each academic year of the MBBS program, as per the guidelines established by the University of Health Sciences (UHS). These assessments, overseen by the Assessment Cell, adhere to either the Annual Subject-Based System or the Integrated/Modular System, depending on the curriculum structure.

Notably, beginning with the 2024-25 academic year, the weightage of internal assessments will be increased from 10% to 20%. The UHS administers professional examinations independently, organizing them at designated neutral sites and appointing external examiners to ensure objectivity and fairness.

Internal Assessment Weightage	20%	100 %
External Assessment Weightage	80%	



Internal Assessment

How is Internal Assessment Calculated for your department?

Internal Assessment		**Assessment Methods** (MCQ/SEQ/OSCE/Viva/ Practical)	**Percentage Weightage** (write N/A where not applicable)
Session Exams	Early Session Exam	MCQs SEQs Viva OSPE	70%
	Mid-term Session Exam	MCQS SEQS VIVA OSPE	
	Late Session/Send up Exam	MCQS SEQS VIVA OSPE	
Grand Tests		MCQS SEQS VIVA OSPE	30%
Batch Clinical Assessment			
Final Clinical Assessment			
Ward Test	Early Ward Test		
	Mid Ward Test		
	Grand Ward Test		
Attendance & Behaviour			
			100%

Avicenna Medical College

Examination Marks Scheme 2023-2024

3rd Year MBBS

Form No	MBBS-3 Form-1		MBBS-3 Form-2		MBBS-3 Form-3		MBBS-3 Form-4		MBBS-3 Form-5	MBBS-3 Form-6	
Test Type	Grand Test				Revision Test		Session Exam			Send Up	
Mode of Exam	Theory		Practical		Theory		Theory		Practical	Theory	
Weightage	(1,2)* 30%				0%		(3,4)* 70%			100%	
Pathology 300	MCQ 50, SEQ 50	100	OSPE 25 , Viva 25	50	MCQ 25, SEQ 25	50	MCQ 65, SEQ 70, IA 15	150	OSPE 72 , Viva 63, IA 15	MCQ 65, SEQ 70, IA 15	150
Pharmacology 300	MCQ 50, SEQ 50	100	OSPE 25 , Viva 25	50	MCQ 25, SEQ 25	50	MCQ 65, SEQ 70, IA 15	150	OSPE 50 , Viva 85, IA 15	MCQ 65, SEQ 70, IA 15	150
Forensic Medicine 200	MCQ 50, SEQ 50	100	OSPE 25 , Viva 25	50	MCQ 25, SEQ 25	50	MCQ45, SEQ 45, IA 10	100	OSPE 40 , Viva 50, IA 10	MCQ45, SEQ 45, IA 10	100
Behvioural Science 200	MCQ 55, SEQ 45	100	OSPE 27 , Viva 23	50	MCQ 23, SEQ 27	50	MCQ45, SEQ 45, IA 10	100	OSPE 45 , Viva 45, IA 10	MCQ45, SEQ 45, IA 10	100

NOTE 1 : *If Viva/OSPE is held along with Theory test , The Theory test will get 15% weightage & VIVA / OSPE will get 15% Weightage in Grand Test

NOTE 2 : *If Viva/OSPE is not held for any reason Theory test will get full 30% weightage in Grand Test

NOTE 3 : *If Viva/OSPE is held along with Theory test , The Theory test will get 35% weightage & VIVA / OSPE will get 35% Weightage in Session Exam

NOTE 4 : *If Viva/OSPE is not held for any reason Theory test will get full 70% weightage in Session Exam

External Assessment

What to expect in External Exam?

External Assessment	Assessment Methods	Marks	Percentage Weightage
Theory ● Total marks ● Time	65 MCQs 14 SEQs	65 70	45 %
Practical ● Total marks ● Time	Viva OSPE Practical Notebook	80 50 05	45 %
Internal Assessment	Grand Tests Session Exams	30	10 %?
Total marks		300 Marks	100%

Sample Paper

MCQ

AUTHOR: Dr Rubina Iqbal
DATE: 4-9-2024
DISCIPLINE/SUBJECT: Pharmacology
TOPIC: CNS
LEVEL OF STUDENT: 3rd Year MBBS
AREA: (e.g. diagnosis/investigations/management/treatment)

Item Writing Template

7. Stem: Local Anesthetics are administered to produce regional anesthesia. A child requires multiple minor surgical procedures involving the nasopharynx. The drug with high surface local anesthetic activity and intrinsic vasoconstrictor actions that reduces bleeding in mucous membranes is, **Lead in: Local anesthetic with vasoconstrictor properties.**

Option:

a)Bupivicaine
b)Cocaine*
c) Lidocaine
d)Mepivacaine
e)Tetracaine

Mark the key with an Asterix*

COGNITIVE LEVEL: Recall
DIFFICULTY LEVEL: Moderate
IMPORTANCE: Must Know
REFERENCE: Katzung & Trevors Pharmacology

SEQ/SAQ

AUTHOR: Dr Rubina Iqbal
DATE: 4-9-2024
DISCIPLINE/SUBJECT: Pharmacology
TOPIC: CNS
LEVEL OF STUDENT: 3rd Year MBBS
AREA: (diagnosis/investigations/management/treatment)

1. **Scenario**
   A. A 72 year old male comes to OPD presenting with pin rolling movements of the fingers and cog wheel rigidity. The Physician diagnoses him to have Parkinsons disease.

Questions	Marks
a) Classify drugs used for the treatment of Parkinsons disease.	**3**
b) Enumerate the adverse effects of Levodopa .	**2**

Key	Marks
1. a) Classification of drugs used in Parkinson Disease: ● Dopamine precursors (levodopa, carbidopa) ● Monoamine oxidase inhibitors (selegiline, rasagiline) ● COMT inhibitors (entacapone) ● Dopamine receptor agonist (bromocriptine) ● Amantadine ● Antimuscarinics (benztropine)	**3**
b) Gastrointestinal effects , Postural Hypotension , tachycardia . Dyskinesia , Behavioural effects	**2**

COGNITIVE LEVEL: Recall
DIFFICULTY LEVEL: Moderate
IMPORTANCE: Must Know
REFERENCE: Basic and Clinical Pharmacology by Katzung

OSPE COVER SHEET

Station Title: Sulphur ointment

Type of Station: Unobserved

Discipline / Specialty: Pharmacology

Marks: (5)

Class Level: 3rd Year MBBS

Time: 4 Minutes.

Estimated difficulty: Difficult

Exam: Early Session

Taxonomy level: Understanding & Application (Applying Knowledge in Practical Situations)

List of resources required: 2 chairs, 1 table / desk

Instructions for the Candidate: Your task is to read the provided scenario below thoroughly and then provide answers to the questions listed for the examiner.

Scenario :

A patient was referred to dermatologist by his GP with symptoms of severe itching especially at night and a pimple like skin rash.10% Sulphur ointment was prescribed based on provisional diagnosis of scabies.

TASK:

A) What is the composition of 10% Sulphur ointment?

B) Write down the steps of preparation of 90 grams of 10% Sulphur ointment.

Key:

A) Composition of sulphur ointment =10 % Sulfur powder + 90% Soft paraffin

B) Steps of preparation

For 100 grams ointment

Sulphur powder= 10 grams

Soft paraffin = 90 grams

For 90 Grams ointment

Sulphur powder =10/100 * 90 = 9 grams

Soft pasraffin = 90/100 * 90 = 81 grams

Mix the

Curricular Framework including Allocation of Hours (PMDC)

CURRICULUM DETAILS

Basic & Clinical Medical Sciences / Preclinical & Para Clinical Years			
1st & 2nd Professional Year	**3rd Professional Year**	**4th Professional Year**	**5th Professional Year**
Anatomy 500 Hours	**General & Special Pathology** 500 Hours	**Eye** 150 Hours	**General Surgery** 600 Hours
Physiology 450 Hours	**Pharmacology** 300 Hours	**ENT** 150 Hours	**General Medicine** 600 Hours
Biochemistry 250 Hours	**Forensic Medicine & Toxicology** 100 Hours	**General & Special Pathology** 500 Hours	**Paediatrics** 300 Hours
General Education 450 Hours • Quran Kareem – 50 Hours • Pakistan Studies / Ideology & Pakistan Constitution – 25 Hours • Islamiyat / Ethics – 25 Hours • Professionalism – 25 Hours • Communication Skills -25 Hours • English Expository Writing – 25 Hours • Arts & Humanities (One Course) -25 Hours • Co-curricular activities – 200 Hours	**Psychiatry & Beh. Sciences** 150 Hours	**Community Medicine & Public Health** 200 Hours	**OBS &Gynae** 300 Hours
	Pre-clinical Operative Dentistry 80 Hours	**Research Methodology & Evidence Based Medicine** 100 Hours	**Surgical specialties** 225 Hours • Neurosurgery • Vascular surgery • Adult Cardiac surgery • Paediatrics surgery • Thoracic surgery • Plastic surgery
			Medical specialties 225 Hours • Neurology • Rheumatology • Geriatrics • Endocrinology • Paediatrics Cardiology • Infectious Diseases • Oncology

Academic Planner

Avicenna Medical & Dental College

Calendar 2023- 2024

4th Year MBBS

January 2024

	Su	Mo	Tu	We	Th	Fr	Sa	
		1	2	10	4	5	6	
	7	8	9		11	12	13	
	14	15	16	17	18	19'	20	
	21	22	23	24	25	26	27	
	28	29	30	31				1

February 2024

	Su	Mo	Tu	We	Th	Fr	Sa	
					1	2	3	1
	4	15	6	7	8	9	10	2
	11	12	13	14	15	16	17	3
	18	19	20	21	22	23	24	4
	25	26	27	28	29			5
								6

March 2024

	Su	Mo	Tu	We	Th	Fr	Sa
						1	2
	3	4	5	6	7 EWT	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22 MWT	ii 23
	24	25	26 CM	27	28	29 GWT1	30
	31						

April 2024

	Su	Mo	Tu	We	Th	Fr	Sa	
6		1	2 SP	3	4	5	6	9
Eid-ul-Fitr	7	iii 8	iii 9	iii 10	iii 11	iii 12	iii 13	10
7	14	15	16	17	18 SP	19' EWT	20	11
8	21	22	23 Eye	24	25	26	27	12 ESE
9	28	29	30					13 ESE

May 2024

	Su	Mo	Tu	We	Th	Fr	Sa	
				iv 1	2	3 MWT	4	13 ESE
	5	6	7 SP	8	9	10 GWT2	11	14
	12	13	14 CM	15	16 Ebt	17	18	15
	19	20 CM	21 CM	22	23	24 Ebt	25	Eid-ul-Adha+Su.V
	26	27 SP	v 28	29 SP	30	31 Eye		Su.V
								Su.V

June 2024

	Su	Mo	Tu	We	Th	Fr	Sa
							1 Eye
	2	3	4	5 EWT	6	7	8
	9	10	11 SP	12	13	14	15
	16	vi 17	vi 18	vi 19	20	21	22
	23	24	25	26	27	28	29
	30						

July 2024

	Su	Mo	Tu	We	Th	Fr	Sa	
Su.V		1	2	3	4	5	6	17
Su.V	7	8	9	10	11	12	13	18
Su.V	14	15	vii 16	vii 17	18	19'	20	19
16	21	22	23	24	25	26 MWT	27	20 MSE
17	28	29	30 CM	31				21 MSE

August 2024

	Su	Mo	Tu	We	Th	Fr	Sa	
					1	2 GWT3	3	22 MSE
	4	5	6 Ebt	7	8	9	10	23 MSE
	11	12	13 Eye	viii 14	15	16	17	24 MSE
	18	19	20 SP	21	22 Ebt	23Ebt EWT	24	25
	25	26Ebt	27 Ebt O/V	28 Eye	29 Eye	30	31	26

September 2024

	Su	Mo	Tu	We	Th	Fr	Sa
	1	2 Eye	3Eye O/V	4 CM	5 CM	6 CM	7
	8	9CM	10 CM O/V	11 SP	12 SP	13 SP	14
	ix 15	16 SP	17 SP O/V	18	19	20 MWT	21
	22	23	24 CM	25	26	27 GWT4	28
	29	30					

October 2024

	Su	Mo	Tu	We	Th	Fr	Sa	
26			1	2	3	4	5	30
27	6	7	8 CM	9	10	11 EWT	12	31
28	13	14	15SP	16	17	18MWT	19	32
29	20	21	22	23	24	25 GWT5	26	33
30	27	28	29SP	30	31			34 LSE/Send Up

November 2024

	Su	Mo	Tu	We	Th	Fr	Sa	
						1	2	35 LSE/Send Up
	3	4	5Ebt	6	7	8 EWT	9	36 CR
	10	11	12 Eye	13	14	15 MWT	16	CR
	17	18	19	20	21	22 GWT6	23	Winter Vaca.
	24	25 CM	26	27	28Eye	29	30	

December 2024

	Su	Mo	Tu	We	Th	Fr	Sa
	1	2SP	3	4	5 Ebt	6 O/V	7
	8	9 O/V	10 O/V	11 O/V	12	13	14
	15	16	17	18	19	2	21
	22	23	24	x25	26	27	28
	29	30	31				

SESSION START: 28th Feb,2024

Gazetted Holidays

i- **Kashmir Holiday** - 5th Feb,2024

ii- **Pakistan Day** -23rd March,2024

iii - **Eid- Ul- Fitr**-8th April- 14th April,2024

iv- **Labor Holiday**- 1st May,2024

v- **Youm-e Takbeer Holiday**-28th May,2024

vi- **Eid- Ul- Adha**- 17th June- 19th June,2024

vii- **Ashura**- 16 &17 July,2024

viii- **Independence Day**- 14th Aug,2024

ix- **Rabi Ul Awal**-15th Sep,2024

x- Quaid-e-Azam Day/Christmas- 25th Dec,2024

Vacations

Spring Vacations-7th April,2024- 14th April,2024

Summer Vacations-15th June-22nd July,2024

Winter Vacations-22nd Dec-29th Dec,2024

Events

White Coat Ceremony-17 april,2024

Sports Day- 6 March,2024

Funfair-20th April,2024

Trips and Tours-

Session Exam

Early Session- 20th May,2024- 1st June,2024

Mid Session-22nd Aug,2024 - 17th Sep,2024

Late Session- 25th Nov,2024 - 11th Dec,2024

AVICENNA MEDICAL COLLEGE

ALLOCATION OF CURRICULUM HOURS

3rd YEAR MBBS

Subject Title	Tutorial	Practical	lecture	SDL	Assessment	CR	Clinical Skill	Total Hours (33 Weeks)	Interactive Session (6 Weeks)	AVMC	PMDC
pharmacology	11	33	198		49.5			291.5	53	344.5	300
Pathology	11	33	198		49.5			291.5	53	344.5	250
Forensic Medicine	11	33	66		49.5			159.5	29	188.5	100
Behavioral Sciences		33	66		49.5			148.5	27	175.5	150
Community Medicine				33				33	6	39	
Special Pathology											
Eye						11		11	2	13	
ENT						11		11	2	13	
Medicine				49.5		11	16.5	77	14	91	
Surgery				49.5		11	16.5	77	14	91	
Paeds						11		11	2	13	
Gynae						11		11	2	13	
Islamiyat											
Spare											
Total	**33**	**132**	**528**	**132**	**198**	**66**	**33**	**1122**	**204**	**1326**	**800**

Unit/ Chapter	Topic/ Content	Student Learning Objectives	Mode of Information (MOIT)	Learning Domain (KSA-Model)	Assessment Method (No. of Questions)			
					MCQS	SEQs	Viva	OSPE VIVA Or practical
General Pharmacology	• Pharmacokinetics • Pharmacodynamics	• Define pharmacology. Define Pharmacokinetics. • Enumerate various types of Routes of Administration • Enumerate Enteral Routes • Enlist the advantages & disadvantages of: Sublingual / Buccal, Oral Route, Rectal Route; give examples • Enlist the advantages & disadvantages of: Intravenous, Intra-arterial, Intramuscular, Subcutaneous routes; give examples • Enlist the advantages & disadvantages of Local Route / Topical Applications; give examples	• Lecture • Tutorial • Practical • SDL	Knowledge , Skills	1-8	1-2		

		• Identify the main Factors involved in drug-movement during absorption • Define First-Pass Effect with an example • Define Area under the curve (AUC) • Define Bioavailability and enlist the factors affecting it • Explain the relationship of Bioavailability vs. AUC • Explain the Clinical Importance of Plasma Protein Binding • Define Volume of Distribution (Vd) • Enlist the factors affecting Vd • Define Drug Redistribution, explain with anexample. • DefineDrug metabolism • Explain the Phase-I and Phase II reactions with example. • Define Enzyme Induction and Inhibition; give examples. • Define Biotransformation; give examples.						

		• Define Excretion, Elimination (Biodisposition) and clearance. • Define Zero-Order and First-Order Elimination; give examples. • Define plasma Half–Life (t ½), write its formula and clinical importance. • Define Steady State. • Define maintenance dose, loading dose. Learning outcomes: By the end of this session student should be able to: • Define Pharmacodynamics • Define Affinity, Efficacy, potency. • Define Agonist (or full agonist), partial agonist, inverse agonist with examples. • Define Spare receptor and give clinical importance • Define Transmembrane signalling • Identify the targets for G-Proteins • Enumerate the Effectors controlled by G-proteins						

		• Describe various Drug–antagonism types with examples • Define Median Effective (ED50), Median Toxic (TD50) & Median Lethal Dose (LD50)? • Define Therapeutic index and give clinical importance • Define Therapeutic window and give clinical importance. • Define Standard Margin of Safety? • Differentiate between Graded and Quantal dose-response curves • Explain the significance of Semi-log Transformation • Explain the information derived from a Quantal Dose Effect Curve • Define Desensitization, Tachyphylaxis, Tolerance, Resistance, super sensitivity, hypersensitivity, super infection, iatrogenic effect, idiosyncrasy, and give examples.						

		• Define Pharmacogenetics and give examples						
Autonomic Nervous System	• Introduction to Ans • Parasympathomimetics • Anti-Muscarinic • Sympathomimetic • Sympatholytic (Alpha & Beta blockers) • Neuromuscular Blockers	**Cholinergic System Learning outcomes:** By the end of this session student should be able to: • Classify cholinergic agonists and antagonists • Enlist the Clinical Uses of Cholinomimetics? • Enlist the Uses of Pilocarpine, Carbachol,Bethanechol, • Explain the Mechanism of Action of Edrophonium. • Enlist the Uses of Edrophonium. • Enlist the Uses of Neostigmine, Physostigmine&Rivastigmine? • Explain the mechanism of action of Organophosphorous Compounds • Explain the toxic effects of Organophosphorous Compounds • Explain the "aging" process. Describe the role of Pralidoxime. • Explain the Mechanism of Action of Succinylcholine.	• Lecture • Tutorial • Practical • SDL	Knowledge ,Skill	9-16	3-4		

		• Enlist the systemic effects of Atropine / Antimuscarinics. • Enlist the therapeutic Uses of antimuscarinics. • Enumerate the side effects, toxicity and contraindications of Atropine. **Adrenergic systems Learning outcomes:** • Describe general characteristics of catecholamines? • Enlist the therapeutic uses, adverse effects and contraindications of Epinephrine and Dopamine? • Enlist the Uses of Isoproterenol, phenylephrine and Dobutamine • Enlist the uses of Albuterol /Salbutamol, Ritodrine / Terbutaline • Explain the mode of Action and uses of Fenoldopam? • Explain the mechanism of action, uses and toxicity of Amphetamine? • Classify alpha and beta blockers • Enumerate the Uses of Prazosin? • Enlist Adverse Effects of Prazosin and should know about its withdrawal effects and how that can be handled?						

		• Enumerate Uses of Phenoxybenzamine, phentolamine and tamsulosin? • Enumerate Uses, adverse effects and contraindications of Propranolol? • Enlist the Uses of Timolol and Labetalol? • Compare the characteristics of Reserpine and Guanethidine.						
Cardiology & Haematology	• AntiHypertensives • Anti Anginal • Drugs used in CCF • Anti Arrythmics • Diuretics • Drugs used in Anemia • Anti-Coagulants • Anti Platelet drugs • Fibrinolytics • Drugs used in Bleeding Disorders • Anti hyper lipidemics	**Anti-hypertensive drugs :** By the end of this session student should be able to: • Classify anti-hypertensives • Explain the mechanism of action, uses and adverse effects of Diuretics • Describe the Drug Interactions of Furosemide (Loop Diuretics) • Enlist the Contraindications of Mannitol (Osmotic Diuretics) • Explain the Mode of Action, uses and adverse effects of Clonidine • Explain the Mode of Action, uses and adverse effects of Methyldopa? • Enumerate the Therapeutic Uses of Ca++ Channel Blockers? • Describe the rationale for the use of: CCBs in: Angina (variant, stable, unstable) Arrhythmias Hypertension? • Enumerate the Adverse Effects, drug interactions and contraindications of CCBs	• Lecture • Tutorial • Practical • SDL	Knowledge ,Skill	17-26	5-6		

		• Describe the Mechanism of Action, adverse effects and uses of ACEIs? • Explain the Mechanism of Action of Losartan? • Explain the Mechanism of Action of Vasodilators? • Enlist the Adverse Effects of Hydralazine, Monoxidil and Diazoxide? • Describe the role of beta blockers in hypertension. **Anti-anginal drugs:** By the end of this session student should be able to: • Explain the Antianginal Mechanism of Nitroglycerine? • Enumerate the Uses, adverse effects and drug interactions of Nitroglycerine? • Explain the Anti-anginal mechanism of Beta blockers? • Explain the Mechanism of Action of Ranolazine? **Anti-arrhythmic drugs**: By the end of this session student should be able to: • Classify anti-arrhythmic drugs • Explain the Mechanism of Action of class 1A, 1B and 1C drugs? • Enumerate the adverse Effects of Procainamide, Quinidine, Lidocaine, adenosine and Amiodarone?						

		Drugs for CCF: By the end of this session student should be able to: • Classify the drugs for CCF • Explain the MOA, electrical and mechanical effects of Digoxin • Describe Toxicity and treatment of toxicity of digoxin? • Explain the Role of beta blockers in CCF. **Drugs used for Blood disorders** : ● Use of iron ,Vit B12 along with its toxicity ● Treatment of Acute Iron Toxicity ● Treatment of Pernicious Anemia ● Uses of folic Acid ● Classification of haematopoietic growth factors ● Classification of Anti coagulants with understanding of LMWH & HMWH ● Difference between Heparin & Warfarin. ● Anti platelet drugs ● Explain why heparin is used in low dose as an antiplatelet drug ● Mechanism of action of ADP receptor blockers ● Difference between Clopidogral & ticlopidine ● Mechanism of action of fibrinolytics. ● Vitamin k ● Statins and its adverse effects						

		• Understanding of Fibrates, niacin, and bile acid binding resins						
Neurology, Psychiatry & Anesthesiology	• Local & general Anesthetics • Central and peripheral Muscle Relaxants • Alcohal • Sedatives • Hypnotics • Anti epileptics • Anti Depressants • Anti Psycotics • Opioids	**Anesthesiology:** By the end of this session student should be able to understand: • Mechanism and classification of local anesthetics • Understanding of Inhaled and intravenous general Anesthetics. • Mac Value and its significance **Sedative/hypnotics Learning outcomes**: By the end of this session student should be able to: • Differentiate between Diazepam and Barbiturates? • Enlist the toxic effects and uses of Diazepam and Barbiturates? • Enlist the Uses of Zolpidem? • Explain the Mechanism of Action of Buspirone and differentiate it from benzodiazepines? • Explain the Mechanism of Action and uses of Ramelteon? • Describe the rationale for the use of Flumazenil in benzodiazepine toxicity	• Lecture • Tutorial • Practical • SDL	Knowledge ,Skill	27-36	7-8		

		• Enumerate Ethanol Adverse effects / Drug Interactions • Describe the role of Benzodiazepines in prevention and treatment of acute ethanol withdrawal syndrome • Enumerate the toxic effects of Methanol Poisoning • Describe the rationale for the use of: • Disulfiram in alcoholics • Fomepizole in methanol poisoning • Naltrexone in risk of relapse in alcoholism • Thiamine (vitamin B1) in acute alcohol intoxication or alcohol withdrawal syndrome? **Anti-epileptic drugs Learning outcomes**: By the end of this session student should be able to: • Classify anti-epileptic drugs • Explain the Mechanism of Action, uses, adverse effects and drug interactions of Phenytoin, Carbamazepine, Valproic acid and Ethosuximide? **Skeletal muscle relaxants**: Learning outcomes: By the end of this session student should be able to: • Explain the Mechanism of action Succinylcholine / Depolarizing Neuromuscular Blocking Agent • Describe the Clinical Applications of Succinylcholine /						

		Depolarizing Neuromuscular Blocking Agent • Enumerate the adverse effects of Succinylcholine / Depolarizing Neuromuscular Blocking Agent • Explain Mechanism of action of d-Tubocurarine • Enumerate the Clinical Applications and adverse effects of d-Tubocurarine • Describe the drug Baclofen. **Anti-parkinsonian drugs Learning outcomes**: By the end of this session student should be able to: • Classify the drugs for parkinsonism • Explain the Mechanism of action of Levodopa • Enumerate the Clinical Applications, adverse effects and Drug Interactions of Levodopa • Describe the rationale for the use of the following in parkinsonism : Levodopa + carbidopa (Sinemet)? Levodopa + carbidopa + entacapone • Enlist the uses of Bromocriptine? • Describe the role of Apomorphine in dyskinesia? • On and off phenomenon Anti-psychotic drugs Learning outcomes: By the end of this session student should be able to: • Classify anti-psychotics						

		• Give the Clinical Applications, adverse effects and drug interactions older and newer anti-psychotic drugs • Explain the Mechanism of action, adverse effects and drug interactions of Lithium. **Anti-Depressant drugs** : By the end of this session student should be able to: • Classify anti-depressants • Explain the Mechanism of action, uses, adverse effects and drug interactions of TCAs, SSRIs? **OPIOIDs**: By the end of this session student should be able to: • Enumerate the sites of action / receptors of Opioids. • Explain the effects of Opioid Receptors • Describe the actions Morphine and other Opioids • Enumerate the adverse effects / toxic effects of Morphine / Opioids • Describe the rationale for the use of: Naloxone in Morphine / Opioid toxicity • Explain the management of withdrawal effects of Morphine / Opioids • Enumerate the Clinical Applications of Buprenorphine, codeine, tramadol, heroine, methadone, Dextromethorphan.						

Pulomonology and Gastroenterology	Treatment of Asthma, Cough Drug Treatment of acid peptic disease, vomiting, constipation and diarrhea	By the end of this topic, students will be able to: • Classify drugs used for the treatment of Bronchial Asthma & COPD. • Explain their mechanism of action, clinical uses and adverse effect • Describe the role of corticosteroid in asthma • Enumerate drugs used for cough • Describe their mode of action with adverse effects. **Gastroenterology**: • Classify drugs used for the treatment of acid peptic disease • Explain their mechanism of action, clinical uses and adverse effect • Enumerate triple and quadruple therapy for H. pylori induced peptic ulcer • Enumerate drugs used for vomiting	• Lecture • Tutorial • Practical • SDL	Knowledge ,Skill	37-41	9		

		• Describe their mechanism of action, clinical uses and adverse effect • Enlist different groups of drugs used as a laxative and purgative • Discuss their mechanism of action, clinical uses and adverse effect • Enumerate drugs used for diarrhea						
Chemotherapy	• Cell wall synthesis inhibitors . • Protein synthesis inhibitors • Fluoroquinolones • Sulfonamide • Anti-protozoal drugs • Anti-Tuberculous drugs • Antifungal drugs • Anti helminthes • Anti-cancer drugs	**Cell wall synthesis inhibitors** • Explain the Mechanism of Action, spectrum, uses and adverse effects of Penicillin • Enumerate the Antimicrobial Spectrum& the Clinical applications of Ampicillin, Amoxicillin, Ticarcillin, Piperacillin, Nafcillin, Oxacillin, Benzathine Penicillin, & Procaine Penicillin? • Classify cephalosporins, spectrum and uses of all generations • Explain the mechanism of action, Antimicrobial Spectrum, Clinical applications & adverse effects of Imipenem-cilastin, Aztreonam & Vancomycin. **Protein synthesis inhibitors** Explain the Mechanism of Action, spectrum, uses and adverse effects of Tetracyclines? • Fanconi's syndrome	• Lecture • Tutorial • Practical • SDL	Knowledge ,Skill	42-51	10-11		

		• Describe the Antimicrobial Spectrum & the Clinical applications of Doxycycline, Minocycline, Tigecycline? • Explain the mechanism of action, spectrum, uses and adverse Effects Macrolides? • Describe the Antimicrobial Spectrum & the Clinical applications of Clarithromycin, Azithromycin? • Explain the Mechanism of Action and adverse effects of Clindamycin? • Explain the Mechanism of Action, spectrum, uses, adverse effects of Chloramphenicol? • Describe gray-baby syndrome • Enumerate Aminoglycosides. • Explain the Mechanism of Action, spectrum, uses, adverse effects and drug interactions of Describe the Mechanism of Action, uses and spectrum of Sulfonamides / Co-trimoxazole? • Enlist the Adverse Effects of Sulfonamides. **Nucleic acid Synthesis Inhibitors** • Explain the Mechanism of Action, uses and adverse effects of fluoroquinolones?						

		• Explain the Clinical applications Norfloxacin, Ofloxacin, • Levofloxacin, Gemifloxacin and moxifloxacin **Antimycobacterials:** • Enumerate First Line & Second Line Antituberculars • Explain the role of pyridoxine (ViatmB6)With isoniazid • Describe the mechanism of action, Clinical Uses, adverse effects and resistance of Isoniazid (INH), rifampicin, pyrazinamide, Ethambutol and streptomycin? • Enlist the drugs used for treating leprosy. **Anti-Malarial & anti-amoebic drugs**: • Classification of Antimalarials. • Explain the Mechanisms of action, Clinical applications, & Toxicity of Quinine, Chloroquine, Mefloquine &Primaquine • Enlist Various Combinations useful as antimalarial. • Enlist Drugs useful in Uncomplicated & Severe Complicated in Malaria • Classification of antiamoebics. • Enumerate the drugs used in Luminal, Systemic & Mixed amoebiasis. • Mechanisms of action, Clinical applications, & Toxicity						

		of Metronidazole, Diloxanide furoate **Anti-leishmaniasis and drugs for trypanosomiasis:** • Enlist the drugs, actions and uses for specific diseases **Anti-cancer drugs** • Anticancer drugs (Classification, common therapeutic uses and adverse effects of drugs enlisted in the "Drug List" only). • Immunosuppressive agents' esp. useful in organ transplants. (Classification and common therapeutic uses and adverse effects only). **Anti-Viral drugs**: • Classify Antivirals • Explain the Mechanisms of Action, uses and adverse effects of Acyclovir, etc • Enumerate Anti-Hepatitis Drugs; what are their group actions. • Explain the Mechanisms of Action, uses and adverse effects of Interferons? • Enumerate Anti-Influenza Drugs; what are their group actions. • Explain mechanism of action, antiviral spectrum, clinical applications & toxic effects of Amantadine etc. • Explain the mechanism of action, antiviral spectrum,						

		clinical applications & toxic effects of Antiretroviral Drugs • Enumerate Nucleoside/nucleotide Reverse Transcriptase Inhibitor (NRTIs); what are their actions. **Anti Fungals:** Explain Mechanism of Action, uses and adverse effects of Amphotericin–B, Azoles, Flucytosine, Greisofulvin?						
Rheumatology & Gout	• NSAIDS • DMARDS • Anti Gout drugs • Anti histamines • Corticosteroids	By the end of session students should know how to**:** • Classify **Nsaids** • Differentiate between Non Selective and Selective Cox inhibitirs • Mechanism of action of Colchicine, Allopurinol & Uricosuric drugs • Describing the mechanism of action & rational of using important Dmards (Merhotrexate,Azatgioprime,cyclophosphamide, hydroxychloroquine **Corticosteroids** • Explain the Mechanism of Action, Pharmacological Effects, Therapeutic Uses, Adverse Effects & Drug interactions of Corticosteroids	• Lecture • Tutorial • Practical • SDL	Knowledge ,Skill	52-55	12		

Endocrinology	Hypothalamic and pituitary hormones Antithyroid drugs Treatment of Diabetes Corticosteroids Bone Mineral homeostasis	By the end of this session student should be able to: •Classify **anti-thyroid drugs** • Explain the Mechanism of Action, uses and adverse effects of Methimazole / propylthiouracil, Lugol's solution / Potassium iodide? • Enumerate the uses and adverse effects of 131I? • Explain Antithyroid Mechanism of beta blockers? Explain the Mechanism of Action, Pharmacological Effects, Therapeutic Uses, Adverse Effects & Drug interactions of Ethinyl-estradiol and Progestins. • Explain the Mechanism of Action, Pharmacological Effects, Therapeutic Uses, Adverse Effects & Drug interactions of Tamoxifen (Antiestrogens-SERMS) • Explain the Mechanism of Action, Pharmacological Effects, Therapeutic Uses, Adverse Effects & Drug interactions of Clomiphene. **Drugs Effecting Bone Mineral Hemostasis**: Cholecalciferol, ergocalciferol . Mechanism of action of Bisphosphonates. Parathyroid hormone analogs. Use of Calcitonin for Osteoporosis. **Drugs for diabetes:**	• Lecture • Tutorial • Practical SDL	Knowledge ,Skill	56-60	13		

		Explain the characteristics of Rapid-acting-Lispro, Aspart, Glulisine, Short acting-Regular, Intermediate-acting-NPH, Long acting-Detemir, Glargine • Explain the Mechanism of action, uses and adverse effects of Insulins? • Classify oral hypoglycemic drugs • Explain Mechanism of action, uses and adverse effects of sulfonylureas, biguanides (metformin), DPP4 inhibitors, thiazolidinediones and Acarbose (Alpha-Glucosidase Inhibitors?						
Miscellaneous Topics	Dermatology Vitamins Heavy metals & Antidotes	By the end of the session , students should be able to : • define antiseptics, disnfectants and sterilants. • Enlist toxic chemicals of environments • Differentiate between pesticides & herbicides • Enlist heavy metals & chelators along with their toxicities.	• Lecture • Tutorial • Practical SDL	Knowledge ,Skill	61-65	14		

Table of Specification

List of Practicals

Practicals	Student Learning Objectives	Mode of Information (MOIT)	Learning Domain (KSA-Model)	Assessment Method (No. of Questions)			
				MCQS	SEQs	Viva	OSPE or Practical
Pharmacy Practicals : ● Introduction to pharmacy ● Dosage forms ● Weights and measures ● Labelling and wrapping ● Preparation of Carminative mixture ● Prepare and dispense 100ml of 0.1% KMnO4 solution by	Students should be able to understand the basic knowledge of: • dosage forms • Conversion of different measuring units • Composition & Calculation of ingredients for various doses. • Abbreviations used in prescription writing. • Parts of prescription & specimen prescription for several common diseases. • Preferred drug in terms of efficacy,cost effectiveness &	Practical	Knowledge ,Skill, Attitude			3	Observed: 1 Unobserved: 5

using stock solution ● Prepare and dispense APC powder ● Prepare and dispense 12gm of Sulphur ointment 10% B.P. ● Preparation of Normal Saline - Preparation of 5% Dextrose in 500ml of normal saline ● Prepare 1000ml of ORS ● Prepare and dispense Castor oil emulsion	concomitant pathologies.						

• Abbreviations • Prescription writing • P-drug (Preferred drug)							
Experimental Pharmacology: • To study the effects of drugs on frog's heart. • To study the antagonism between acetylcholine and gallamine on frog's rectus abdomine. • To study the effects of drugs on	By the end of the session students should be able to understand : • Effects of different drugs on animal tissues, e.g Effects of acetylcholine and atropine on rabbits ileum etc.		Knowledge ,Skill, Attitude			3	Observed: 1

reflex time in frog ● To study the effects of drugs on rabbit's eye ● To study the effects of drugs on isolated place of Rabbit’s ileum ● To prepare the dose response curve of acetylcholine on intestinal smooth muscle of the rabbit ● To study the antagonism between acetylcholine and atropine .							

Total							

Assessment Schedule

Avicenna Medical College

3rd Year MBBS (M-21)

1st Term Test Schedule

Week	Date	Day	Subject	Test	Topic	Reference
1st	12-Feb-24	Mon	All Subjects	Lecture	Lecture Time Divided	
2nd	19-Feb-24	Mon	All Subjects	Lecture	Lecture Time Divided	
3rd	26-Feb-24	Mon	Pathology	Grand Test+Key Discussion+Viva	Cell Injury	Robbins Pathology 10th Ed: Chapter 2
	27-Feb-24	Tue	Pathology	OSPE		
4th	4-Mar-24	Mon	Pharmacology	Grand Test+Key Discussion+Viva	General Pharmacology	Katzung ed. 14 Ch:1-5
	5-Mar-24	Tue	Pharmacology	OSPE		
5th	11-Mar-24	Mon	For. Medicine	Grand Test+Key Discussion+Viva	Law , legal procedures, medical jurispudence and Forensic Psychiatry	NRA (1st edition), pages 1-23 Parikh (7th edition), pages 441-463.
	12-Mar-24	Tue	For. Medicine	OSPE		
6th	18-Mar-24	Mon	Beh. Science	Grand Test+Key Discussion+Viva	Section A: Behavioural Sciences & their relevance to healthcare	Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 1-33
	19-Mar-24	Tue	Beh. Science	OSPE		

7th	25-Mar-24	Mon	Pathology	Grand Test+Key Discussion+Viva	General Bacteriology/ Gram Positive Bacteria	Levinson 17th edition Part I & Chapter 15, 17, 22
	26-Mar-24	Tue	Pathology	OSPE		
8th	1-Apr-24	Mon	Pharmacology	Grand Test+Key Discussion+Viva	ANS	Katzung ed. 14 ch:9-10
	2-Apr-24	Tue	Pharmacology	OSPE		
Eid- Ul- Fitr Holidays: 7th April ,2024 - 14th April ,2024						
9th	15-Apr-24	Mon	All Subjects	Lecture	Lecture Time Divided(Wed &Thu lectures)	
	16-Apr-24	Tue	Ward Test-1			
	17-Apr-24	Wed	For. Medicine	Grand Test+Key Discussion+Viva	Personal Identity, DNA Identification, Thanatology	NRA(1st Edition), Pages 31-45 Parikh (7th Edition), pages 55-86. Nasib R. Awan (1st Edition), Pages 91-105, Parikh (7th Edition), pages 137-163.
	18-Apr-24	Thu	For. Medicine	OSPE		

10th	22-Apr-24	Mon	Beh. Science	Grand Test+Key Discussion+Viva	Section B: Medical Ethics & professionalism	Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 35-61
	23-Apr-24	Tue	Beh. Science	OSPE		
11th	29-Apr-24	Mon	Pathology	Grand Test+Key Discussion+Viva	Inflammation/ Healing & Repair/ Haemodynamics	Robbins Pathology 10th Ed: Chapter 3, 4
	30-Apr-24	Tue	Pathology	OSPE		
12th	6-May-24	Mon	Pharmacology	Grand Test+Key Discussion+Viva	CVS	Katzung ed.14 Ch:9,10
	7-May-24	Tue	Pharmacology	OSPE		
Early Session: 13th May,2024 - 29th May,2024						
13th	13-May-24	Mon	Pharmacology	ESE+VIVA	Syllabus covered till E.S	
13th	14-May-24	Tue	Day Off			
13th	15-May-24	Wed	Day Off			
13th	16-May-24	Thu	Forensic Medicine	ESE+VIVA	Syllabus covered till E.S	

13th	17-May-24	Fri	Day Off		
13th	18-May-24	Sat	Day Off		
14th	19-May-24	Sun	Day Off		
14th	20-May-24	Mon	Pathology	ESE+VIVA	Syllabus covered till E.S
14th	21-May-24	Tue	Day Off		
14th	22-May-24	Wed	Beh. Science	ESE+VIVA	*Behavioural Sciences & their relevance to healthcare, Medical ethics & professionalism*
14th	23-May-24	Thu	OSPE		
14th	24-May-24	Fri	OSPE		
14th	25-May-24	Sat	Day Off		
15th	26-May-24	Sun	Day Off		
15th	27-May-24	Mon	OSPE		
15th	28-May-24	Tue	Youm-e-Takbeer Holiday-28th May,2024		
15th	29-May-24	Wed	OSPE		
End Of 1st Term					

Avicenna Medical College

3rd Year MBBS (M-21)

2nd Term Test Schedule

Week	Date	Day	Subject	Test	Topic	Reference
16th	3-Jun-24	Mon	For. Medicine	Grand Test+Key Discussion+Viva	Autopsy, General Trauma and Regional injuries	NRA (1st Edition), Pages 46-69, 118-130 Parikh (7th Edition), pages 87-120, 211-231, 287-315.
	4-Jun-24	Tue	For. Medicine	OSPE		
	4-Jun-24	Tue	Ward Test-2			
17th	10-Jun-24	Mon	Beh. Science	Grand Test+Key Discussion+Viva	Section C- 1st Half : Psychology in medical practice	Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 63-123
	11-Jun-24	Tue	Beh. Science	OSPE		
Summer Vacations+ Eid- Ul- Adha: 15th June ,2024 - 21st July ,2024						
18th	22-Jul-24	Mon	Pathology	Grand Test+Key Discussion+Viva	Gram Negative Bacteria/ Mycology/ Parasitology	Levinson 17th edition chapter 16, 18-26. Part V, Part VI
	23-Jul-24	Tue	Pathology	OSPE		

19th	29-Jul-24	Mon	Pharmacology	Grand Test+Key Discussion+Viva	Blood & GIT	Katzung ed. 14, CH:26,28
	30-Jul-24	Tue	Pharmacology	OSPE		
20th	5-Aug-24	Mon	For. Medicine	Grand Test+Key Discussion+Viva	Accidents in home and environment, Firearm injuries and Road Traffic Accidents	NRA(1st Edition), Pages 70-75, Parikh (7th Edition), pages 232-243, 332-364, 317-331 NRA(1st Edition), Pages 59-65, 116-117.
	6-Aug-24	Tue	For. Medicine	OSPE		
	8-Aug-24	Thu	Ward Test-3			
21st	12-Aug-24	Mon	Beh. Science	Grand Test+Key Discussion+Viva	Section C- 2nd Half : Psychology in medical practice&Section D	Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 108-140
	13-Aug-24	Tue	Beh. Science	OSPE		
22nd	19-Aug-24	Mon	Pathology	Grand Test+Key Discussion+Viva	Neoplasia/ Genetics	Robbins Pathology 10th edition chapter 5, 7
	20-Aug-24	Tue	Pathology	OSPE		
23rd	26-Aug-24	Mon	Pharmacology	Grand Test+Key Discussion+Viva	CNS	Katzung ed. 14 CH
	27-Aug-24	Tue	Pharmacology	OSPE		
Mid Session Exam: 28th Aug,2024 - 26th Sep,2024						

23rd	28-Aug-24	Wed	Forensic Medicine	RT-1	Law, legal procedures, Medical Jurisprudence, Forensic psychiatry, Personal identity, and thanatology	NRA (1st edition), pages 1-23 Parikh (7th edition), pages 441-463. NRA(1st Edition), Pages 31-45 Parikh (7th Edition), pages 55-86. Nasib R. Awan (1st Edition), Pages 91-105, Parikh (7th Edition), pages 137-163.
23rd	29-Aug-24	Thu	Forensic Medicine	RT-2	Medicolegal Autopsy, General truama and Regional injuries	NRA (1st Edition), Pages 46-69, 118-130 Parikh (7th Edition), pages 87-120, 211-231, 287-315.
23rd	30-Aug-24	Fri	Forensic Medicine	RT-3	Accidents in home and environment, Firearm injuries and Road traffic accidents	NRA(1st Edition), Pages 70-75, Parikh (7th Edition), pages 232-243, 332-364, 317-331 NRA(1st Edition), Pages 59-65, 116-117.
23rd	31-Aug-24	Sat	Day Off			
24th	1-Sep-24	Sun	Day Off			
24th	2-Sep-24	Mon	Forensic Medicine	MSE+Viva	Syllabus covered till mid session	
24th	3-Sep-24	Tue	Pharmacology	RT-1		
24th	4-Sep-24	Wed	Pharmacology	RT-2		
24th	5-Sep-24	Thu	Pharmacology	RT-3		
24th			Ward Test-4			

24th	6-Sep-24	Fri	Pharmacology	RT-4		
24th	7-Sep-24	Sat	Day Off			
25th	8-Sep-24	Sun	Day Off			
25th	9-Sep-24	Mon	Pharmacology	MSE+Viva	Syllabus covered till mid session	
25th	10-Sep-24	Tue	Pathology	RT-1	Cell Injury	Robbins Pathology 10th Ed: Chapter 2
25th	11-Sep-24	Wed	Pathology	RT-2	General Bacteriology/ Gram Positive Bacteria	Levinson 17th edition Part I & Chapter 15, 17, 22
25th	12-Sep-24	Thu	Pathology	RT-3	Inflammation/ Healing & Repair/ Haemodynamics	Robbins Pathology 10th Ed: Chapter 3, 4

25th	**13-Sep-24**	**Fri**	**Pathology**	**RT-4**	**Gram Negative Bacteria/ Mycology/ Parasitology** Neoplasia/ Genetics	**Levinson 17th edition chapter 16, 18-26. Part V, Part VI** Robbins Pathology 10th edition chapter 5, 7
25th	**14-Sep-24**	**Sat**	**Day Off**			
26th	**15-Sep-24**	**Sun**	**Day Off**			
26th	**16-Sep-24**	**Mon**	**Pathology**	**MSE+Viva**	**Syllabus covered till mid session**	
26th	**17-Sep-24**	**Tue**	**Rabi- ul -Awal Holiday**			
26th	**18-Sep-24**	**Wed**	**Beh Sciences**	**RT-1**	**Section A&Section B**	**Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 1-62**
26th	**19-Sep-24**	**Thu**	**Beh Sciences**	**RT-2**	**Section C&Section D**	**Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 63-140**
26th	**20-Sep-24**	**Fri**	**Beh Sciences**	**MSE+Viva**	**Syllabus covered till mid session**	

25th	**13-Sep-24**	**Fri**	**Pathology**	**RT-4**	**Gram Negative Bacteria/ Mycology/ Parasitology** Neoplasia/ Genetics	**Levinson 17th edition chapter 16, 18-26. Part V, Part VI** Robbins Pathology 10th edition chapter 5, 7
25th	**14-Sep-24**	**Sat**	**Day Off**			
26th	**15-Sep-24**	**Sun**	**Day Off**			
26th	**16-Sep-24**	**Mon**	**Pathology**	**MSE+Viva**	**Syllabus covered till mid session**	
26th	**17-Sep-24**	**Tue**	**Rabi- ul -Awal Holiday**			
26th	**18-Sep-24**	**Wed**	**Beh Sciences**	**RT-1**	**Section A&Section B**	**Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 1-62**
26th	**19-Sep-24**	**Thu**	**Beh Sciences**	**RT-2**	**Section C&Section D**	**Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 63-140**
26th	**20-Sep-24**	**Fri**	**Beh Sciences**	**MSE+Viva**	**Syllabus covered till mid session**	
26th	**21-Sep-24**	**Sat**	**Day Off**			
27th	**22-Sep-24**	**Sun**	**Day Off**			
27th	**23-Sep-24**	**Mon**	**OSPE**			
27th	**24-Sep-24**	**Tue**	**OSPE**			
27th	**25-Sep-24**	**Wed**	**OSPE**			
27th	**26-Sep-24**	**Thu**	**OSPE**			
End Of 2nd Term						

Avicenna Medical College

3rd Year MBBS (M-21)

3rd Term Test Schedule

Week	Date	Day	Subject	Test	Topic	Reference
28th	30-Sep-24	Mon	All Subjects	Lecture	Lecture Time Divided	
	1-Oct-24	Tue	All Subjects	Lecture	Lecture Time Divided	
	3-Oct-24	Thus	For. Medicine	OSPE	Asphyxia, Sexual Offenses and related crimes	Nasib R. Awan (1st Edition), Pages 76-84, 103-115, Parikh (7th Edition), pages 367-437, 165-190
	4-Oct-24	Fri	For. Medicine	Grand Test+Key Discussion+Viva		
29th	7-Oct-24	Mon	Beh. Science	Grand Test+Key Discussion+Viva	Section E ;Psychosocial aspects of haelth & disease	Handbook of Behavioural sciences, 3rd Edition, MH Rana, Page no 143-228
	8-Oct-24	Tue	Beh. Science	OSPE		
	10-Oct-24	Thus	Ward Test-5			
30th	14-Oct-24	Mon	Pathology	Grand Test+Key Discussion+Viva	Immunology/ Virology	Levinson 17th Edition Part III, Part IV, Part VII
	15-Oct-24	Tue	Pathology	OSPE		

31st	**21-Oct-24**	**Mon**	**Pharmacology**	**Grand Test+Key Discussion+Viva**	**ENDO**	**Katzung ed. 14**
	22-Oct-24	**Tue**	**Pharmacology**	**OSPE**		
32nd	**28-Oct-24**	**Mon**	**For. Medicine**	**Grand Test+Key Discussion+Viva**	**General and Special Toxicology**	**Parikh 7th Edition, pages 507-691**
	29-Oct-24	**Tue**	**For. Medicine**	**OSPE**		
33rd	**4-Nov-24**	**Mon**	**Beh. Science**	**Grand Test+Key Discussion+Viva**		
	5-Nov-24	**Tue**	**Beh. Science**	**OSPE**		
	7-Nov-24	**Thus**	**Ward Test-6**			
34th	**11-Nov-24**	**Mon**	**Pharmacology**	**Grand Test+Key Discussion+Viva**		
	12-Nov-24	**Tue**	**Pharmacology**	**OSPE**		
Send-Up: 14th Nov,2024- 29th Nov,2024						
End Of 3rd Term						


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