MUHAMMAD DENTAL COLLEGE
MIRPURKHAS

DEPARTMENT OF DENTAL EDUCATION
STUDY GUIDE
SECOND YEAR BDS PROGRAM-2026
MODULAR CURRICULUM
BATCH-VI
2025-2026

ABBREVIATIONS

ASSIG/AS	**Assignment**
BCQS	**Best Choice Questions**
CBL	**Case Based Learning**
CDC	**Curriculum Development Committee**
CME	**Continuous Medical Education**
CP	**Class Presentation**
CQ	**Class Quiz**
CR	**Clinical Rotation work in OPD**
CS	**Clinical Session**
CW	**Clinical work (OPD)**
HEC	**Higher Education Commission**
HO	**House Officers**
HOD	**Head of the Department**
IL	**Interactive Lecture**
MIT	**Modes of Information Transfer**
MOD	**Modular**
OMFS	**Oral And Maxillofacial Surgery**
OPD	**Outpatient Department**
OSCE	**Objective Structured Clinical Evaluation**
OSPE	**Objective Structured Practical Evaluation**
PBL	**Problem-Based Learning**
PMDC	**Pakistan Medical and Dental Council**
PPT	**PowerPoint Presentation**
PW	**Practical work**
QEC	**Quality Enhancement Cell**
SC	**Short case**
SEQS	**Short Essay Questions**
SGD/S	**Small Group Discussion/Session**
SGIS	**Small Group Interactive Session**
Skill Lab	**Phantom Lab**
SURVIVE	**Online Weekly assessment**
SS	**Self-Study**
Viva	**Viva**
VD	**Visual Display**

MISSION STATEMENT OF MOHAMMAD DENTAL COLLEGE

Nurturing students' potential by providing them the highest quality education, thereby producing individuals with strong values, compassion, **inclusiveness, leadership** and professionalism, emphasizing community engagement, particularly with marginalized segments of the rural population, encouraging students to become empathetic and socially responsible professionals by training them in the best evidence- based practice, capable of contributing to advancements through research and innovation.

VISION OF ISUM

To be an internationally recognized institution, famous for its ethical work, emphasizing the importance of integrity, honesty, and moral principles, highlighting the University 's commitment to serving the community and producing unbiased and empathetic educated people, **who are inclusive and have leadership skills**, encouraging them to engage in research, critical thinking, innovation, and evidence-based best practices.

VISION OF LIAQUAT UNIVERSITY OF MEDICAL AND HEALTH SCIENCES (LUMHS)

Liaquat University of Medical and Health Sciences (LUMHS) seeks to be a top-tier healthcare Institution, producing ingenious academic leaders, medical researchers, and healthcare advocates to serve the global community.

BDS PROGRAM OUTCOMES

By the end of the Four years of BDS program at MUHAMMAD DENTAL COLLEGE (aims to produce dental graduates who are able to:

- Demonstrate appropriate basics knowledge of medical and dental sciences.
- Evaluate the use of laboratory tests and imaging studies and interpret the results to arrive at clinical decision making by critical thinking.
- Recognize patient with special care and perform dental emergencies having good communication skills.
- Engage in research activity aimed at improvement of quality of health care including behavior modification of individual and community for quality life
- Elicit professional skills while providing patient centered care by relevant and comprehensive physical and dental examination.
- Commit to lifelong learning to keep up to date with developments in dental practice and trends in disease at population level by strong leadership and management skills.
- To exhibit ethical patient-centered care based on integrity, humility, social accountability and high ethical values of this sacred profession

GOALS AND OBJECTIVES: COMPETENCIES REQUIRED IN A DENTIST TO BE ACHIEVED AT THE UNDERGRADUATE LEVEL

STANDARDS OF SEVEN STARS COMPETENCIES

The goal of creating a medical curriculum is to create skilled, compassionate, and effective medical professionals who can offer patients high-quality care. A modular integrated curriculum that synchronizes the BDS program results with the nationally designated seven-star doctor competencies has been developed in order to accomplish this goal.

The following are the anticipated general competencies for a medical/dental graduate:

1. **Skillful**
2. **Knowledgeable**
3. **Community Health Promoter**
4. **Critical Thinker**
5. **Professional**
6. **Scholar**
7. **Leader and Role Model**

"A seven-star physician" A Pakistani medical graduate ought to exhibit the different qualities listed under each competency. These qualities are the absolute necessities.

The program's results are comparable to those that the country's regulatory bodies have processed for BDS graduates up to this point. These seven-star competencies are translated into the session-specific learning objectives by the curriculum outcomes.

A Pakistani medical graduate who has become a "seven-star doctor" is supposed to exhibit a range of qualities within each competency, according to the national regulating authorities. These characteristics are deemed necessary and need to be demonstrated by the person both personally and professionally.

A 'seven-star doctor' Pakistani medical/dental graduate should be able to demonstrate various traits as detailed under each competency. These attributes are minimum and not exhaustive by any means.

I. **Skills:** *Under Graduates must be competent to:*

1.1 Apply appropriate interpersonal and communication skills.

1.2 Apply psycho-social and behavioral principles in patient-centered health care.

1.3 Communicate effectively with individuals from diverse populations.

1.4 Well versed with basic dental morphology and application of dental materials

II. Knowledgeable:

A. Assessment, Diagnosis, and Treatment Planning: *Under Graduates must be competent to:*

2.1 Manage the oral health care of the infant, child, adolescent, and adult, as well as unique needs of women, geriatric, and special needs patients.

2.2 Identify, prevent, and manage trauma, oral diseases, and other disorders.
2.3 Obtain, and interpret patient / medical data, including a thorough intra/extra oral examination, and use these findings to accurately assess and manage patients.
2.4 Select, obtain, and interpret diagnostic images for the individual patient.
2.5 Recognize the manifestations of systemic disease and how the disease and its management may affect the delivery of dental care.
2.6 Formulate a comprehensive diagnosis, treatment, and/or referral plan for the patients.

B. Establishment and Maintenance of Oral Health: *Under Graduates must be competent to:*
2.7 Utilize universal infection control guidelines for all clinical procedures.
2.8 Prevent, diagnose, and manage pain and anxiety in the dental patient.
2.9 Prevent, diagnose temporo-mandibular joint disorders.
2.10 Prevent, diagnose, and manage periodontal diseases.
2.11 Develop and implement strategies for the clinical assessment and management of caries.
2.12 Manage restorative procedures that preserve tooth structure, replace missing or defective tooth structure, maintain function, are esthetic, and promote soft and hard tissue health.
2.13. Diagnose and manage developmental or acquired occlusal abnormalities.
2.14 Manage the replacement of teeth for the partially or completely edentulous patient.
2.15 Diagnose, identify, and manage pulpal and peri-radicular diseases.
2.16 Diagnose and manage oral surgical treatment needs.
2.17 Prevent, recognize, and manage medical and dental emergencies.
2.18 Recognize and manage patient abuse and/or neglect.
2.19 Recognize and manage substance abuse.
2.20 Evaluate outcomes of comprehensive dental care.
2.21 Diagnose, identify, and manage oral mucosal and osseous diseases.

III. **Community Health Promoter:** *Under Graduates must be competent to:*
3.1 Provide prevention, intervention, and educational strategies.
3.2 Participate with dental team members and other health care professionals in the management and health promotion for all patients.
3.3 Recognize and appreciate the need to contribute to the improvement of oral health beyond those served in traditional practice settings.

IV. Critical Thinker: *Under Graduates must be competent to:*
4.1 Evaluate and integrate emerging trends in health care as appropriate.
4.2 Utilize critical thinking and problem-solving skills.
4.3 Evaluate and integrate best research outcomes with clinical expertise and patient values for evidence-based practice.

V. Professional and Role Model: *Under Graduates must be competent to:*
5.1 Apply ethical and legal standards in the provision of dental care.
5.2 Practice within one's scope of competence and consult with or refer to professional colleagues when indicated.

VI. Researcher: *Under Graduates must be competent to:*

6.1 Apply the current research for innovations in treatment, keeping at par with international standards

6.2 Conduct independent research based on the community requirements

VII. Leader: *Under Graduates must be competent to:*

7.1 Manage self, taking responsibility and utilizing the time to the best of his/her ability.

7.2 Effectively work in a group, as a leader or as a team member

7.3 recognize and comply with the working system of any Institute.

INTRODUCTION OF STUDY GUIDES

When a dental student enters dental college, a new era of academic life begins. This study guide has been designed to help students navigate their transitional phase smoothly. The very first week is spent in familiarizing the students with the environment of Muhammad Dental College.

1. Objectives of the Study Guide

The purpose of this study guide is to:

- Inform students what they are expected to learn during their study period.
- Guide students on how the student-learning program has been organized, and how it would be implemented.
- Help students organize and manage their studies throughout the year.
- Inform students about the code of conduct at Muhammad Dental College (MDC).
- Inform on the organization and management of the team at MDC. This will help you contact the right individual in case you have any difficulty.
- Describe the course content that will be taught and what the students are expected to learn.
- Impart the information on learning methods that you will experience during the course. The methods include: tutorials, lectures, practical skills, experiments, dissection, field visits and research. These learning methods should help you achieve the course objectives.
- Guides you about the available learning resources for the terms. These include: books, computer-assisted learning programs, videos, and other aids
- Makes you aware about the contribution of internal evaluation and term examinations, on student's overall performance.
- Passes the information on the methods of assessment.
- Inform regarding the examination policy, rules and regulations.

2. Preamble:

Integration has been accepted as an important educational strategy in medical education. PMDC & LUMHS believe in continuous curriculum revision through regular reviews and feedback of stakeholders. This curriculum has been updated with Correlation as a minimum level of integration in BDS. This curriculum is outcome-based, patient-centered, community-relevant, and promotes health while preventing disease. It has been revised by the faculty of basic and clinical Dental sciences in collaboration with LUMHS Academic Directorate and MDC Department of Medical Education

3. Curriculum Perspective

LUMHS curriculum is evolved taking into consideration constructivist and behaviorist with some elements of the cognitivist approach. It allows students to construct their own knowledge based on what they already know and to use that knowledge in purposeful activities requiring decision making, problem solving, and judgment.

4. Level of Integration:

MDC will follow Correlation i.e. level 7 of Harden's level of Integration in first three years. The emphasis remains on disciplines or subjects, with subject-based courses taking up most of the curriculum time. Within this framework, an integrated teaching session or course is introduced in addition to the subject-based teaching. This session brings together areas of interest common to each of the subjects. Though the teaching is discipline based, topics are correlated and taught with clinical context for better understanding and application of concepts. However clinical teaching increases gradually with advancing years. BDS Year IV is for clerkships.

5. Curricular Organization and Structure

a. In MDC, BDS curriculum in the first two years shall be delivered in a System-Based Modular Format with clinical relevance. However, in Year III, students shall get clinical exposure through rotations in the wards and OPDs, and in Year IV through clerkships
b. There are three modules in year I, each will have, duration of which depends upon the number and complexity of the objectives to be achieved in that module
c. The curriculum will be delivered by modular teams of multidisciplinary basic science faculty and relevant clinical dental sciences faculty.
d. The planning and delivery will be coordinated by year coordinators who will guide module coordinators of their respective years for efficient implementation
e. Modular Coordinator will be responsible for teaching and assessment during each module. S/he will be appointed by Principal in coordination with Department of Medical Education.
f. Clinical Coordinator will be responsible for placement, teaching and assessment during clinical rotations.
g. MDC will provide study guides of each year to the students.
h. To attain the integration in BDS program, teaching shall be done in three spirals Basis of Medicine **(Spiral I -Years I & II)**: The syllabus will be integrated horizontally around systems of the body in which Anatomy, Physiology and Biochemistry will be taught with clinical relevance. Additional chunks of content will be added in a module that exactly does not fit in the central theme of the module.
i. Longitudinal themes, General Education **(Behavioral Sciences, Islamiat, English, Pakistan Studies, Art & Humanities, Communication Skills, Clinical Care, Professionalism, Research Methodology, Leadership, Management, dental & Dental Ethics, Patient Safety, EBM & Infection Control, ICT (Computer Skills, Self Study** are an integral part of year I. However, assessment of these subjects will be the responsibility of institute itself.
j. Islamiyat and Pakistan Studies will be assessed by the University in first professional examination.
k. Apart from attending daily scheduled sessions, students should engage in self-directed learning to achieve the desired objectives.
l. Professional Exams will be module wise. There will be three papers, one paper for each module.

6. Competencies:

The focus of this curriculum is on the roles of a general physician as identified by PMDC. These are skillful, knowledgeable, community health promoters, critical thinkers, professionals and role model, researcher and leader. Competencies focused in year I and II are: -

a. Medical Knowledge
b. Procedural skills
c. Problem solving
d. Communication skills
e. Professionalism
f. Research

7. Outcomes:

By the end of the Second year BDS, students should be able to:

a. Correlate the developmental and pathological knowledge of different organ systems of human body to their physiological and biochemical basis.
b. Understand the science of dental materials and their utility in various treatment options.
c. Communicate clearly and effectively.
d. Apply theory of clinical photography and videography to practice in simulated & clinical settings.
e. Discuss the basic principles of research

8. Contact Hours Distribution Second Year BDS:

Subjects	Contact Hours
Dental Material Science	300 (72 First year+228 in second year BDS)
Pharmacology	220
Pathology	220
Oral Pathology	180
Pre-Clinical Operative	80
Pre-Clinical Prosthodontics	80
Oral Radiology	30
TOTAL HOURS	**1038**
GENERIC COMPETENCIES	
Computer Skills	12
Communication Skills	12
Leadership/Teamwork	12
Behavioral Science	12
Research	20
Ethics	12
Professionalism	12
MURC Research	14
TOTAL HOURS	**107**
Mentoring + SURVIVE	
GRAND TOTAL	**1145**

9. Educational Strategies:

(These are proposed, but institutes can use other evidence-based teaching methodologies that suit their context)

a. Interactive Lectures
b. Small group discussion
c. Lab practical
d. Skills lab/Phantom Lab
e. Problem-based learning/Case-based learning
f. Tutorials
g. Integrated sessions using any of the above strategies
h. Self-directed learning (SDL) and directed self-learning (DSL)

10. Resources:

To be provided by the institute

a. Faculty

b. Facilities
c. Administration for Course
d. Administrative structure
e. Communication with students

11. Internal Assessment:

Formative assessment (low stake) is at faculty discretion like mid module test and other class tests. There will be three end of modules and one pre-annual examination in year I, which will be taken by LUMHS and contribute towards the weighting of internal assessment i.e. 20% in the professional BDS Examination.

12. Annual Professional Examination:

The University will take the professional Examination at the end of the academic year. Annual Theory & Practical Examination will be of 200 marks for Pathology, Oral Pathology, Pharmacology, and Science of Dental materials each. The passing score is 50% in theory and practical separately

13. Evaluation of the Course:

To be filled in by the institute.

a. The major goals of the evaluation are to monitor the quality of and improve the curriculum
b. Student portfolio shall be maintained in the departments in which students will give their feedback either by name or anonymously. Feedback may be taken at the end of module, online and informal student feedback during the running module.
c. Faculty suggestions if any, for improvement of curriculum and teaching may be incorporated in the next session

15. Implementation of curriculum

a. The university will give the academic calendar, year-wise distribution of modules, learning outcomes, table of specifications, and assessment policy.
b. Implementation of curriculum, including the timetable, distribution of content across the whole year, and the rotation plan, is at the discretion of the medical college/institute.
c. Early clinical exposure may be achieved by allocating hours to skill labs, Phantom Lab, Clinical dental sciences rotations in OPD/Wards, Medicine & Surgery ward visits in each module, or patients may be brought before the students as per the decision of the institute.

The BDS Curriculum in MDC is spiral in which students will learn the same topics throughout their education program with each encounter increasing in complexity and reinforcing previous learning.

Vacations: Students will avail vacations in accordance with the schedule decided by the College Academic Council. Hospital teaching continues during summer vacation. Students performing hospital duty will be divided in batches.

Timetables for various batches will be prepared by the timetable Committee as received the timetable grid from LUMHS. If needed, classes may also be continued during the summer vacation. Timetable of lectures, SGDs, practical classes and hospital training will be notified by the head of the institution before the commencement of the academic session and during the session if a change is required. Classes teaching, training, syllabus, courses, End of Module examinations & final professional examination are carried out according to the rules and regulations of the LUMHS.

- The Liaquat University of Medical & Health Sciences (LUMHS) has designed a four-year modular framework for Integrated Curriculum based on Specific Themes, Clinical Clerkships, Quran and Professionalism, Ethics, research & Leadership.
- The time calculation for completion of module is based on 35 hours per week.
- Total hours of teaching, learning and formative/summative internal assessment to be completed in a year are 1200.

Year	Module	Modular Configuration	Weeks
First Year BDS	**1**	Block I	**12 Weeks**
	2	Block II	**12 Weeks**
	3	Block III	**12 Weeks**
	General Education	General education (including Islamic studies, Pakistan studies, English, Arts & humanities, behavioral sciences, and research)	**Parallel Subject**
		Pre-Clinical Rotation in (Operative, Prosthodontics, Clinical Care, Dental Anatomy)	**9*3=36 Weeks**
Second Year BDS		Disease, Infections & Therapeutics I	**17 Weeks**
		Disease, Infections & Therapeutics II	
		Neoplasia, Hemodynamics & Genetics	**10 Weeks**
		Parallel Subject: Science of Dental Materials	**36 Weeks**
		Pre-Clinical Rotation in (Pre-Clinical Dental Sciences (Dental material, Operative & Prosthodontics) & Clinical care & Professionalism)	**9*3=36 Weeks**

	General Education	General education, including behavior science, ICT, and research	**Parallel Subjects**
Third Year BDS	1	Removal Prosthesis+ Research	**9 Weeks**
	2	Oral Medicine, Exodontia, Pain Control & Oral radiology (OMFS+ Oral Medicine & Diagnosis)	**9 Weeks**
	3	Cariology (Operative Dentistry)	**9 Weeks**
	4	Periodontics (Gingiva & Periodontal Disease) + Behavioral Sciences	**9 Weeks**
	5	Community Dentistry & Public Health Services & Oral Radiology	**36 Weeks**
		General Medicine & General Surgery	**36 Weeks**
	General Education	**PERLs 3** (Professionalism, Ethics, Research & Leadership), Behavioral Sciences, Medical Education & ICT.	**Parallel Subjects**
Final Year BDS	1	**Oral Maxillofacial Surgery**	**8 Weeks**
	2	**Operative Dentistry & Endodontic**	**8 Weeks**
	3	**Orthodontics**	**8 Weeks**
	4	**Prosthodontics**	**8 Weeks**
	5	**Paediatric Dentistry**	**8 Weeks**
	General Education	**PERLs 4** (Professionalism, Ethics, Research & Leadership), Behavioral Sciences, Medical Education & ICT.	**Parallel Subjects**

A few salient features that have been incorporated for all three domains of training after deliberations and through an iterative process by subject experts, medical educationists, and the university lead as follows.

- **Horizontal Integration- COGNITIVE:**

  The Curriculum framework has 15 modules spanning 03 years. Horizontalintegration is evident in the modular configuration, where different basic disciplines approach the themes simultaneously. Modules have been structured where all the basic disciplines are represented based on their respective weightage of content. Assessment framework ensures that the applied/clinical aspect also is inculcated in the concept development of the learner keeping the clinical relevance and context at the core.

- **Clinical Relevance & Theme-COGNITIVE:**

  All module objectives are preceded by the recommended themes and clinical relevance. These are grounded in the rationale of the module so that pattern of learning could be steered for a practical professional approach. However institutional discretiondoes not

prohibit adopting any other thematic approach provided that the program outcomes are adequately achieved.

- **Vertical Integration- COGNITIVE:**

Spiral placement of the modules within the frameworkensures a revisit of the basic sciences. In the first step the applied / clinical learning objectives orient the learner and the repetitive module horizontally rhymes with the clinical rotations with a backdrop of basic sciences. The final year of clerkship is the final revisit, which is primarily workplace based/log books and principally involves the perfect integrated blend of tri-domain learning.

- **C-FRC-PSYCHOMOTOR:**

Clinical Skills follow a spiral which is entirely skills dominant. This spiral is the core of psychomotor training. The first two years will be of **Clinical Skills- Foundation** which will represent clinical orientation. The clinical orientation will be conducted in OPD, skills lab and simulation centers (depending on the available resources). The clinical orientation along with the applied/clinical component of the knowledge base will channelize the learner for the practical and professional aspect of learning.

The subsequent two years the spiral will move on to **Clinical Skills Rotations**. The rotations in different wards will be based on foundational developmental already commenced in pre-clinical years. The year 3 and year 4 which have the rotations will also have the second visitof the modules which would now be more clinically inclined with a stronger base of Pharmacology and Pathology. Community oriented practices will also be broadening the element of systems thinking and diversity of practice for ahealthcare leader of tomorrow.

- **Clinical Clerkship:** Finally, **Clinical Clerkships** are aimed to be entirely facilitated in workplace environments. The clerkship model will involve the delegation of duties thus adding to the acquisition of professional accountability as a competency.The psychomotor training and skills acquisition will be the maximum in the year of clerkship. The entire process of Clinical competencies will be endorsed in a logbook which would be the training base of the learner for future references and exam evaluations.

- **PERLs-AFFECTIVE:**

Affective training has been formally inculcated in the curricular framework. The model of PERLs has been introduced so that the yield of doctors has a strong, resilient, ethically driven character. PERLs stands for Professionalism, Ethics, Research and Leadership skills. PERLs rounds up professional development for the effective application of the knowledge and skills base achieved. For a professional to be social accountable and to be able to play the healthcare leadership role for societal elementslike advocacy, equity or resources and healthcare access, a formal training is a must.

The spiral of PERLs will be monitored directly by the respective department of Medical Education. However, the teaching sessions, and mentoring process, can and will be assigned to other disciplines. For example, communication skills can have an input from the faculty of Family Medicine, and research can be facilitated by the Community Medicine & Public Health faculty. Ethics can be jointly covered by the Behavioral

sciences. Leadership is an ambit where the students will be motivated if the institutional leads themselves get involved and can also have the input of the successful alumni. The Faculty of Medical Education will look after the entire process and will also engage in the teaching sessions, when and wherever required.

STUDENT'S CODE OF CONDUCT

The administration manages the code of conduct, discipline, dress code and educational performance. There is a director designated for dealing with Student Affairs.

The Vice Principal/administrator can be approached for queries on educational matters, any breach of discipline, and referrals for electives, and advice about leave of absence or leave for medical reasons. All faculty members are also responsible for maintaining all aspects of discipline. Breaches of the university's code of conduct are routinely referred to the committee and disciplinary action is taken as it deems appropriate.

1. Dress code:

Male students:

1. Casual Trousers
2. Jeans (Plain blue) without an image, graphics and write ups
3. Casual Shirts (Half/ Full sleeves)
4. T Shirts without any messages, images, graphics and write ups
5. Casual shoes or Joggers with socks
6. Shalwar Qameez with shoes (only on Friday)
7. Suit/ Combination
8. Coat/ Pullovers/ Sweaters/ Jackets in winter

Female students:

1. Shalwar Qameez
2. Hijab, Abaya, Chaddar etc
3. Full-length Jeans with long shirt/ kurta (knee length)
4. Light jewelry and light makeup
5. Shoes, Sandals, and Joggers
6. Duppatta/ Scarf is compulsory with all dresses

NOTE: MDC students are expected to wear a white coat during classes, hospital rotations, and otherwise.

2. Personal behavior.

The University expects all students to maintain a professional manner when interacting with colleagues and others. The University recognizes that personalities, characters, and management styles may differ, but, notwithstanding these differences, as a minimum standard, all staff is expected to:

Work co-operatively with others in order to achieve objectives and establish good working relationships. All should behave and speak professionally, respectfully, and courteously at all times.

- Tidiness and cleanliness must be adhered at all times within the MDC premises, which will help us maintain a safe, clean, and professional learning environment.
- Use the college's property, facilities, supplies, and other resources most effectively and efficiently.

- Unacceptable behavior such as Aggressive or abusive behavior, shouting or personal insults or spreading rumors or gossip, or insulting someone is to be avoided at all costs. All these matters, if experienced, should be reported to the vice principal or administrator or a senior faculty member.

3. Punctuality.

Students are expected to arrive in class well in time. All cell phones, smart phones, and other electronic devices (e.g., pagers, iPods) must be turned off and hidden from view during class time. Talking and other disruptive behaviors are not permitted while classes are in session. If the students miss a class they are themselves responsible for the missed part of the course. It is the student's responsibility to contact a classmate or teacher to determine and cover what was missed.

At MDC classes starts immediately after holidays. There is no lag period after leave. There will be no relaxation for absent students. **Please inform your parents of this and make your travel arrangements accordingly**. Avoid taking leave for personal reasons like weddings during the academic year.

4. Conduct in Hospital:

While working in a hospital and when dealing with patients, treat those whom you serve, with whom you work, and the public with the same degree of respect you would wish them to show you.

Treat patients and colleagues with kindness, gentleness, and dignity. Respect the privacy and modesty of patients. Do not share the medical or personal details of a patient with anyone except those health care professionals integral to the well-being of the patient or within the context of an educational endeavor. Lastly students are required to strictly follow the college dress code during and outside the college hours inside the campus & at hospital.

5. Conduct in library, cafeteria and common rooms:

Use of Library is to help support learning and promote academic success. Through the Library, the college provides students with access to computers, books, periodicals, study space, and other academic help, comfortable seating, and formal and informal learning spaces. Students are expected to follow college rules, guidelines, and honor code of conduct in order to maintain their good standing and to continue receiving library privileges.

Use the cafeteria and common rooms with care, courtesy and respect for others. Place garbage and recyclables in the appropriate containers. This behavior will maintain a clean and enjoyable environment for all.

COLLEGE DISCIPLINARY COMMITTEE

The Committee deals with the maintenance of discipline on campus. All cases of breach of discipline will be brought before this committee. The ruling of the committee cannot be challenged. The student will be dealt with accordingly.

Students are to avoid the following: -

a. Unauthorized use of the University's name or logo, which is the property of the University
b. Harassment, sexual or otherwise, or intimidation of any member of the University
c. Coming late for classes. The student may be considered absent and marked accordingly.
d. Improper/inappropriate dress
e. Loud and aggressive behavior in the Cafeteria common rooms or within the premises of MDC/Hospital and University.
f. Non-clearance of bills/dues. Non-clearance of dues may prevent a student from appearing in the professional examination. The student may also be refused permission to attend classes.

Smoking

Smoking is strictly prohibited in campus.

POLICY ON DISCIPLINARY ACTION AGAINST USE OF UNFAIR MEANS

Zero tolerance for cheating/use of unfair means is to be maintained during Examinations.
A committee is to be formulated to consider all the cases pertaining to **plagiarism and use of unfair means** in exams. Two committees are to be formed, one each for MBBS and BDS. These committees are to be headed by the respective Principals.
The Committee shall follow the following procedures in handling such cases:

a. The Invigilator who has caught the student using unfair means will report to the Head Invigilator, who will inform the Head of the Examination Department, MMC.
b. The material being used and the answer sheet will be confiscated immediately.
c. The Principal Dental Section will be informed at once.
d. Further action will be taken locally by the Disciplinary Committee against use of Unfair Means and Plagiarism, which has been formed. The punishments which this committee can advise are: withdrawal from that paper, withdrawal from the entire examination but allowed to sit for supplementary or to repeat the year or to be expelled from college.
e. Chancellor ISU will be the approving authority for the recommendations of the committee.
f. Director Examinations ISUM will be informed in writing of the action taken.
g. The material being used and the concerned answer sheet will be sealed and kept at the MMC examinations department.
h. Instruction explaining the term “unfair means” will be displayed at the venue of examination, as well as given in the study guide.
i. The Following actions are considered as “unfair means”

- Possession of written material/ books/ notes of any sort within the examination venue, whether that material is related or unrelated to the paper.
- Writing on the palm, arm or anywhere on the candidate's body/clothing.
- Any attempt to copy, take or give help during the examination.
- Possession of mobile phones, personal digital appliances (PDAs) and any other electronic device.

SRMLG SYSTEM TO EXECUTE AND MONITORING OF THE CURRICULUM:

Some people like to fondly remember these pillars by “Syed Razi Muhammad’s Learning Group” (SRMLG).

Ibn-e-Sina University, Mirpurkhas (ISUM) is a newly established university, the first in the Mirpurkhas Division. It follows a vertically integrated modular system. There are 37 modules divided over 5 years of the MBBS Curriculum and 16 modules in the four-year BDS program. Each year has an average of 36 to 40 weeks of studies. The weekly plan is organized as a “theme.

Regular classes, practicals, clinics, and hospital duties are amply supported by 5 pillars that contribute to the high standards of this first-ever university of Mirpurkhas division. These pillars include:

1. **“Survive”** a three-pronged system of weekly tests, assignments and post-test discussions.
2. **“RLSE”** or “Running Lives by Sharing Experiences, a weekly mentoring program.
3. **“MCS”** or daily “Mobile Clinics by Students”.
4. **“LBAS”,** or “Learner Based Annual Symposia”.
5. **“GSAT”** Annual “Gastroenterology session with Students as Teachers”. Conducted by Prof. Dr. Syed Zafar Abbas.

1. SURVIVE:

In ISUM, like weekly “Survive” and other tests, assignments include posttest Discussion (PTD) and attendance.

IBN-E-SINA UNIVERSITY, Mirpurkhas - 2024

Online Moodle Test Schedule for 2024

S. No	Days	Time	Year/Class
1	Monday	01:00pm to 02:00pm	Third Year BDS
2		02:30pm to 03:30pm	Final Year MBBS
3	Tuesday	10:00am to 11:00am	Third Year DPT
4		01:00am to 02:00PM	Fourth Year MBBS
5		02:30pm to 03:30pm	Final Year BDS
6	Wednesday	02:30pm to 03:30pm	Third Year MBBS
7	Thursday	10:00am to 11:00am	Second Year BDS
8		11:00am to 12:00pm	CHPE Morning Program
9		12:00am to 01:00am	Second Year DPT
10		02:30pm to 03:30pm	Second Year MBBS
11	Friday	11:30am to 12:30pm	First Year DPT
12		12:30pm to 01:30pm	First Year BDS
13		02:30pm to 03:30pm	First Year MBBS

IT DEPARTMENT

2. "RLSE" or "Running Lives by Sharing Experiences", a weekly Mentoring Program.

Significance of Mentoring in ISUM:

Mentoring in higher education or medical education plays a vital role. It helps students or young professionals develop skills, gain insights, and build confidence. A good mentor provides guidance, support, and valuable feedback, which can lead to better academic or professional outcomes. In medical education, mentoring is particularly crucial as it helps shape future healthcare professionals. Some benefits include:

- Personalized guidance and support
- Improved critical thinking and problem-solving skills
- Enhanced professional development and networking
- Increased confidence and self-awareness

- Strengthening the teacher and student relationship.
- Better academic or professional performance

One contact hour is reserved for students' character building and development during regular mentoring activities.

Time: Meeting time will be reserved for one hour per week (Wednesday 1-2 pm between mentees & mentors, schedule is mentioned in the timetables of all respective years and programs.

3. MOBILE CLINICS BY THE STUDENTS (MCS)

"MCS" or daily "Mobile Clinics by Students" is a part of the unique 5-pillars system, which supports the vertically integrated modular system of Ibne Sina University, Mirpurkhas (ISUM). This was started in 2018 in collaboration with APPNA, when the President of APPNA supplied 4 mobile health systems to MMC/ ISUM to run this unique system. In the MBBS program from the third year till final year students and in the BDS Program, third year & final year BDS students must have to participate in the MCS, in groups of two from each class as per the schedule provided by the administration.

4. LEARNER BASED ANNUAL SYMPOSIUM (LBAS) 26TH SYMPOSIUM:

LBAS has been conducted every year from previous 26 years along with the exceptional team of academicians, students, and staff for 26 consecutive years. In 2024, Rigorous reverberation on scientific symposium started from October 1 to 11, 2024, encompassing pre-symposium workshops, research papers from faculty, students and invited speakers from Karachi, Hyderabad, Nawabshah, Sukkur, Gambat & other cities of interior Sindh. Muhammad Medical College, Mirpurkhas, Sindh, successfully organized pre-symposium workshops, a symposium, and a conference on the theme as

Role of Universities In Promoting Higher Education in Underprivileged Areas of Pakistan

The events aimed at providing a platform for medical professionals, researchers, and students to share knowledge, exchange ideas, and discuss cutting-edge advancements in the field.

5. "GSAT" ANNUAL "GASTROENTEROLOGY SESSION WITH STUDENTS AS TEACHERS"

Muhammad Medical College (MMC), a constituent college of Ibn-e-Sina University, Mirpurkhas (ISUM), has become an icon in the field of medical education and healthcare services in Pakistan. Not only it provides quality formal medical education, but as part of its innovative activities, it keeps holding several nontraditional activities to stimulate and provoke scientific curiosity among its students and teachers throughout the year. It therefor came as no surprise that under the leadership of its Chancellor Professor Syed Razi Muhammad, ISU received the prestigious National Healthcare Excellence Award 2025 recently at Lahore from Federal Minister of Health early April this year.

SECOND YEAR-BDS MENTORING GROUPS WITH MENTORS									
Group	**Mentors**	**Meeting venue and time**	**Mentee 1 (GPL)**	**Mentee2**	**Mentee3**	**Mentee 4**	**Mentee 5**	**Mentee 6**	**Mentee 7**
A1	Dr. Seerat ul Urooj		Aiza Ali Zainab Zafar	Aleeza Iqbal	Alishba Aman	Alishba Jahangir	Alia Sikandar	Amrita Kataria	Dua Zehra
A2	Dr. Sidra		Dure Shahwar	Esha Faraz	Farah Hamza	Farah Shaheen	Hema Kumari	Jaweriya	Kahi Kashan
B1	Dr. Sehar		Laiba Asim	Laiba Malik	Manahil Zafar	Maryam Rida Fatima	Nahal Chandio	Afshan	Sania Habib
B2	Dr. Nosheen		Sawaira Mumtaz	Syeda Khudija Bukhari	Syeda Maheen	Ume Habiba	Uzma Batool	Vaneeza Fatima	Zuha Khan
C1	Dr. Shahzaman		Abdul Mahad	Abdul Qayoom	Abdullah	Muhammad Abubakar Zahid	Ahmed Mujtaba	Ali Kashan	Haris Ahmad Khan
C2	Dr. Faiz		Hassan Ahmed	Hassan Javaid Awan	Jahanzaib	Muhammad Ali Abdullah	Muhammad Hassan	Muhammad Mujtaba	Muhammad Mustafa
D1	Dr. Rana		Muhammad Sarfraz	Samiullah	Shahzaib Khan	Sudas	Usman Farooqi	Yazdan Haider	Allah Dita
D2	Dr. Vishal		Shahnawaz Ali	Iqbal					

LEARNING STRATEGIES

Interactive Lectures:

The traditional lecture system is used to introduce a subject and discuss the broad concepts in that specific field of study. Interactive lectures to smaller groups remain an effective and essential way of teaching. More recent methods of learning and teaching, such as case-based learning and small group-based problem-solving sessions are also employed.

Small Group-Based Learning:

Small group and tutorial sessions are regularly held to enable students to discuss the details of a lecture topic. Students are expected to prepare presentations on applied topics and discuss their implications with their fellow students. The lecturer acts as a facilitator. By participating in these group discussions, students can interact and learn from one another.

Hands-on Training:

Students in final year students will deal daily with patients in OPD, students of the BDS program are exposing to pre-clinical dental subjects from the very first year of BDS to gain, enhance, and polish their clinical knowledge and skills. Lectures and tutorials will regularly be held to provide clinical orientation on the subjects.

Clinical/Practical Learning:

Theoretical and practical knowledge is augmented with community services and integration of clinics. Clinical case presentations provide students with essential hands-on experience. Pre-Clinical teaching and exposure to students is provided from very first year of BDS program.

Community-Based Learning:

MDC is committed to provide the environment and training that would enable professionals to successfully contribute to the improvement of the health sector, particularly in less privileged communities under the Community-Oriented Medical Education Program. Community-based Based Learning is provided to students with the collaboration of the Community Dentistry and Community Medicine Department.

The university involves its students in research-developing work in these designated communities. Students are encouraged to participate in the preventive and curative care and management of patients and their families in Primary Health Care field settings from the very first year of the BDS program.

“MCS” or daily “Mobile Clinics by Students” is a part of the unique 5-pillars system, which supports the vertically integrated modular system of Ibne Sina University, Mirpurkhas (ISUM) to teach the students in community settings under supervision of senior faculty members.

Problem-Based Learning (PBL):

Various learning strategies are implemented in all four years of dental education, focusing on small group teaching. In pre-clinical or junior years, the learners are exposed to teaching strategies like problem based learning (PBL), large group discussions, small group discussions, demonstrations, Skills lab, interactive tutorials, seminars, poster competitions and simulations, while clinical students are exposed to case based learning (CBL), clinical rotations, small group discussions, didactic lectures, Skills lab, interactive sessions and seminars.

The typical features of PBL and CBL are aimed at student-centered learning. PBL has formed the core of many educational programs throughout the world in recent decades, promoting an orientation towards active learning in small collaborative groups. Many models of PBL has evolved to fit into different curriculum structures, meet diverse learning needs and accord with available resources. A tutor facilitates the group learning process. The PBL problem introduces a real patient or a hypothetical case. In this students identify the key elements of the case, develop and test hypotheses based on the pathophysiological mechanisms, decide on the diagnosis, and discuss principles of management. The development of PBL cases is a challenging process, as each case must reflect a defined set of learning objectives, have face validity, suit the student's stage of maturity and fit with constraints of time and resources. A typical PBL tutorial consists of a group of students (usually 8to 10) and a tutor, who facilitates the session with minimum interference. The PBL tutorials consisted of three sessions of two hours, and the time is allocated in the timetable.

Case-based learning (CBL):

Case-based learning (CBL) is an adaptation of the PBL process and is used more generally in clinical medical education to provide knowledge in context and to offer opportunities for the development of clinical reasoning and judgment. Written case studies, prepared by the tutors present the background data and students are required to work together to identify the clinical problems, prepare differential diagnoses and suggest potential investigations and treatment. Students set their own learning objectives and identify the learning resources required to confirm or refute their diagnostic possibilities. The CBL format is flexible and may involve the incorporation of role play or the acquisition of data by gaining further clinical experience to solve the clinical problems. CBLs are overseen by facilitators who guide the students in case they are not on the right track as unlike PBLs, the CBL session has to be completed in one day.

ATTENDANCE POLICY FOR STUDENTS

PMDC rules for eligibility in annual examinations.

- Minimum attendance requirement is 75% in each subject: attendance is for lectures, demos, practicals, clinics, PBLs, SURVIVE, CPC, presentations, etc, indoor and outdoor.
- The attendance is not simply for lectures.

Attendance is maintained by the Department of Student Affairs at MDC.

All students should try and achieve 100% attendance. Every teaching session is essential. You are expected to have at least 75% attendance in all subjects individually to be allowed to appear in the professional examinations.

a. Lecture Attendance is marked at the start of the class.
b. Students who come more than 10 minutes late will be marked absent.
c. A random head count is done to ensure correct entry of attendance.
d. The attendance sheet is signed by the teacher and sent to the Department of Student Affairs.
e. The attendance is entered into the spreadsheet as soon as possible on that day.
f. No correction will be made later than 24 hours as the system is then locked.

ATTENDANCE FOR LECTURES, DEMOS, PRACTICALS ETC

a. The teacher will mark the attendance of students and countercheck it by Head count. The attendance sheet should not be rotated among the students.
b. The teacher/ assistant/CR must immediately hand over the attendance sheet to the Scholastics Department daily
c. Attendance submitted later than Friday of the current week will not to be accepted.

The University rules permit a 5% shortfall for genuine reasons of personal illness of a life-threatening nature or unavoidable circumstances such as the death of a blood relative. This 5% relaxation cannot be taken in case of students going away for holidays.

In case of attendance less than 90% even due to health issues, you will be asked to repeat the year.

ATTENDANCE POLICY FOR STUDENTS REPEATING THE YEAR

a. Students who are repeating the year either due to poor attendance or failure in professional or supplementary examination will need to attend all the classes of the particular subject in the next year.
b. Their previous years' attendance will not be taken into consideration.
c. If their attendance is AGAIN less than 75% in current academic year, they will not be allowed to appear in the upcoming annual examination.
d. This includes all practical classes, demonstrations, CBL sessions, lectures and clinical classes.

ATTENDANCE POLICY FOR STUDENTS APPEARING IN SUPPLEMENTARY EXAMS

a. Only those students who have appeared in professional examination can appear in supplementary examination.
b. Students, who were not eligible for the annual exam, will not be allowed to sit in the supplementary exam either.
c. Those who did not avail the chance must repeat the year and cannot appear in the supplementary.
d. Students who fail to pass their first annual exam will be provisionally promoted to the next class while preparing for the supplementary examination.
e. Attendance will be marked in the class to which they have been promoted.
f. The students will prepare for the supplementary exams in their personal time without compromising the attendance of the year they are provisionally promoted to .
g. In case the student fails to pass the supplementary exam he/she will revert to the previous class, and the attendance in the new class will be counted in the class to which they revert to.
h. Those students who do not attend classes will be marked absent and may face a shortage of attendance, and will be asked to repeat the year.

ELIGIBILITY CRITERIA FOR APPEARING IN ANNUAL PROFESSIONAL EXAMINATIONS

A student will be eligible to appear in the annual professional examination if he/she fulfill the following criteria:

a. At least 75% attendance in every subject.
b. Have cleared all financial dues.
c. Must appear in all three end-of-module examinations.
d. Must have scored passing marks in at least two of end of module examinations.
e. No breach of discipline should have occurred for which the Disciplinary Committee has advocated a punishment.
f. A student who has failed 2 end-of-module tests will be permitted a “resit” at the end of the academic year.
g. Students who did not appear in end of module tests will not be allowed in the “resit”.
h. No student can appear in one subject in an annual professional examination but must appear in all the subjects for that year.
i. Subjects may be designated for the supplementary exams or for students repeating a year.
j. There will be no remedial or extra classes in any subject for making good the shortfall in attendance.
k. Departments may offer revision classes but these will not be considered formal classes and will not be entered in the regular attendance.

CURRICULUM FRAMEWORK AND SEQUENCE OF CONTENT OF SECOND YEAR BDS-2026

MODULES	Module-I Disease Infection & Therapeutic-I & II, ICT & PERLs	Eid ul Fitr Holidays 16-03-26 till -22-03-2026	Module-II Neoplasia Hemodynamics and Genetics, ICT & PERLs	Eid ul Azha & Summer Holidays 24-05-2026 till 21-06-2026	Module-III Orofacial Complex-II, ICT & PERLs	PRE PROF	Total Weeks
Dates	17 Weeks		10- Weeks		09-Weeks	4 Weeks	40 Weeks
Duration	12th January-15TH-MAY 2026		18thMay-2026-21st-August-2026		24-August-2026-23RD-Oct-2026	26TH-Oct-2026-22ND-November-2026	
END OF MODULE EXAM	15th May 2026		21st-August-2026		19TH-Oct-2026-23RD-Oct-2026		

PRE –CLINICAL ROTATIONS						Final Prof LUMHS Exams
PRE-CLINICAL	GROUPS NAMES DURATION WITH DATES OF POSTINGS-36 WEEKS					
Junior Operative II+ Pedodontics II 12th January-10TH-April 2026	12 Weeks: A	Eid ul Fitr Holidays 16-03-26 till -22-03-2026	12 Weeks: B	Eid ul Azha & Summer Holidays 24-05-2026 till 21-06-2026	12 Weeks: C	23RD-November-2026-till 27th-Decemeber-2026
Junior Prosthodontics II + Dental Material II 13TH- April-2026 to 31ST -July-2026	B		C		A	
Clinical Care & Behavioral Sciences II 03RD-August-2026-23RD-Oct-2026	C		A		B	

a. Learning objectives for each module are written down in the study Guide issued at the beginning of each academic year to each student. Curriculum for each module can be provided on request.
b. A schedule is issued for each module re-enforced by a weekly schedule issued 2 weeks in advance of the teaching dates.
c. This includes lecture, CBL, Practical's, Demonstrations, Ward Clinics, Evening Clinics, Classes in Skills Lab, Self-Study and Library period.
d. The assessment schedules i.e. end of modules tests as well as period of preparation leave and timing of OSCE/ OSPE, is given in the Academic Calendar.
e. The assessment result is displayed on departmental notice boards and recorded in the Examinations Department of MMC and student Affairs of MDC.

ASSESSMENT POLICY

There is a policy of ongoing or formative assessment of all students and summative assessment at the end of the module.

Formative or ongoing assessment:

- Marks for CBL sessions, SURVIVE, logbooks, history writing or clerking of patients.
- End of OPD rotation examinations, CATs, quizzes and tests held in a department.

Summative Assessment:

- Annual examination will be conducted by the affiliating university as per PM&DC guidelines.
- **The end-of-module test comprises** 30**%** of the final professional examinations
    - Written Final professional theory examination based on MCQs=70%
- **Final OSPE/OSCE.OSVE:**
    - OSCE or OSPE examination, Viva voce exam=80%
    - Internal evaluation =20%

Generation of internal evaluation marks from each module.

- 20% MARKS will be calculated from each end of the module exam and will be counted in the final examinations. The Internal evaluation is communicated to the University by the administration department.
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SCHEME OF INTERNAL ASSESSMENT/EVALUATION-20%-2025			
Overall attendance		7%	
Modular Test/Ward test/OPD Test		2% (6%)	
SURVIVE		7%	
SURVIVE 7%			
Final Year		**Remaining Years**	
Test	3%	Test	3%
Assignment	2%	Assignment	2%
Post Test Discussion	2%	PTD/Practical Book/Logbook	2%
Total	7%	Total	7%

POLICY FOR ELECTIVES

Electives are not mandatory nor are they a part of the curriculum. Electives are considered add on extra-curricular activities with benefits for selection for jobs or postgraduate training after BDS.

a. The Electives Rotation will be of four weeks' duration.
b. It will be planned at least six months during the 3rd or 4th Year.
c. The Elective will be planned during the **SUMMER HOLIDAYS,** preferably.
d. The institution or department will be of the student's choice.
e. During the elective, the student will not get credit for attending lectures at MDC.
f. It is the student's responsibility to ensure that his/her overall attendance record is not affected adversely by the elective.
g. The student will not proceed on an elective without informing the Principal or the Concerned chairperson designated for this purpose who will take permission from the Principal.
h. The student will sign a waiver to the effect that any shortfall in attendance is his /her own responsibility and will be dealt with as per rules of Liaquat University of Medical & Health Sciences (LUMHS).
i. The adequacy of education during the elective is the student's own responsibility.
j. Permission to attend an elective is given by the Associate Dean designated for this purpose. This simply implies that the college authorities are aware that the student is away for this period, so admission is not cancelled.
k. The student will ensure that the Elective Supervisor completes an evaluation report at the end of the elective.
l. MDC will not provide any financial assistance for the elective.

DIRECTORATE OF STUDENTS' ACTIVITIES

Directorate of Student Affairs is responsible for providing a constructive learning environment that fosters positive learning, personal development and enhances the quality of life for students. This department encourages students to achieve the objective of building a balanced personality.
The Directorate of Students Affairs establishes a connection between students, faculty and University administration. It is an important component of university that offers a platform for curricular and co-curricular activities to explore, enlighten and polish the hidden capabilities of the students so that they can enjoy pleasant environment and deliver a series of programmes to enrich the campus life. It is committed to enable all students to participate in an engaging, healthy, and active learning environment during their time at MDC-ISU. All these pursuits tend to improve the level of confidence among the students.

The Directorate has following major duties

- To promote extra co-curricular and cultural activities such as organizing Debate competitions, Quiz competitions, workshops, Bake sale, welcome party and farewell.
- Providing sports facilities and regular organization of sports competitions.
- Arranging different lecture sessions for Personal and Professional Development.
- Arranging community visits.
- Conducting various seminars on current national and international issues.
- Arranging blood donation camps and much more.

INTRODUCTION TO DEPARTMENTS

Department of Dental Material Sciences

Department of Pharmacology

Department of Pathology

Department of Oral Pathology

Department of Pre-Clinical Operative & Prosthodontics

DEPARTMENT OF DENTAL EDUCATION

High-quality Medical /Dental education is a vital prerequisite for high-quality patient care. Dental education's ultimate aim is to supply society with a knowledgeable, skilled and up-to-date cadre of professionals who put patient care above self-interest, along with developing their expertise over the course of a lifelong career.

The department of Dental Education has expanded beyond the classroom all around the world, and quality patient care is learned by bedside teaching and with the practical introduction of clinical cases in preclinical years. The Dental Education department ensures that the educational content synchronizes with the learning strategies, the assessment tools and provides effective feedback to enhance the learning process. The Department of Medical/ Dental Education at Ib-ne-Sina University is interested in raising the standards of teaching by continuously developing a pool of trained faculty members. Faculty training is done in educational content as well as in diverse teaching skills to encourage a flexible and a learner-centered approach during teaching. For this purpose, interactive, practical and hands-on workshops are constantly designed, focusing on current and effective modes of evidence based teaching and assessment tools. Self-reflection and critique of teaching techniques are also vital in propelling an Institute towards excellence. Our Dental Education department aims to achieve that and more.

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FACULTY IN THE DEPARTMENT OF DENTAL EDUCATION		
Name	**Designation**	**Qualification**
Prof Dr Syed Razi Muhammad	**Chairman/Professor**	**MBBS, FCPS, FRCP, MHPE**
Dr Kiran Fatima	Assistant Professor	BDS, MCPS-HCSM, MHPE
Dr Taqdees Maryam	Lecturer	BDS, CHPE
Dr Nosheen Zafar	Lecturer	BDS, CHPE

DEPARTMENT OF SCIENCE OF DENTAL MATERIALS

The Science of Dental Materials is an applied basic science DISCIPLINE dealing with the physical, chemical and biological properties of the materials used in clinical dentistry and their interaction with the oral tissues. An understanding of these properties as well as their handling is critical to the selection and various applications of dental materials in the field of dentistry.
The Department of Dental Materials includes a team of experienced and dedicated teachers. It also has a well-equipped laboratory where students can develop basic practical skills and get acquainted with commonly used dental materials.

To meet the challenges of present-day educational standards and to facilitate scientific knowledge at a professional level, the department acquires various teaching schemes such as interactive lectures, hands-on preclinical procedures, video demonstrations, tutorials, practical, guest speaker sessions & routine assessment tests.

FACULTIES OF SCIENCE OF DENTAL MATERIAL

Name	Designation	Qualification
Dr Hafiz Mahmood Azam	**Chairman/Associate Professor**	**BDS, M-Phil**
Dr Nourain Saeed	**Assistant Professor**	**BDS, M.Sc.**
Dr Paras Talpur	**Assistant Professor**	**BDS, M.Sc.**
Dr Sehar Ali	**Lecturer**	**BDS**
Dr Muhammad Hassan Khoso	**Lecturer**	**BDS (MDS Trainer)**

DEPARTMENT OF PROSTHODONTICS

Prosthetic dentistry is the branch of dentistry about the restoration and maintenance of oral functions, comfort, appearance, and health of the patient by restoration of teeth and/or replacement of the missing structures with removable and fixed dental prosthesis.

The department caters to patients through the provision of removable complete and partial denture prosthesis; fixed prosthesis, maxillofacial prosthesis, and temporomandibular disorders management.

FACULTIES OF SCIENCE OF PROSTHODONTICS		
Name	**Designation**	**Qualification**
Dr Atif Jawad	Chairman /Professor	BDS, FCPS
Dr Uzma Bashir	Associate Professor	BDS, M.Sc
Dr Shagufta	Registrar	BDS, M.Sc (FCPS)
Dr Champa Kumari	Registrar	BDS, (FCPS)
Dr Rehan	Registrar	BDS

DEPARTMENT OF OPERATIVE DENTISTRY

It is the branch of dentistry concerned with the development of disease and damage to the dental hard tissues. The etiology, pathogenesis and diagnostics of injuries are studied, as are disease activity, prognoses, prevention work and reparative treatment.

The objective of this course is to give foundation knowledge of operative instrumentation, dental terminology, principles of cavity preparations, and basics of tooth restorations. The skills with a hand piece are mainly accomplished through the use of patients' simulation approaches. The restorations for teeth are taught in a dental operative phantom head laboratory. The development and practice of these skills using a hand piece (dental drill) begins at orientation and continues throughout the academic year.

FACULTY IN THE DEPARTMENT OF OPERATIVE DENTISTRY		
Name	**Designation**	**Qualification**
Dr Asadullah Khan Tareen	**Chairman/Professor**	**BDS, M.Sc. (Conservative dentistry)**
Dr Shuja Aslam	Assistant Professor	BDS, FCPS
Dr Mohsin Ali Deeraj	Assistant Professor	BDS, FCPS
Dr Saima	Registrar	BDS, FCPS (Trained)
Dr Asma Kauser	Registrar	BDS, FCPS (Trained)
Dr Priyanka	Registrar	BDS
Dr Moon Irum	Registrar	BDS, FCPS (trained)

DEPARTMENT OF PHARMACOLOGY

Pharmacology is the branch of Basic Health Sciences that deals with the drugs (medicines) and their use in a rational manner. It is the study of the effects of chemical substances on the functions of the living system. As a science, it was born in the mid-19th century based on the principles of experimentation. The knowledge of pharmacology is essential as modern medicine relies heavily on drugs as the main tool of therapeutics to prevent, diagnose and treat diseases. It involves understanding of why to give, when to give, how to give a drug and how the given drug is going to solve the problem at the molecular level.

Subject information will be transferred to the students through a combination of large group and small group sessions of lecture-based learning, case-based learning and experimental learning in the laboratory with an aim to keep our students in pace with the outside world. To enhance students' participation as active learners and to develop their skills, continuous medical education (CME), updates on pharmacological news, small projects, pharmacology exhibition, quiz competition and presentations are organized every year. Students are awarded with scores and certificates in each session for participating in such activities.

FACULTY IN THE DEPARTMENT OF PHARMACOLOGY		
Name	**Designation**	**Qualification**
Dr. ShujaUllah	**Chairman/Associate Professor**	MBBS, MPhil
Dr. Pirah	Lecturer	BDS
Dr. Zeeshan	Lecturer	BDS

DEPARTMENT OF GENERAL PATHOLOGY

A dynamic and rapidly evolving field**, Pathology** is the study of disease, or more generally, the study of the biological response to adverse conditions. As an intellectual discipline, pathology bridges the basic and clinical sciences. Basic research into the causes and mechanisms of disease (experimental pathology) goes hand in glove with identifying the morphologic and biochemical manifestations of disease in human patients (anatomic and clinical pathology, respectively). All of these aspects of pathology have important diagnostic and therapeutic implications for patient care. Teaching of this body of knowledge at various pre- and post-doctoral medical and scientific levels of interest and understanding provides a unifying component to the laboratory and clinic.

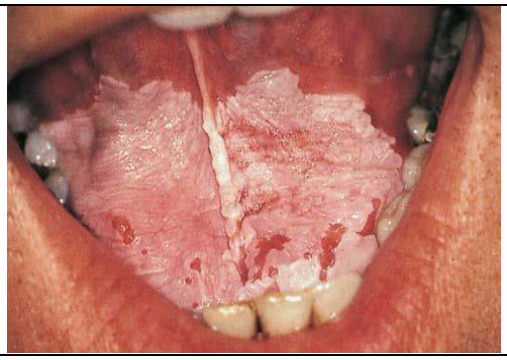
The Department of Pathology at Muhammad Dental College is a large multi-disciplinary department having two wings: Basic, located in the premises of the College, and another lab is in IBN-E-Sina Hospital.

Our goal is to advance our fundamental understanding of the pathology and the pathophysiological mechanisms of disease, and to bring this knowledge to others through teaching and publication by a research-based culture.

FACULTY IN THE DEPARTMENT OF GENERAL PATHOLOGY		
Name	**Designation**	**Qualification**
Dr Aliya Zaman	**In charge/Associate Professor**	**MBBS, M-Phil**
Dr Javeriya Bhatti	**Lecturer**	**BDS**
Dr Fabiha	Lecturer	BDS

DEPARTMENT OF ORAL PATHOLOGY

Oral Pathology is the specialty of dentistry that deals with the nature, identification and management of diseases affecting the oral and maxillofacial region. The practice of oral pathology includes research, diagnosis of diseases using clinical, radiographic, microscopic, biochemical and other examinations and management of patients. The Oral Pathology lab is well equipped with research and multimedia facilities along with highly trained faculty and staff. Research on oral pathological lesions is the integral ambition of department.



FACULTY IN THE DEPARTMENT OF ORAL PATHOLOGY		
Name	**Designation**	**Qualification**
Prof Dr Noor Ahmed Khoso	**Chairman/Professor**	**BDS, MDS**
Dr Shahzaman	**Associate Professor**	BDS, M.Sc
Dr Faiz Muhammad	**Assistant Professor**	**BDS, M-Phil, CHPE**
Dr Seerat-ul-Urooj	**Assistant Professor**	BDS, M.Sc, **CHPE**
Dr Beenish Chandio	**Assistant Professor**	BDS, MSc (OMFS), **CHPE**
Dr Sidra Kanwal	Lecturer	BDS, **CHPE**

PROGRAM INTENDED LEARNING OUTCOMES OF VARIOUS MODULES/SUBJECTS

DISEASE INFECTION AND THERAPEUTICS-I
WEEK-1
THEME-WHITE PATCHES
PATHOLOGY

	Terminal Objectives	• Demonstrate appropriate basic knowledge of medical and dental sciences. • Evaluate the use of laboratory tests and imaging studies and interpret the results to arrive at clinical decision-making by critical thinking.
	Rationale	It is essential for building a foundational understanding of disease processes that affect the oral and systemic health of patients. Pathology provides insight into the causes, mechanisms, and consequences of diseases, which is critical for diagnosing and treating various dental conditions. In this course, students learn about the cellular and molecular basis of diseases, including infections, inflammation, and cancer, as well as systemic diseases with oral manifestations. Understanding these principles helps dental students recognize signs and symptoms of diseases that may impact dental treatment or indicate broader health issues. Students are equipped with the essential knowledge to identify pathological conditions and make informed decisions in clinical practice. This foundation supports comprehensive patient care, enhances diagnostic accuracy, and prepares students to manage both common and complex cases in their future dental careers.

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours	Teacher name
01	Cell injury	Define cell injury. Describe the causes and pathogenesis of cell injury.	Interactive Lecture	BCQ SAQs OSPE	01	
02	Mechanisms of cell injury	Describe the mechanism of cell injury. Distinguish between irreversible and reversible injury.	Interactive Lecture	BCQ SAQs OSPE	01	
03	Cellular adaptations	Describe cellular Adaptations. Define Hyperplasia, Metaplasia, Dysplasia, Atrophy, Hypertrophy	Practical	OSPE	02	
04	Intracellular accumulation & Pigmentation	Describe and understand pathophysiology and clinical implications of intracellular accumulations	Practical	OSPE	02	

ORAL PATHOLOGY

	Terminal Objectives	• Demonstrate appropriate basic knowledge of medical and dental sciences.

		Evaluate the use of laboratory tests and imaging studies and interpret the results to arrive at clinical decision-making by critical thinking.				
	Rationale	This is vital for providing students with the necessary knowledge to diagnose and manage oral diseases effectively. This subject focuses on the understanding of disease processes specific to the oral cavity, including infections, inflammatory conditions, oral cancers, and developmental disorders. Students learn to recognize and differentiate between various oral lesions and conditions that may affect the teeth, gums, mucosa, and surrounding structures. This knowledge enables them to make accurate diagnoses, plan appropriate treatments, and refer patients when necessary. Integrating *Oral Pathology* at this stage of the curriculum helps students bridge basic medical sciences with clinical dentistry. It ensures that they can identify signs of systemic diseases that manifest orally and empowers them to manage oral health conditions with confidence, ultimately leading to improved patient outcomes in their future dental practice.				
01		Intro to Oral Pathology	Lecture		1	
02	Oral Mucosa & Changes in Oral Mucosa	Describe the histology of normal oral mucosa Describe the epithelial changes in oral mucosa *Atrophy Hypertrophy Hyperplasia Dysplasia Metaplasia Orthokeratosis Parakeratosis Cellular atypia	Lecture	BCQ, SAQ, OSPE	2	
		PRACTICALS				
03	Practical 1	Histopathological changes in squamous epithelium	CBL	BCQ, OSPE	90 Min	
		PHARMACOLOGY				
01	Introduction	Describe the overview of Pharmacology	Interactive Lecture	SBQs, SEQS, OSPE	01 H	

WEEK-2

THEME- WHITE PATCHES

PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours	
01	Necrosis	Define Necrosis. Differentiate between types of necrosis with examples	Interactive Lecture	BCQ SAQs OSPE	01	
02	Apoptosis	Define Apoptosis.	Interactive Lecture	BCQ SAQs	01	

		Discuss the pathogenesis and significance of apoptosis. Differentiate between apoptosis and necrosis.		OSPE		
03	Necrosis		Practical	OSPE	02	
04	Calcification	Discuss various types of calcifications Differentiate between Dystrophic and metastatic calcification and its clinical significance	Practical	OSPE	02	
ORAL PATHOLOGY						
01	Hereditary white lesions	**Describe** etiology, pathogenesis, clinical features, histopathology and prognosis of a) Oral epithelial nevus b) Leukoedema c) Other genodermatoses	Interactive Lecture	BCQ SAQs OSPE	1	
02	Reactive white lesions	**Describe** etiology, pathogenesis, clinical features, histopathology and prognosis of a) Frictional hyperkeratosis b) Nicotine stomatitis c) Hairy leukoplakia d) Hairy tongue e) Denture-induced fibrous hyperplasia			1	
03	Practical 1	a) Leukoedema/white spongy navus b)Denture induced fibrous hyperplasia	CBL	BCQ, OSPE	2	
PHARMACOLOGY						
	Terminal Objectives	• Demonstrate appropriate basic knowledge of medical and dental sciences. • Evaluate the use of laboratory tests and imaging studies and interpret the results to arrive at clinical decision-making by critical thinking.				
	Rationale	It is crucial to provide students with a strong understanding of the medications commonly used in dental practice. This knowledge ensures that dental students can prescribe safely, manage drug interactions, and understand the pharmacokinetics and pharmacodynamics of various drugs relevant to dental care. In this course, students learn about local anesthetics, analgesics, antibiotics, and medications for managing systemic conditions that may affect dental treatment.				

		Understanding drug mechanisms, dosages, side effects, and contraindications is essential for effective patient care. By integrating *Pharmacology* into the curriculum at this stage, students develop the foundational knowledge needed to make informed decisions regarding patient medications, ensuring safety and optimizing treatment outcomes. This early exposure allows future dentists to handle complex clinical situations and pharmacological challenges with confidence, enhancing their clinical competence and patient safety throughout their careers				
01	Routes of drug administration	Classify routes of drug administration & describe advantages & disadvantages of enteral routes of drug administration.	Interactive Lecture	BCQ SAQs	1 Hour	
	Routes of drug administration	Classify routes of drug administration & describe advantages & disadvantages of Par-enteral routes of drug administration.	Interactive Lecture	BCQ SAQs	1 Hour	

WEEK-3

THEME- WHITE PATCHES

PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours	Teacher name
01	Cell aging	Define cell aging. Discuss events in cellular aging	Interactive lecture	BCQ, SEQ	03	
02	CBL		Practical	OSPE	03	
ORAL PATHOLOGY						
01	Hyperplastic lesions	**Describe** etiology, pathogenesis, clinical features, and histopathology of a) Epulides b) Pyogenic granuloma c) Fibroepithelial polyp	Lecture	BCQ, OSPE	01	
02	Preneoplastic & Neoplastic White Lesions	**Describe** etiology, pathogenesis, clinical features, histopathology and prognosis of A) Leukoplakia B) Lichen Planus C) Lupus Erythematosus	Lecture	BCQ, SAQ, OSPE	2	
03	Practical 2	A) Leukoplakia B) Lichen Planus C) Lupus Erythematosus	CBLs	BCQ, SAQ, OSPE	2	

PHARMACOLOGY						
01	Drug Absorption	Describe the absorption, processes of absorption & the factors affecting drug absorption	Interactive Lecture	SBQs, SEQS,	01 Hour	
	Bioavailability & Half Life	Describe the bioavailability & half-life with their clinical importance	Interactive Lecture	SBQs, SEQS,	01 Hour	

WEEK-4-THEME-PAIN						
PATHOLOGY						
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**	**Teacher name**
01	Introduction to Acute Inflammation	Describe the role of inflammation in the defense mechanisms of the body.	Interactive lecture	BCQ, SEQ	1 Hour	
02	Acute inflammation of vascular and cellular events	Describe the vascular changes and cellular events of acute inflammation.	Interactive lecture	BCQ, SEQ	1 Hour	
03	Chemical mediator of inflammation and outcome of inflammation	List the important chemical mediators of inflammation. Describe the systemic effects of inflammation and their possible outcome.	Interactive lecture	BCQ, SEQ	1 Hour	
04	Acute Inflammation	Name cells of acute inflammation and describe morphological features in acute inflammatory condition.	Practical	OSPE	02	
	ORAL PATHOLOGY					
01	Pulpitis I	Describe the aetiology, and pathogenesis of Pulpitis Inflammatory changes of pulp - Pain mediators	Lecture	BCQ, SAQ, OSPE	1	
02	Pulpitis II	Describe the clinical features of a)acute & chronic b)reversible & irreversible	Lecture	BCQ,SAQ, OSPE	1	

		Describe the histopathology of Pulpitis - a) pulp polyp c) pulp healing d) pulp calcification e) pulp necrosis				
03	Practical 3 Periodontitis	a. Pulpitis b. Pulp polyp	Lecture	BCQ, SAQ, OSPE	1	
	PHARMACOLOGY					
01	Drug Distribution	Describe the drug distribution with the factors that affect drug distribution	Interactive Lecture	SEQs, BCQs	01 Hour	
02	Biotransformation	Define biotransformation with its phases & clinical importance	Interactive Lecture	SEQs, BCQs	01 Hour	
WEEK-5 **THEME – PAIN** **PATHOLOGY**						
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**	**Teachers name**
01	Chronic Inflammation	Describe chronic inflammation. Define granuloma. Discuss type and causes of granuloma.	Interactive lecture	BCQ, SEQ	1 Hour	
02	Repair	Discuss Repair and Regeneration	Interactive lecture	BCQ, SEQ	1 Hour	
03	Wound healing	Describe wound healing by first and second intention. Describe the formation of granulation tissue.	Practical	OSPE	2 Hour	
04	Chronic Inflammation	Describe cells of chronic inflammation. Discuss microscopic features of granuloma.	Practical	OSPE	2 Hour	
	ORAL PATHOLOGY					
01	Spread of inflammation	a. Discuss in detail the inflammatory changes occurring around area of infected tooth. b. Acute periapical periodontitis Discuss the pathogenesis and histology of chronic	Lecture	BCQ, SAQ, OSPE	1	

		periapical periodontitis (Periapical granuloma) i. **Pericronitis**				
2	Spread of inflammation	i. Discuss the etiology, microbiology, and route of spread of infection ii. periapical abscess iii. Granuloma iv. Cellulitis v. Ludwig's angina	Lecture	BCQ, SAQ, OSPE	1	
03	Practical 4 (Osteomyelitis)	Discuss the causes, pathogenesis, types and histology of osteomyelitis	cbl	2		
	PHARMACOLOGY					
01	Drug Excretion	Define Drug excretion & describe the renal and non renal routes of drug excretion	Interactive Lecture	BCQs, SEQs	01 Hour	
WEEK-6 **THEME-BURNING SENSATION** **PATHOLOGY**						
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**	**Teacher name**
01	Introduction & Innate Immunity	Describe Specific and nonspecific defense mechanisms: - Innate and acquired immunity;	Interactive lecture	BCQ, SEQ	1 Hour	
02	Adaptive Immunity	Distinguish between: antigens & antibodies B lymphocytes and T lymphocytes primary and secondary immune responses	Interactive lecture	BCQ, SEQ	1 Hour	
03	Cell mediated immunity	Outline the role of suppressor T cells in the immune response, and compare cell-mediated immunity with other types of immune response.	Interactive lecture	BCQ, SEQ	1 Hour	
04	Structure and Functions of Immunoglobulin	Understand General Structure & types of Immunoglobulins	PRACTICAL	OSPE	02 Hour	
	ORAL PATHOLOGY					

01	Vesiculobullous Disease I	Enlist the immunological disorders of oral cavity (vesiculobullous diseases) Discuss the aetiology, clinical features, histopathological & immunological features of recurrent apthous ulcers Bechet's syndrome	lecture	BCQ, SAQ, OSPE		
2	Vesiculobullous Disease II	Discuss the clinical features, pathogenesis and histology of Pemphigus vulgaris Pemphigoid Erythema multiforme ● Pemphigoid ● Dermatitis herpetiformis ● Linear Ig A disease ● Epidermolysis bullosa	CBL	OSPE	1	
03	Practical 5	Erythema multiforme	CBL	BCQ, SAQ, OSPE	1	
	PHARMACOLOGY					
	Pharmacodynamics	Describe pharmacodynamics with the mechanism of action of different receptors	Interactive lecture	BCQ, SEQ	1 Hour	

WEEK-7
THEME- BURNING SENSATION
PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours	Teacher name
01	MHCs	Discuss MHC Class 1 and MHC Class 2. Discuss transplants	Interactive lecture	BCQ, SEQ	1 Hour	
02	Hypersensitivity reactions	Define Hypersensitivity reactions. Describe its various type with examples	Interactive lecture	BCQ, SEQ	1 Hour	
03	Immunodeficiency disorders	Classify immunodeficiency disorders	Interactive lecture	OSPE	2 Hour	
04	Serological testing	Differentiate among various serological tests: Typhi dot; ELISA; ICT e.g Malaria	Practical	OSPE	2 Hour	
		ORAL PATHOLOGY				
01	Vesiculobullous Disease IV	Discuss the clinical features, pathogenesis and histology of	lecture	BCQ,SAQ,	1	

02	Vesiculobullous Disease V		Lecture	BCQ,SAQ,	1	
03	CBL 1 ,2	1- Histology of histological changes in oral mucosa 2- Hemangioma & lymphangioma	Lecture	BCQ,SAQ,	1	
PHARMACOLOGY						
01	Pharmacodynamics	Describe the factors modifying drug action	Interactive lecture	BCQs, SEQs	01 Hour	

WEEK-8

THEME- BURNING SENSATION

PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours	Teacher name
01	Autoimmunity disorders	Define Autoimmunity and self-tolerance	Interactive lecture	BCQ, SEQ	1 hour	
02	CBL		Practical	OSPE	2 hour	
03	CBL				3 hour	
ORAL PATHOLOGY						
01	CBL 3		CBL	OSPE		
02	CBL 4	1 Lichen planus	Lecture	BCQ, SAQ	1	
03	CBL 5	1 Systemic lupus erythematosus 2 pemphigus	Lecture	BCQ, SAQ	2	
PHARMACOLOGY						
01	Pharmacodynamics	Describe an adverse drug reaction	Interactive lecture	BCQ, SEQ	1 hour	

LIST OF ORAL PATHOLOGY PRACTICAL'S IN MODULE-1- (90 MIN EACH)

Practical/CBL List Module 1

1) Histopathological changes in squamous epithelium
2) Leukoedema/White sponge nevus
3) Denture-induced fibrous hyperplasia
4) Leukoplakia
5) Lichen planus
6) Erythematosus
7) Pulpitis
8) Pulp polyp
9) Erythema multiforme
10) Pemphigus vulgaris
11) SLE
12) RAS

LIST OF PHARMACOLOGY PRACTICAL'S IN MODULE-1- (90 MIN EACH)

1. Introduction to Pharmacology
2. Weigh Measurement
3. Abbreviations
4. Prescription Writing
5. Pharmaceutical Preparations
6. Prepare & Dispense carminative Mixture
7. Prepare & Dispense 100 ml Normal Saline
8. Prepare & Dispense Sulphur Ointment
9. Prepare & Dispense Turpentine Oil
10. Prepare & Dispense Potassium Permanganate

LIST OF PHARMACOLOGY CBLS IN MODULE-1- (90 MIN EACH)

1. Pharmacodynamics
2. Pharmacokinetics
3. Penicillin
4. Macrolides
5. Aminoglycosides
6. Tetracycline
7. Sulphonamides
8. Fluoroquinolones
9. Tuber colon's
10. Antifungal
11. NSAIDS
12. Corticosteroids

DISEASE, INFECTIONS & THERAPEUTICS II
WEEK-1
THEME-GENERAL MICROBIOLOGY
PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours	Teacher name
01	Introduction & Structure of the bacterial cell	List essential and non-essential structures of the bacterial cell wall with their function. Differentiate between Gram-positive and Gram-negative cell walls.	Interactive lecture	BCQ, SEQ	1 Hour	
02	Bacterial growth cycle	Describe the growth curve.	Interactive lecture	BCQ, SEQ	1 Hour	
03	Simple staining	Explain the procedure of simple staining	Practical	OSPE	02 hour	
04	Gram staining	Explain the procedure of Gram Staining.	Practical	OSPE	02 hour	
	ORAL PATHOLOGY					
01	Caries I	• Discuss the role of bacteria and dental plaque • Discuss the pathogenesis of dental caries	Lecture	BCQ, SAQ, OSPE	1	
02	Caries II	• Discuss the classifications of dental caries	Lecture	BCQ, SAQ, OSPE	2	

		● Discuss enamel caries with histopathogenesis ● Discuss dentine caries and root caries				
03	Practical 1	Enamel Caries Dentine Caries	CBL	BCQ, SAQ, OSPE	2	
PHARMACOLOGY						
01	Introduction	Introduction to Antibiotics	Interactive Lecture	BCQs, SEQs	1 hour	

WEEK-2 **THEME-GENERAL MICROBIOLOGY** **PATHOLOGY**						
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**	**Teachers name**
01	Classification & Normal flora	Classify dentally important Bacteria List normal flora of human body	Interactive lecture	BCQ, SEQ	1 Hour	
02	Bacterial Genetics	List different methods of transfer of genetic material between bacterial cells	Interactive lecture	BCQ, SEQ	1 Hour	
03	Z.N staining	Explain the procedure of Ziehl-Neelsen staining	Practical	OSPE	02 Hour	
04	Sterilization	Define Sterilization. Describe physical and chemical methods of sterilization.	Practical	OSPE	02 Hour	
ORAL PATHOLOGY						
01	Discoloration Of Teeth	● **Discuss** the causes and clinical features of exogenous and endogenous discoloration of teeth.	Lecture	BCQ	1	
02	Non-bacterial tooth loss	a) Erosion b) Abrasion c) Attrition	Lecture	BCQ.SAQ,	2	
03	Practical 2	Erosion	CBL	, OSPE	2	
PHARMACOLOGY						
01	Cell wall synthesis inhibitors	Classify Penicillin & describe its mechanism of action & side effects	Interactive Lecture	BCQs, SEQs	01 Hour	
02	Cell wall synthesis inhibitors	Classify Cephalosporins & describe their mechanism of action & side effects	Interactive Lecture	BCQs, SEQs	01 Hour	

WEEK-3 **THEME-GENERAL MICROBIOLOGY** **PATHOLOGY**					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**

01	Bacterial Pathogenesis-I	Discuss various methods and sources of transmission. Describe virulence factors	Interactive lecture	BCQ, SEQ	1 Hour
02	Bacterial Pathogenesis-II	Discuss various methods and sources of transmission. Describe virulence factors	Interactive lecture	BCQ, SEQ	1 Hour
03	Culture Media-I	Classify culture media and describe basic & Enriched media	Practical	OSPE	1 Hour
04	Culture Media-I	Discuss selective and biochemical test media	Practical	OSPE	1 Hour
ORAL PATHOLOGY					
01	Bacterial Infections I	Discuss the pathogenesis, histopathology, etiology, and clinical features • Bacterial Infections • Tuberculosis - actinomycosis	Lecture	BCQ.SAQ, OSPE	1
02	Bacterial Infections II	Discuss the pathogenesis, histopathology, etiology, and clinical features - Syphilis - NUG - Noma - Leprosy - Gonorrhea	Lecture	BCQ.SAQ, OSPE	2
03	Practical 3	Syphilis,	CBL	OSPE	2
PHARMACOLOGY					
01	Protein Synthesis Inhibitors	Classify Aminoglycosides & describe their mechanism of action & side effects	Interactive lecture	BCQ, SEQ	1 Hour

WEEK-4
THEME- GENERAL MICROBIOLOGY
PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours
01	Host defense	Describe nonspecific & specific defense mechanism against bacterial infection	Interactive lecture	BCQ, SEQ	1 Hour
02	Laboratory diagnosis of bacterial disease	Describe various methods for lab diagnosis of bacterial diseases	Interactive lecture	BCQ, SEQ	1 Hour
03	Isolation of Micro-organism	Explain various methods of isolation of microorganisms	Practical	OSPE	2 Hour
04	CBL		Practical	OSPE	2 Hour
ORAL PATHOLOGY					
Viral Infections I		Discuss pathogenesis, histopathology, etiology, clinical features ● Viral Infections: a) Herpetic Stomatitis b) Varicella Zoster	Lecture	BCQS, SAQS, OSPE	1
Viral Infections II		c) Herpangina d) hand-foot-mouth disease e) infectious mononucleosis f) Measles g) cytomegalovirus	Lecture	BCQS, SAQs, OSPE	2
Practical		Varicella zoster	CBL	BCQs, SAQs, OSPE	2
		PHARMACOLOGY			

01	**Protein Synthesis Inhibitors**	Classify Tetracyclines & Chloramphenicol & describe their mechanism of action & side effects	Interactive lecture	BCQ, SEQ	1 Hour

WEEK-5
THEME- SPECIAL MICROBIOLOGY
PATHOLOGY

S#	Topics	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	Staphylococcus	Enlist the species of Staphylococci Enlist the virulence factors & toxins. Describe pyogenic and toxin-mediated diseases caused by Staphylococcus aureus.	Interactive lecture	BCQ, SEQ	1 Hour
02	Streptococcus	Classify medically important streptococci Describe toxins, enzymes & hemolysins produced by streptococci. Discuss their pyogenic, toxigenic & post streptococcal diseases.	Interactive lecture	BCQ, SEQ	1 Hour
03	Pneumococcus	Describe morphology, pathogenesis, clinical features and lab diagnosis of Pneumococcus.	Interactive lecture	BCQ, SEQ	1 Hours
04	Lab Diagnosis of Gram Positive Cocci	Describe the lab diagnosis of Gram-positive cocci	Practical	OSPE	2 Hours
		ORAL PATHOLOGY			
01	**Candidiasis I**	● Discuss the classification of candidiasis ● Discuss the pathogenesis and histology of pseudomembranous, erythematous and chronic hyper plastic candidiasis	Lecture	BCQ.SAQ, OSPE	1
02	Candidiasis II	Discuss causes, clinical features and histology of candida associated lesions a) Denture stomatitis b) Angular cheilitis c) Median rhomboid glossitis d) Chronic mucocutaneous candidiasis	Lecture	BCQ.SAQ, OSPE	2
03	Practical	Candidiasis	CBL	OSPE	2
		PHARMACOLOGY			
01	Protein Synthesis Inhibitors	Classify macrolides & describe their mechanism of action & side effects	Interactive lecture	BCQ, SEQ	1 Hour

WEEK-6
THEME-SPECIAL MICROBIOLOGY
PATHOLOGY

S#	Topics	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	Bacillus	Outline morphology, pathogenesis, clinical features and lab diagnosis of Bacillus	Interactive lecture	BCQ, SEQ	1 Hour
02	Clostridia	Classify clostridia Describe morphology, pathogenesis, clinical features and lab diagnosis of Clostridia	Interactive lecture	BCQ, SEQ	2 Hour

03	Lab diagnosis of Gram-Negative cocci (Neisseria)	Enlist species of Neisseria. Describe their morphology, pathogenesis and laboratory diagnosis.	Practical	OSPE	2 Hour
04	Lab diagnosis of Corynebacterium diphtheria	Describe important properties, transmission, pathogenesis of diphtheria. Discuss the laboratory diagnosis of C. diphtheria.	Practical	OSPE	2 Hour
		ORAL PATHOLOGY			
01	**Cyst I**	a) Classification of cyst b) Compare the pathogenesis, Clinical, radiographic & histological features of Odontogenic cyst c) Periapical(radicular) cyst d) Dentigerous Cyst	Interactive Lecture	BCQ SAQs OSPE	1
02	**Cyst II**	**Describe** clinical, radiographic and histological features of - Odontogenic Keratocyte - Gingival cyst - Lateral periodontal cyst	Lecture	BCQ SAQs OSPE	2
03	**Practical**	Radicular Cyst, OKC	CBL	BCQ SAQs OSPE	2
		PHARMACOLOGY			
01	**DNA Synthesis Inhibitors**	Classify fluoroquinolones & describe their mechanism of action & side effects	Interactive lecture	BCQ, SEQ	1 Hour
			Interactive Lecture	BCQ SAQs OSPE	

WEEK-7
THEME-SPECIAL MICROBIOLOGY
PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours
01	Salmonella & Shigella	Describe antigenic structure and virulence factor of salmonella & Shigella Discuss lab diagnosis of Salmonella & Shigella	Interactive lecture	BCQ, SEQ	1 Hour
02	Gram negative curved rod	Describe the pathogenesis and laboratory diagnosis of gram Gram-negative curved rod	Interactive lecture	BCQ, SEQ	1 Hour
03	Lab diagnosis of E. coli & Klebsiella	Describe the morphology, cultural characteristics and Lab diagnosis of E.coli and Klebsiella	Practical	OSPE	2 Hour
04	Lab diagnosis of Proteus & Pseudomonas	Describe morphology, cultural characteristics and Lab diagnosis of Proteus & Pseudomonas	Practical	OSPE	2 Hour
		ORAL PATHOLOGY			
01	**Cyst III**	a) **Compare** the pathogenesis, clinical, radiographic and histological features of - Calcifying odontogenic cyst	Interactive lecture	BCQ, OSPE, SAQ	1

		- Glandular odontogenic cyst			
02	**Cyst IV**	**Compare** the pathogenesis, clinical, radiographic, and histological features of a) Eruption cyst b) Residual cyst	Lecture	BCQ, SAQ , OSPE	2
03	**Practical**	Calcifying odontogenic cyst	CBL	OSPE	2
PHARMACOLOGY					
01	- **Folate Antagonist**	Classify sulfonamides & describe their mechanism of action & side effects	Interactive lecture	BCQ, SEQ	1 Hour

WEEK-8
THEME- SPECIAL MICROBIOLOGY
PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours
01	Mycobacterium tuberculosis	Describe the pathogenesis and lab diagnosis of Mycobacterium tuberculosis	Interactive lecture	BCQ, SEQ	1 Hour
02	H. influenzae & Bordetella pertussis	Describe the important properties, pathogenesis and lab diagnosis.	Interactive lecture	BCQ, SEQ	1 Hour
03	Basic Mycology	Describe characteristics, structure, types and lab diagnosis of fungus.	Interactive lecture	BCQ, SEQ	1 Hour
04	CBL		Practical	OSPE	2 Hour
ORAL PATHOLOGY					
Cyst V		Describe pathogenesis clinical radiographic & histological features of Non-Odontogenic Cysts a) Nasopalatine cyst b) Nasolabial cyst c) Median cyst d) Globulomaxillary cyst	Lecture	OSPE, SAQ, BCQ	1
Cyst VI		1. **Describe** clinical, radiographic, and histological features of Non-epithelial/ pseudocyst, including a) Traumatic bone cyst b) Stafne's bone cavity c) Aneurysmal bone cyst	Lecture	OSPE, SAQ, BCQ	2

Practical		CBL	CBL	OSPE	2
		PHARMACOLOGY			
01	- **Tuberculosis**	Classify anti-tuberculosis drugs & describe their mechanism of action & side effects	Interactive lecture	BCQ, SEQ	1 Hour
02	- **Anti-fungal**	Classify anti fungal drugs & describe their mechanism of action & side effects	Interactive lecture	BCQ, SEQ	1 Hour

List of practical/CBL

1) Dental caries
2) Enamel caries
3) Erosion
4) Syphilis
5) Varicella Zoster
6) Candidiasis
7) Radicular cyst
8) OKC
9) Dentigerous cyst

MODULE-2 NEOPLASIA

WEEK-1

THEME-NEOPLASIA

PATHOLOGY

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours
01	Neoplasia	Describe the definition of neoplasia. Describe the nomenclature of neoplasia	Interactive lecture	BCQ, SEQ	1 Hour
02	Characteristic features of tumor	To describe the Characteristic of benign & Malignant tumor To know the Pathways of spread, seeding, lymphatic and haematogenous spread	Interactive lecture	BCQ, SEQ	1 Hour
03	Benign & Malignant Epithelial Tumors	Describe the gross and microscopic features of benign and malignant epithelial tumors.	Practical	BCQ, SEQ	2 Hour
04	Benign & Malignant connective tissue tumors	Describe the gross and microscopic features of benign and malignant connective tissue tumors.	Practical	OSPE	2 Hour
		ORAL PATHOLOGY			
01	Disturbances in sizes number of teeth I	**Describe** the clinical radiographic features in number of teeth: a) Anodontia	Lecture	BCQ, SAQ, OSPE	1

		b) hypodontia/ supernumerary teeth c) hypodontia/ oligodontia d) impaction Describe the disturbances in sizes of teeth: a) Macrodontia b) Microdontia			
02	**Disturbances in sizes number of teeth II**	Discuss the alteration in the form of teeth, including a) Germination b) Fusion c) Concrescence d) Dens invaginatus e) Dens evaginatus f) Enamel pearls g) Taurodontism h) Dilaceration i) Supernumerary roots	Lecture	BCQ, OSPE	2
03	Practical	1) Discuss the Disturbance in form of teeth 2) HED	CBL	BCQ, OSPE	2
PHARMACOLOGY					
01	Anti-neoplastic drugs	Discuss the anticancer drugs-1	Lecture	BCQs, SEQs, OSPE	1
02	Anti-neoplastic drugs	Discuss the Anti-cancer drugs -2	Lecture	BCQS, SEQS, OSPE	1

BDS MODULE II-WEEK-2 THEME-NEOPLASIA PATHOLOGY					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	**MOLECULAR BASIS OF CANCER -I**	Discuss the Normal cell cycles and the fundamental principles of cancer regarding cycle Discuss the Essential alterations in malignant transformation Discuss the Steps of cell proliferation Protooncogenes	Interactive lecture	BCQ, SEQ	1 Hour

		and growth factors and their receptors			
02	**MOLECULAR BASIS OF CANCER -II**	Discuss the two-hit hypothesis of Knudson's Tumor Suppressor genes Discuss the Cellular changes in tumor cells Discuss the DNA repair defects Discuss the Homing of tumor cells Discuss the Development of sustained angiogenesis	Interactive lecture	BCQ, SEQ	1 Hour
03	**CARCINOGENIC AGENTS (Radiation Carcinogenesis)**	To discuss the Epidemiology of cancers To discuss Different types of carcinogens To discuss the Mechanism of action of radiation carcinogen	Interactive lecture	BCQ, SEQ	2 Hour
04	**CARCINOGENIC AGENTS (Chemical &Viral Carcinogenesis)**	To discuss the Mechanism of action of chemical & viral carcinogens	Interactive lecture	BCQ, SEQ	2 Hour
		ORAL PATHOLOGY			
01	**Disturbance in form of teeth III**	**Describe** the etiology, types, and clinical features of the following disturbances in structure of teeth: a) Disturbance in the structure of enamel - environmental defects of enamel - amelogenesis imperfecta	lecture	BCQ.SAQ, OSPE	1
02	**Disturbance in form of teeth IV**	Describe etiology types clinical, radiographic histological features : a) Disturbance in the structure of dentine - Dentinogenesis imperfecta - Dentine dysplasia b) Disturbance in structure of cementum - Hypercementosis	Lecture	BCQ.SAQ, OSPE	2

		- hypocementosis c) Disturbance in structure of pulp: - Pulp calcifications - Internal resorption - External resorption			
03	**Practical**	Dentinogenetic imperfecta Amelogenesis Imperfecta	CBL	BCQ.SAQ, OSPE	2
PHARMACOLOGY					
01	**Autonomic drugs**	Introduction to ANS	Lecture	BCQS SEQS OSPE	1
02	**Autonomic Drugs**	**Cholinomimetic Direct Acting**	**Lecture**	**BCQS SEQS OSPE**	**1**
03	**Autonomic drugs**	**Cholinomimetic Indirect Acting**	**Lecture**	**BCQS SEQS OSPE**	**1**
WEEK-3 **THEME- NEOPLASIA** **PATHOLOGY**					
S#	Topics	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	Tumor Viruses	Classify the tumor Viruses Describe the role of tumor viruses in malignant transformation. Discuss the mechanism involved in carcinogenesis.	Interactive lecture	BCQ, SEQ	1 Hour
02	Diagnostic approach of Neoplasia	Describe various methods for lab diagnosis of Neoplasia.	Practical	OSPE	2 Hour
03	CBL		Practical	OSPE	2 Hour
ORAL PATHOLOGY					
01	Odontogenic Tumor I	1) Classify odontogenic tumors 2) Differentiate the following based on etiology, pathogenesis, clinical features, histopathogenesis a) Evaginated odontome b) Enamel pearl c) Complex odontome d) Compound odontome	Lecture	BCQ.SAQ, OSPE	2

02	**Odontogenic Tumor II**	Describe the following on the basis of etiology, pathogenesis, clinical features and histopathology a) Ameloblastoma	Lecture	BCQ.SAQ,OSPE	1
03	**Practical**	1) Ameloblastoma 2) Odontomas	CBL	BCQ.SAQ, OSPE	2
		PHARMACOLOGY			
01	**Autonomic drugs**	Anticholinergic drugs	Lecture	BCQS SEQS OSPE	1
02	**Autonomic drugs**	Sympathomimetic	Lecture	BCQS SEQS OSPE	1
		WEEK-4 **THEME-HAEMODYNAMICS** **PATHOLOGY**			
S#	Topics	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	Edema	Define edema Discuss its pathogenesis.	Interactive lecture	BCQ, SEQ	1 Hour
02	Hemorrhage, Hyperemia and congestion	Define Haemorrhage, Hyperaemia and congestion. Describe pathophysiology of these conditions	Interactive lecture	BCQ, SEQ	1 Hour
03	Thrombosis	Define thrombosis and mention its etiology Describe pathophysiology, risk factors and complications of thrombosis.	Interactive lecture	BCQ, SEQ	2 Hours
04	**CBL**		Practical	OSPE	2 Hours
		ORAL PATHOLOGY			
01	**Odontogenic Tumor III**	**Discuss** etiology, pathogenesis, clinical features, and histopathology of Squamous odontogenic tumors b) Calcifying epithelial odontogenic tumor c) Adenomatoid odontogenic tumor	Lecture	BCQS, SAQS, OSPE	1
02	**Odontogenic Tumor IV**	**. Discuss** etiology, pathogenesis, clinical features, and histopathology of the following a) Ameloblastic fibroma	Lecture	BCQS, SAQs, OSPE	2

		b) Ameloblastic fibroodontoma c) odontoma			
03	**Practical**	CEOT, AOT	CBL	BCQs, SAQs, OSPE	2
	PHARMACOLOGY				
01	**Autonomic drugs**	Alpha blockers	Lecture	BCQS SEQS OSPE	1
02	**Autonomic drugs**	Beta Blockers	Lecture	BCQS SEQS OSPE	1

WEEK-5 **THEME- HEMODYNAMICS** **PATHOLOGY**					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	**Embolism**	Define emboli. Discuss causes, complications, types, and fate of emboli.	Interactive lecture	BCQ, SEQ	1 Hour
02	**Infarction**	Define Infarction. Discuss its mechanism and types.	Interactive lecture	BCQ, SEQ	1 Hour
03	**Shock**	Define Shock and enlist its types. Describe its pathophysiology and stages of shock.	Interactive lecture	BCQ, SEQ	2 Hour
04	**CBL**		Practical	OSPE	2 Hour
	ORAL PATHOLOGY				
01	**Odontogenic Tumor V**	**Discuss** etiology, pathogenesis, clinical features, and histopathology of the following a) Odontogenic cementoblastoma b) Odontogenic myxoma c) cementoblastoma	Lecture	BCQ.SAQ,OSPE	1
02	**Oral potentially malignant lesions**	1) **Describe** the etiology, pathogenesis, clinical features, and histopathology of - Erythroplakia - OSF	Lecture	BCQ.SAQ,OSPE	2
03	**Practical**	OSF	CBL	BCQ.SAQ, OSPE	2
	PHARMACOLOGY				
01	**Drugs acting on CNS**	To Discuss Sedatives & Hypnotics	Lecture	BCQS SEQS OSPE	1

02	**Drugs Acting on CNS**	To Discuss anti Parkinson Drugs	Lecture	BCQS SEQS OSPE	1

WEEK-6 **THEME- GENETICS** **Pathology**					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	**Classification of Genetic Diseases & Mutation**	Classify genetic diseases. Define mutation and its type	Interactive lecture	BCQ, SEQ	1 Hour
02	**Mendelian disorders**	Define mendelian disorders. Classify mendelian disorders	Interactive lecture	BCQ, SEQ	1 Hour
03	**Chromosomal disorders**	Classify chromosomal disorders. Describe types of structural and numerical abnormalities	Interactive lecture	BCQ, SEQ	1 Hour
04	**Diagnosis of Genetic diseases**	Discuss various method for the diagnosis of genetic diseases.	PRACTICAL	OSPE	02 Hour
	ORAL PATHOLOGY				
01	**Oral potentially malignant and malignant lesions**	**Describe the** etiology, pathogenesis, clinical features, and histopathology of Basal Cell Carcinoma	Interactive Lecture	BCQ SAQs OSPE	1
02	**OSCC**	**Describe** The etiology, epidemiology, pathogenesis, of OSCC **Explain** the clinical features , histopathology staging and grading of Oral squamous cell carcinoma. (OSCC)	Lecture	BCQ SAQs OSPE	2
03	**Practical**	OSCC	CBL	BCQ SAQs OSPE	2
	PHARMACOLOGY				
01	**Drugs Acting on CNS**	General Ansthetics-1	Lecture	BCQS SEQS OSPE	1
02	**Drugs acting on CNS**	General Ansthetics-2	Lecture	BCQS SEQS OSPE	1

WEEK-7

THEME- GENETICS PATHOLOGY					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	Hours
01	**Inborn errors of Metabolic disorders**		Interactive lecture	BCQ, SEQ	1 Hour
02	**CBL**		Practical	OSPE	2 Hour
		ORAL PATHOLOGY			
01	**Benign soft tissue tumors**	Describe the pathogenesis, Clinical features, histopathology of a) Fibroma b) Myofibroma c) Lipoma	Interactive lecture	BCQ,OSPE	1
02	**Benign soft tissue tumors**	d) Lymphangioma e) Hemangioma f) Neurofibroma g) Schwannoma	Lecture	BCQ,SAQ, OSPE	2
03	**Practical**	Benign soft tissue tumors	CBL	OSPE	2
		PHARMACOLOGY			
	Drugs Acting on the CNS	Local Anesthetics	Lecture	BCQs, SEQs, OSPE	1
	Drugs Acting on CNS	Anti-Depressants	Lecture	BCQS SEQS OSPE	1

WEEK-8 REVISION PATHOLOGY					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
		ORAL PATHOLOGY			
	Revision	**Revision**	Lecture	BCQ, OSPE	1
	Revision	**Revision**	Lecture	BCQ, OSPE	2
	Practical	**Revision**	CBL	OSPE	2
		PHARMACOLOGY			
01	**Drugs Acting on the CNS**	**Anti Psychotics**	Lecture	BCQS SEQS OSPE	1
02	**Drugs Acting on the CNS**	**Alcohol**	Lecture	BCQS SEQS OSPE	1

CBL List:

1) Disturbance in form of teeth
2) HED
3) Dentinogenesis imperfecta
4) Amelogénesis imperfecta
5) Ameloblastoma

6) Odontomes
7) Ceot
8) AOT
9) OSF
10) OSCC

LIST OF PHARMACOLOGY PRACTICAL'S IN MODULE-2- (90 MIN EACH)

1. Observe the effect of Atropine
2. Observe the effect of Pilocarpine
3. Observe the effect of Adrenaline
4. Observe the effect of Xylocaine
5. Observe the effect of unknown drugs

LIST OF PHARMACOLOGY CBLS IN MODULE-2- (90 MIN EACH)

1. Anti-Cancer
2. Alpha Blockers
3. Beta Blockers
4. Cholinergic
5. Adrenergic
6. Sedative Hypnotics
7. Anti Psychotics
8. Anti-Depressants
9. Anti Parkinson's
10. General Anesthetics
11. Local Anesthetics
12. Opioids

MODULE-III-OROFACIAL COMPLEX
WEEK-1
THEME-OROFACIAL COMPLEX

S#	Topics	Learning Objectives	Teaching Strategies	Assessments	Hours
01	**Structure and classification of virus**	Describe structure of virus List major groups of DNA and RNA viruses that infect humans	Interactive lecture	BCQ, SEQ	1 Hour
02	**Viral Replication**	Describe various steps in replication of virus	Interactive lecture	BCQ, SEQ	1 Hour
03	**Viral pathogenesis**	Describe the effect of virus infection on the cell. Discuss how viral diseases spread inside the body.	Interactive lecture	BCQ, SEQ	1 Hour
04	**Host defense**	Describe the role of interferon and natural killer cell against viral infection.	Interactive lecture	BCQ, SEQ	1 Hour
	ORAL PATHOLOGY				
01	**HIV I**	**Discuss** the Clinical and histopathological features of following Human Immunodeficiency Virus and AIDS	Lecture	BCQS,	1

02	**HIV II**	**Discuss** the oral manifestations of HIV	Lecture	BCQS,	2
03	Practical	HIV	CBL	BCQ, OSPE	2

WEEK-2 **THEME- SPECIAL VIROLOGY**					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	Lab diagnosis of viral diseases	Discuss various methods for the diagnosis of viral diseases	Interactive lecture	BCQ, SEQ	1 Hour
02	Hepatitis virus	Classify the hepatitis virus and describe the pathogenesis and laboratory diagnosis	Interactive lecture	BCQ, SEQ	1 Hour
03	HIV	Describe the structure of HIV. Discuss clinical stages of HIV infection. Outline opportunistic infection in the late stage of AIDS	Interactive lecture	BCQ, SEQ	1 Hour
04	CBL		Practical	OSPE	2 Hours
	ORAL PATHOLOGY				
01	**Oral Manifestations of Systemic Diseases**	**Discuss** the clinical and histopathological features of the following Systemic diseases and their oral manifestations: Renal disease, GIT disease, liver cirrhosis	Lecture	BCQ, OSPE,	1
02	**TMJD**	**Discuss** the clinical and histopathological features of the following: A) Discuss developmental disorders of TMJ - Aplasia, hyperplasia, hypoplasia B) Discuss inflammatory disorders of TMJ: - traumatic arthritis - infective arthritis - Rheumatoid arthritis Discuss the causes and clinical features of - Osteoarthritis - Myofacial pain dysfunction - Disc displacement	Lecture	BCQ, OSPE	2
03	**Practical**	CBL RA	CBL	BCQ, OSPE	2

WEEK-3 THEME-SPECIAL VIROLOGY PATHOLOGY					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	**Herpes virus**	Classify the Herpes virus Describe pathogenesis, clinical presentation, and lab diagnosis of the herpes virus	Interactive lecture	BCQ, SEQ	1 Hour
02	**Polio & Dengue viruses**	Describe the pathogenesis clinical feature and lab diagnosis of important Polio & Dengue viruses	Interactive lecture	BCQ, SEQ	1 Hour
03	**CBL**		Practical	OSPE	2 Hour
	ORAL PATHOLOGY				
01	**Salivary gland diseases I**	**Describe** reactive lesions of salivary gland - Mucous extravasation cyst - Mucous retention cyst - Necrotizing sialometaplasia Describe conditions that alter salivary flow I. Xerostomia II. Sialorrhea	Interactive lecture	BCQ, SAQ OSPE	1
02	**Salivary gland disease II**	**Describe** Clinical features, histopathology and investigations **Sjogren's syndrome** **Describe** pathogenesis, clinical and diagnostic features of the bacterial infections of the salivary glands: I. Bacterial sialadenitis II. Chronic Bacterial sialadenitis **Describe** pathogenesis, clinical and diagnostic features of the Viral infections of the salivary glands III. i. Mumps IV. ii. Cytomegalovirus sialadenitis	Lecture	BCQ, SAQ	2
03	**CBL**	Sjogren's syndrome	CBL	BCQ, OSPE	1

WEEK-4 THEME- PARASITOLOGY

PATHOLOGY					
S#	**Topics**	**Learning Objectives**	**TEACHING STRATEGIES**	**Assessments**	**Hours**
01	**E. histolytica; Giardia**	Classify protozoa and describe the pathogenesis and lab diagnosis of E. Histolytica & Giardia	Interactive lecture	BCQ, SEQ	1 Hour
02	**Leishmania**	Define hemoflagellates Enumerate the medically important species of Leishmania Describe vector, life cycle, pathogenesis clinical manifestation and lab diagnosis of Leishmaniasis	Interactive lecture	BCQ, SEQ	1 Hour
03	**Trichomonas Toxoplasma &**	Describe the pathogenesis, clinical features, and lab Diagnosis of Toxoplasma & Trichomonas.	Interactive lecture	BCQ, SEQ	2 Hour
04	**Lab diagnosis of Malaria**	Classify Plasmodium Describe the life cycle species and lab diagnosis.	Practical	OSPE	2 Hour
	ORAL PATHOLOGY				
01	**Salivary gland disease IV**	**Describe** the pathogenesis, clinical and diagnostic features of salivary gland tumors. I. Pleomorphic adenoma II. Warthin tumor III. Basal cell adenoma	Lecture	BCQ, SAQ, OSPE	1
02	**Salivary Gland Tumors II**	**Describe** the pathogenesis, clinical and diagnostic features of salivary gland tumors. ytoma cular adenoma papillomas **Describe** the pathogenesis, clinical and diagnostic features of salivary gland tumors (Carcinomas) I. Mucoepidermoid carcinoma II. Acinic cell carcinoma III. Adenoid cystic carcinoma	Lecture	BCQ, SAQ, OSPE	2
03	**Practical**	Pleomorphic adenoma Warthin's tumor	CBL	OSPE	2
WEEK-5					

THEME- PARASITOLOGY PATHOLOGY					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**
01	**Intestinal nematodes**	Classify the medically important intestinal Nematodes. - Describe their life cycle, clinical findings and laboratory diagnosis.	Interactive lecture	BCQ, SEQ	1 Hour
02	**Tissue Nematodes**	Classify the medically important tissue Nematodes. - Describe their life cycle , clinical findings and laboratory diagnosis	Interactive lecture	BCQ, SEQ	1 Hour
03	**Lab diagnosis of Worms**	Discuss lab diagnosis of T.saginata, E. granulosis & D.latum.	Practical	OSPE	1 Hour
04	**CBL**		Practical	OSPE	2 Hour
		ORAL PATHOLOGY			
01	**Inherited and developmental disorders of bone**	1. **Discuss** the inherited and developmental disorders: I. Osteogenesis imperfecta II. Osteopetrosis III. Achondroplasia	lecture	BCQ, SAQ,	1
02	**Fibro-osseous lesions I**	**Discuss** etiology, clinical features, and pathogenesis of - monostotic fibro-osseous lesions - poly ostotic fibro-osseous lesions.	Lecture	BCQ, SAQ, OSPE	2
03	**Practical**	CBL fibrous dysplasia	CBL	BCQ, SAQ, OSPE	2
		PHARMACOLOGY			
01	**Blood**	Coagulants and anticoagulants.	Interactive Lecture	BCQ, SAQ, OSPE	2
02	**Blood**	Drugs used in Anemia.	Interactive	BCQ, SAQ, OSPE	2
03	**GIT**	Drugs used in peptic ulcer.	Lecture	BCQ, SAQ, OSPE	2

WEEK-6 THEME- SYSTEMIC PATHOLOGY PATHOLOGY					
S#	**Topics**	**Learning Objectives**	**Teaching Strategies**	**Assessments**	**Hours**

01	Anemia	Classify Anemia. List the investigation to reach a diagnosis of anemia.	Interactive lecture	BCQ, SEQ	1 Hour
02	Lipid Profile	Explain the lipid profile test	Practical	OSPE	2 Hour
03	Diagnosis of Ischemic Heart Diseases (IHD)	Define ischemic heart disease and its types. Discuss the lab diagnosis of IHD	Practical	OSPE	2 Hour
04	COPD	Define COPD Discuss various diseases in this term	Interactive lecture	BCQ, SEQ	1 Hour
		ORAL PATHOLOGY			
01	**Metabolic and endocrine disorder of bone I**	2. **Discuss** the pathogenesis and diagnostic features of the following metabolic and endocrine conditions: a) Osteoporosis b) Hyperparathyroidism c) Hypothyroidism and hyperthyroidism	Lecture	BCQ, SAQ,	1
02	**Metabolic and endocrine disorder of bone II**	3. **Discuss** the pathogenesis and diagnostic features of the following metabolic and endocrine conditions: d) Hypophosphastasia e) Acromegaly f) Rickets and osteomalacia g) Paget's Disease	Interactive lecture	BCQ, SAQ, OSPE	2
03	**Practical**	Paget's Disease	CBL	BCQ, SAQ,	2
		PHARMACOLOGY			
01	**GIT**	Anti-emetics.	Lecture	BCQ, SAQ, OSPE	1
02	**Respiration**	Drugs used in Asthma.	Interactive lecture	BCQ, SAQ, OSPE	1
03	**CVS**	Drugs used in hypertension.	Interactive lecture	BCQ, SAQ, OSPE	1

WEEK-7

THEME- SYSTEMIC PATHOLOGY

PATHOLOGY

S#	Topics	Learning Objectives	TEACHING STRATEGIES	Assessments	Hours
01	Crohn's disease & Ulcerative colitis	Describe the pathophysiology and Distinguish between the signs, symptoms, and complications of ulcerative colitis and Crohn's disease	Interactive lecture	BCQ, SEQ	01

02	Peptic Ulcers	Discuss the causes, pathogenesis, and clinical presentation of peptic ulcer	Interactive lecture	BCQ, SEQ	01
03	Laboratory interpretation of Diabetes mellitus	Discuss the types, pathophysiology, and lab diagnosis of diabetes mellitus.	Practical	OSPE	2 Hour
04	Thyroid Function Test	Interpret the thyroid function test in thyroid disorders	Practical	OSPE	2 Hour
		ORAL PATHOLOGY			
01	Central giant cell granuloma, Exostosis, Cherubism	1. **Describe the** clinical and diagnostic features of central giant cell granuloma 2. **Describe** exostoses and tori in the mandible and maxilla 3. **Discuss** the pathogenesis and diagnostic features of cherubism	Lecture	BCQ, SAQ, OSPE	1
02	Tumors of Bone I	**Describe** the etiology, pathogenesis, clinical and diagnostic features of bone tumors, including: a) Osteoma and osteoblastoma b) Osteosarcoma c) Ossifying fibroma d) Osteosarcoma e) Ossifying fibroma	Lecture	BCQ, SAQ,	2
03	Practical	CBL Cherubism	CBL	BCQ, SAQ,	2
	PHARMACOLOGY				
01	**CVS**	Anti-anginal drugs.	Interactive Lecture	BCQ, SAQ, OSPE	1
02	**CVS**	Diuretics	Lecture, SGD	BCQ, SAQ, OSPE	1
03	**CCF**	Cardiac glycosides.	Lecture, CBL	BCQ, SAQ, OSPE	1

		WEEK-8 **THEME-** **PATHOLOGY**			
		ORAL PATHOLOGY			
01	CBL I, II,	Revision	CBL	OSPE	1
02	CBL III, IV,	Revision	CBL	OSPE	2
03	CBL V, VI, VII	Revision	CBL	OSPE	2
	PHARMACOLOGY				
01	**Endocrinology.**	Drugs used in Diabetes Mellitus. (Insulin)	Lecture, CBL	BCQ, SAQ, OSPE	1

02	**Endocrinology.**	Oral Ant diabetics	Lecture	BCQ, SAQ, OSPE	1
03	**Endocrinology.**	Drugs used in Thyroid diseases.	Interactive Lecture	BCQ, SAQ, OSPE	1
ORAL PATHOLOGY					
List of CBL: 1) HIV 2) Sjogren's syndrome 3) Rheumatoid arthritis 4) mucocele 5) Pleomorphic adenoma 6) Wartin's tumor 7) Fibrous dysplasia 8) Paget's disease 9) Cherubism					

LIST OF PHARMACOLOGY CBLS IN MODULE-3- (90 MIN EACH)

1. Hypertension
2. Anti-anginal
3. Cardiac Failure
4. Diuretics
5. Asthma
6. Antiemetics
7. Peptic Ulcer
8. Anti-Coagulation
9. Anemia
10. Diabetics

LIST OF PHARMACOLOGY PRACTICALS IN MODULE-3- (90 MIN EACH)

1. Calculation of doses: According to age, body weight, & body surface area, & calculation of dose from stock solution
2. Clinical management and prescription writing for Prophylactic therapy before dental procedures.
3. Clinical Pharmacology Seminar on management and prescription writing for dental abscess, aphthous ulcer & sore throats.
4. Prescription writing for pneumonia (Typical, atypical & nosocomial)
5. Pharmacological management and prescription writing for oral thrush & aspergillosis
6. Prescription writing for squamous cell carcinoma & lymphoma of the oral cavity

LIST OF PATHOLOGY PRACTICALS FOR ENDO/PEADO & ORAL PATHOLOGY			
Duration-2 Months, Total Contact Hours=32 & Total # of Sessions=24			
Weeks/Days/Timings		**Topics**	**Facilitator**
Week 1	Monday (11:30 am-1:00 pm)	Introduction to Pre-Endodontic Procedures	Dr Saima
	Tuesday (11:30 am-1:00 pm)	Macroscopic Armamentarium of Endodontic Procedures	Dr Saima
	Monday (2:30 Pm-4:00 Pm)	Microscope	Oral Pathology
Week 2	Monday (11:30 am-1:00 pm)	Structure & Composition of Enamel Function	Dr Saima
	Tuesday (11:30 am-1:00 pm)	Enamel defects & Clinical features	Dr Saima
	Monday (2:30 Pm-4:00 Pm)	Pathogenesis of Enamel Defects	Oral Pathology
Week 3	Monday (11:30 am-1:00 pm)	Structure & Composition of Dentine	Dr Saima
	Tuesday (11:30 am-1:00 pm)	Dentine defects & Clinical features	Dr Saima
	Monday (2:30 Pm-4:00 Pm)	Pathogenesis of dental defects	Oral Pathology
Week 4	Monday (11:30 am-1:00 pm)	Introduction to pulp, zones of pulp, and access opening	Dr Saima
	Tuesday (11:30 am-1:00 pm)	Pulpal & Periapical diseases	Dr Saima
	Monday (2:30 Pm-4:00 Pm)	Pulpal & Periapical diseases pathogenesis	Oral Pathology
Week 5	Monday (11:30 am-1:00 pm)	Sequel of pulpitis and spread of Infection	Dr Saima
	Tuesday (11:30 am-1:00 pm)	Histopathology steps of Slide preparation	Oral Pathology
	Monday (2:30 Pm-4:00 Pm)	Principles of tooth sectioning+ Handson Tooth sectioning	Oral Pathology
Week 6	Monday (11:30 am-1:00 pm)	Case presentations & Revision classes	All faculties Operative Department
	Tuesday (11:30 am-1:00 pm)	Introduction to Paediatric Dentistry	
	Monday (2:30 Pm-4:00 Pm)	Dental radiology (Type & Indication)	Oral Pathology
Week 7	Monday (11:30 am-1:00 pm)	Early Childhood Caries	
	Tuesday (11:30 am-1:00 pm)	Pulpotomy in Children	
	Monday (2:30 Pm-4:00 Pm)	Revision Class of Oral Pathology	Oral Pathology
Week 8	Monday (11:30 am-1:00 pm)	Presentations by Students	
	Tuesday (11:30 am-1:00 pm)	Presentations by Students	
	Monday (2:30 Pm-4:00 Pm)	Assessment Test	

<table>
<tr><th colspan="3">COURSE OUTCOME DENTAL MATERIALS & PRE-CLINICAL DENTAL SCIENCE</th></tr>
<tr><td>Terminal Objectives</td><td colspan="2">• Demonstrate appropriate basic knowledge of medical and dental sciences.
• Recognize patients with special care and perform dental emergencies, having good communication skills.
• To exhibit ethical patient-centered care based on integrity, humility, social accountability and high ethical values of this sacred profession</td></tr>
<tr><td>Rationale of Dental Materials</td><td colspan="2">Teaching the Science of Dental Materials in the second year of the Bachelor of Dental Surgery (BDS) program is essential for providing students with a strong foundation in the properties, manipulation, and applications of various materials used in dentistry. Since dental procedures rely on a wide range of biomaterials, understanding their composition, behaviour, and clinical performance is crucial for ensuring successful treatments.

At this stage, students learn about restorative materials, impression compounds, cements, ceramics, and polymer-based materials. This knowledge helps them select appropriate materials based on factors such as biocompatibility, strength, durability, and aesthetics. Practical exposure to material handling enhances their technical skills and prepares them for future clinical work.

The student develops critical thinking in material selection and application. This foundation is essential for their transition into clinical dentistry, ensuring they can provide safe, effective, and long-lasting dental restorations and prostheses.</td></tr>
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<tr><td>Biomaterial Pre-Clinical & Clinical Operative Dentistry-II</td><td>Biomaterials Pre-Clinical & Clinical Prosthodontics-I</td><td>Clinical Care & Professionalism-II</td></tr>
<tr><td>Rationale:
• To equip students with the knowledge and technical skills required for restorative dental procedures. This subject builds on fundamental concepts from the first year, allowing students to refine their</td><td>Rationale:
To develop students' understanding and technical skills in the design and fabrication of prosthetic dental devices.
This subject provides students with the foundational knowledge needed to restore</td><td>Rationale:
It is essential for shaping students into competent, ethical, and compassionate dental professionals.
This subject helps students understand the importance of patient-centered care, professionalism, communication</td></tr>
</table>

understanding of cavity preparation, restorative materials, and techniques for restoring tooth function and aesthetics. • At this stage, students gain hands-on experience in simulated clinical settings, practicing cavity designs, amalgam and composite restorations, and proper instrumentation. • Emphasis is placed on precision, ergonomics, and adherence to infection control protocols. • This training helps students develop confidence and competence before transitioning to real patient care in later years. • To enhance their problem-solving abilities and technical proficiency, ensuring they are well-prepared for advanced clinical practice and the effective management of dental caries and other restorative needs.	oral function and aesthetics in patients with missing teeth or compromised oral structures. Students learn the principles of designing complete and partial dentures, including impression techniques, jaw relation recording, and occlusion management. The pre-clinical setting allows them to practice these techniques in a controlled environment, enhancing their precision and manual dexterity. They also gain an understanding of the materials and tools used in prosthodontic procedures. Students are equipped with essential skills and a deeper understanding of prosthetic rehabilitation. This preparation ensures they are ready to move on to clinical prosthodontics in later years, where they can apply their knowledge to real patient care.	skills, and ethical decision-making in clinical practice. At this stage, students begin to observe and participate in clinical settings, where they learn about patient management, treatment planning, and maintaining professional conduct. They are taught the importance of building rapport, maintaining confidentiality, and practicing informed consent. Additionally, students are introduced to the principles of teamwork, time management, and ethical responsibility in healthcare delivery. Students are encouraged to develop a strong professional identity early in their education. This foundation ensures that they approach clinical practice with integrity, empathy, and the commitment to delivering high-quality, patient-centered care throughout their careers.
Learning Objectives	**Learning Objectives**	**Learning Objectives**
• Instruments used in composite restoration • Adhesive Dentistry • Rubber dam isolation • Principles of Adhesion to Enamel and Dentin • Acid Etch Technique • Dentin bonding agents • Dental composite (composition and classification) • Dental composite (properties and applications) • Class-I Tooth preparation and restoration • PBL-1: Posterior Restoration • Dental Composite Handling	• Objectives of Fixed Prosthodontics and related Terminologies • History taking, Examination and Radiographs • Diagnostic Casts and their Articulation • Metal and Alloys • Full Metal Crown • Base Metal Alloys • PBL Based Learning • Porcelain Bonding Alloys (Gold Alloys) • Ceramic System • Porcelain Fused to Metal Crown	• Orientation, Course Overview, Class Code of Conduct • Dentition and Notation • Examination of Oral Cavity and Examination Instruments • Individual differences Personality (Intelligence & Emotions) • Introduction to Community & Preventive Dentistry, Instruction about Oral HygieneMeasures • Research Design in Oral

• Class-II cavity preparation & Restoration • Class-III cavity preparation & Restoration • Class-IV cavity preparation & Restoration • Cervical Restoration • Pits and fissure sealants • PBL-2: Anterior Restoration • Cavity designs in deciduous teeth • Materials used in pulpotomy for primary teeth • Pulpectomy in deciduous teeth and restoration • Early childhood caries and its management • Model preparation • Access cavity, Working length determination, root canal preparation • Sealers and root canal filling materials, Restoration of endodontically treated teeth • PBL-3: Pulpotomy & Endodontic Materials • Evaluation (Didatic Component) • Evaluation (Psychomotor Component)	• All Ceramic Crown • Elastomers Impression Materials and relevant techniques • Working Casts and Dies. Basic PINDEX Technique • Wax Pattern Fabrication • Investment Materials and Investing Technique • Casting Technique • PBL-Based Learning • Color and Dental Shade Principles • Dental Cements • Provisional Restoration • Resin Bonded Restoration • Implant Supported and Retained Prosthesis • PBL Based Learning • Discussion & Revision	Epidemiology • Individual differences Personality (Motivation / Need / Drive and Learning) • Dental OPD Management-1: Specific Department • Biostatistics-I • Interviewing / Psychosocial History Taking • Ethical Decision-Making Model I and Anatomy of Medical / Dental Malpractice • Biostatistics-II • Anthropology: Culture and Medical / Dental Practice • Dental OPD Management-II: Specific Department • Ethics and Dental Research • Psychological Reaction • Dental OPD Management-III: Specific Department • Ethics Issues in Dental Practice-I (Harassment) • Communication Skills, Counselling, Information Care • Dental OPD Management-IV: Specific Department • Ethics Issues in Dental Practice-II (Patient or Dentist with Infectious Diseases) • Ethical Issues in Dental Practice-III (Conflict or Interest & Relationship withPharmaceutical Companies) • Case Based Learning / Discussion & Revision

RESEARCH METHODOLOGY-II

- Introduction to research protocol
- Types of research drafts
- How to search literature: -Access to different types of research databases
- Finding an award winning title for research
- Designing research project: -Basic guidelines, -Computer programs -MS word
- How to prepare title page of project
- How to write an introduction and a rationale
- How to add research hypothesis and finalize the objective(s) of research
- How to write material and methods of the project: -Study designs, -Setting, -Period,Types of sampling techniques
- Types of Research designs: -Observational and Experimental studies
- How to calculate Sample size: -
  Types of online sample size calculators, -Sample
- Selection, -Data collection procedure
- Creating Gantt Chart of the project
- How to add the table of content and page numbers to the research draft
- Introduction to SPSS
- Installation of SPSS licensed version
- Types of statistical and methodological variables
- How to enter variables into SPSS
- How to import data into and export from SPSS
- How to code in SPSS
- How to transform continuous variables into categories in SPSS.
- How to analyze categorical variables: -Tabular presentation, -
- Graphical presentation
- How to and analyze numerical variables: -Tabular presentation, -Graphical presentation
- What is hypothesis testing? -null hypothesis, -alternative/research hypothesis
- What is P value and confidence interval?
- How to interpret the significance of the study
- Measures of central tendency: -Mean, Median and Mode
- Measure of Dispersion: -Range, Inter-quartile range, Standard deviation
- Understanding parametric and non-parametric data: -Normal distribution, -Skewedcurve
- Types of statistical tests
- Indications of Chi square test
- Indication of Independent sample t-test
- When to apply Paired sampled t-test?
- What in ANOVA and repeated measure ANOVA test?
- What is Correlation?
- Binary logistic and multi-logistic regression analysis
- Types of research articles
- How to design questionnaire and pro forma
- What is citation? -Types of reference styles, -types of reference managementsoftware
- Introduction to Mandalay: -
  - How to create Mandalay ID,
  - How to create Mandalaylibrary
  - How to add references to the Mandalay library? –

- Mandalay plugin for MS word, -
- Mendeley importer, -What is DOI?, -What is PMID?
- How to add references to MS word file from Mandalay? -citation and bibliography.
- How to apply different citation styles in Mandalay? -More than 6000 references stylesare available to selected, -Any reference style can be applied with one click

- How to avoid duplication of references: -Importing references from other reference management applications to Mandalay, -Exporting references to other reference management applications from Mandalay
- How to get research grant/fund: -National and International funding agencies
- How to prepare Informed consent and information sheet for participants/guardians? -translation of IC into local languages
- Filling of research ethics committee form
- How to submit research project for ethical approval? -obtaining REC approval letterprior conducting research
- What is plagiarism? How to avoid plagiarism? Writing tools"
- What is HJRS?
- How to select target journal for publication using HJRS?

MUHAMMAD DENTAL COLLEGE, MIRPURKHAS
DEPARTMENT OF PROSTHODONTICS
SPECIFIC LEARNING OUTCOMES OF THE PROSTHODONTICS COURSE COMPONENTS
SECOND YEAR-BDS-YEAR-2025-2026

S #	Topics	LEARNING OUTCOMES At the end of each topic, second year student should be able to:	MODE OF TEACHING	ASSESSMENT METHOD
1	Fixed Prosthodo And Terminolo	• Define the following terms: • Fixed prosthodontics • Crown • Bridge • Partial veneer crown • Full veneer crown • Retainers • Connectors • Pontics • Abutment • Discuss the Indications and contraindications for a fixed partial denture.	IL	BCQs, OSPE, OSCE
2	History Taking, Examination, Radiology	• Demonstrate history taking and diagnosis. • Take the medical and dental history of patients presenting to the OPD.	IL, SGD	BCQs, OSPE, OSCE

3	Diagnostic Cast and its articulation	• Define articulators. • Discuss the function, types, uses, advantages, disadvantages, and purpose and requirements of an articulator • Classify articulators: • Based on the theories of occlusion • Based on the stability to stimulat jaw movements • Based on the adjustability of the articulators • Discuss protrusive and lateral records • Write down the Hanau's formula	IL, CST, LAB DEMO, SGD	
4	Concept Of A Full Metal Crown	• Describe the principles of tooth preparation • Discuss the indications, contraindications, advantages, and disadvantages of these crowns	IL, SGD, LAB DEMO	BCQs, OSPE, OSCE
5	The Concept of Porcelain Fused to a Metal Crown	• Describe the principles of tooth preparation. • Discuss the indications, contraindications, advantages, and disadvantages of these crowns • Discuss the materials available for these Restorations	IL, SGD	BCQs, OSPE, OSCE
6	Concept of All Ceramics Crown	• Describe the principles of tooth preparation • Discuss the indications, contraindications, advantages, and disadvantages of these crowns • Discuss the materials available for these restorations	IL, SGD,	BCQs, OSPE, OSCE
7	Wax Pattern Fabrication	• Understand the purpose and importance of the wax pattern, • identify different types of wax, • manipulate dental wax correctly, • recognize the common error,	IL, SGD	BCQs, OSPE, OSCE

		• demonstrate proper laboratory safety and infection control, • Evaluate the finished wax pattern		
8	Colour and Dental Shade Principles	• Understand the basic principles of colors, select an appropriate tooth shade,	IL, SGD, LAB DEMO	BCQs, OSPE, OSCE
9	Provisional Restoration	• Discuss the biological, mechanical, and esthetic considerations for • temporization.	IL, SGD	BCQs, OSPE, OSCE
8	Implant-Supported and Retained Restoration	• Discuss the following: • History • Types of implants • Clinical examination of the implant site • Radiographic examination • Surgical stent	IL, SGD	BCQs, OSPE, OSCE
9	Evaluation (Didactic Component)	ALL TEACHERS		
10	Evaluation (Psychomotor Components)	ALL TEACHERS		

COMPETENCIES ACQUIRED IN THE SCIENCE OF DENTAL MATERIAL

By the end of the learning in at Science of Dental Material, *second-year* BDS student would be able to:

1. **Knowledge and Understanding:**

- To demonstrate a comprehensive understanding of the composition, properties, manipulation, and clinical applications of various dental materials.
- To acquire the ability to select appropriate materials based on patient needs, procedural requirements, and material performance

2. Critical Thinking and decision making:

To understand the limitations, hazards, and safety protocols related to dental materials
To enable them to make evidence-based decisions and contribute effectively to restorative and prosthodontic treatment planning.

3. Technical and Practical Skills:

- To develop the skills to handle materials correctly, ensuring biocompatibility, longevity, and aesthetics.

4. Communication and Teamwork:

Use correct **terminology** to communicate material-related choices and justifications with peers and faculty.

- Collaborate in team-based lab activities to improve **group learning and cooperative skill development**.

5. **Ethical and Professional Responsibility:**

- Recognize the importance of **patient safety**, material toxicity, and **environmental considerations** in the use of dental materials.
- Understand the ethical implications of using **evidence-based materials** and techniques in patient care.

OPD TASK:

No Student will be allowed in the lab without Lab coat and Logbook.

- Demonstrate all the competencies outlined in the competency assessment sheet. (Checklists) must be signed by instructor.
- Perform all the performance tasks mentioned in the study guide up to satisfactory level of supervisor.

Certificate of completion must be signed by the In-charge and Head of department at the end of the task.

COMPETENCIES OF PRE-CLINICAL PROSTHODONTICS

.**Mastery of Prosthodontics Terminology and Concepts**

- Accurately use prosthodontic terminology related to edentulous arch impression, occlusion, retention, stability, and support of dentures.

2. **Manual Dexterity and Lab Skills in Removable Partial Denture Fabrication**
   - Perform step-by-step procedures on typodonts and simulation models for partial denture construction, including impression making, jaw relation recording, teeth arrangement, and trial denture processing.
3. **Application of Infection Control and Dental Material Handling**
   - Implement standard protocols for infection prevention and safely handle dental materials used in prosthodontic procedures such as alginate, wax, impression compound, and acrylic resin.
4. **Preparation for Clinical Prosthodontics**
   - Demonstrate readiness for clinical exposure by simulating patient procedures, understanding patient communication basics, and appreciating the role of prosthodontics in rehabilitation and oral health.

Competencies of Pre-Clinical Prosthodontics – Second Year BDS

- Understand the principles of edentulous and partially edentulous prosthodontics.
- Identify anatomical landmarks relevant to complete and partial dentures.
- Demonstrate skills in impression making, cast pouring, and baseplate fabrication.
- Fabricate complete and partial dentures on models using standard procedures.

- Handle prosthodontic instruments and materials safely and efficiently.
- Recognize occlusal relationships and articulate models accurately.
- Apply infection control protocols during lab procedures.
- Develop critical thinking for problem-solving in prosthodontic scenarios.

REQUIREMENTS FOR PRE-CLINICALS

1. **Student's Protocol**
2. Proper Dress Code With White Coat
3. Gloves
4. Mask
5. Eye Protector

6. **Instruments & Materials**

Dental Unit Preparation Items

- Metal Instrument Box
- Instrument Tray
- Typodont Teeth In Block / Phantom Head

- **Examination Instrument**
  - Mirrors
  - Probe
  - Tweezers
  - Periodontal Probe
- **Instruments**
  - Hand Piece
  - Flat-Ended Tapered Fissure Bur
  - Round-Ended Tapered Fissure Bur
  - Round Bur
  - Flame-Shaped Bur
  - Wheel Shape Bur
  - Interdental Bur
  - Finishing Bur
  - Spatula
  - Bowl
  - Articulator
  - Hard Plaster

LEARNING OBJECTIVE OF DENTAL MATERIALS					
Sr#	**Topic**	**Learning Objectives**	**Teaching Strategies**	Assessment	Hours
1	**Introduction To Dental Materials**	Students Should Learn To choose the appropriate Dental Materials For Specific Dental Applications	Lectures/ Practical /Lab Work	Written Examination/ OSPE	8 Hr Lecture
2	**Properties Of Dental Materials**	To Understand The Materials Biocompatibility, Strength And Durability, Aesthetic, Thermal Conductivity, Corrosion Resistance, Adhesion Flexibility Radiopacity, Wear Resistance, Ease Of Use	Lectures	Written Examination/OSPE	8 Hr Lecture
3	**Cements**	To Understand The Material Retention, Support, Sealing ,Insulation Strenght And Durability	Lectures/Practical /Lab Work	Written Examination/OSPE	8hours Lec+16 Hr Practical
4	**Dental Amalgam**	To Understand The Primary Goal To Replace And Restore Tooth Structure,Durability, Biocompatibility,Ease Of Placement And Esthetic Consideration	Lecture/Practical /Lab Work	Written Examination /OSPE	8 Hr Lec + 16 Hr Practical
5	**Composite Resin**	Student Should Know To Restore Tooth Function, Preserve Tooth Structure, Aesthetic Results, Bond Securely, Minimize Sensitivity.	Lecture/Practical/Lab Work	Written Examination/OSPE	8 Hr Lec+ 16 Hr Practical
6	**Impression** Materials	Aim To Create Accurate And Reliable Mould Of Oral Cavity, Ensuring The Successful Fabrication Of Prosthetic And Restoration While Prioritizing Patient Comfort And Safety	Lecture /Practical /Lab Work	Written Examination/OSPE	8 Hr Lec + 16 Hr Pratical
7	**Gypsum**	Students Should Know To Make Casts And Model, Diagnostic And Treatment Planning, Prosthodontic Fabrication	Lecture/Practical /Lab Work	Written Examination/OSPE	8 Hr Lec + 16 Hr Practical
8	**Dental Waxes**	Aim Is To Understand Diagnostic Waxups,Imprseion Modlling,Articulation	Lecture/Practical /Lab Work	Written Examination/OSPE	8 Hr Lec+16 Hr Practical

		Pattern Waxing, Investment Casting, Temporization			
9	**Dental Investment and Casting**	Mould Formation, Refractory Properties ,Dimensional Accuracy Surface Finnish, Strength And Stability, Material Replication, Material Integrity, Material Bonding, Biocompatibility	Lecture/Practical/Lab Work	Written Examination/OSPE	8 Hr Lec + 16 Hr Practical
10	**Denture Base Polymer**	Aim Is To Provide Stability And Support To Denture, Natural Looking Aesthetic, Biocompatibilty, and Durability	Lecture/Practical /Lab Work	Written/Examination/OSPE	8 Hr Lec+ 16 Hr Practical
11	**Abrasion And Polishing Materials**	Students Should Know To Remove Surface Irregularities Enhance Esthetics,Prevent Palque Accumulation, Improve Biocompatibility, Optimise Occlusal Function And Increase Patient Comfort	Lecture /Practical /Lab Work	Written/Examination/OSPE	8 Hr
12	**Tissue Conditioner**	To Know Soft Tissue Support, Tissue Handling, Improve Denture Fit Enhance Patient Comfort, Temporary Solutions	Lecture	Written/Examination/OSPE	8 Hr
13	**Metal And Alloys**	Aim Is To Understand Strength And Durability, Conductivity, Corrosion Resistance, Temperature Resistance And Appearance.	Lecture/Practical /Lab Work	Written/Examination/OSPE	8 Hrs
14	**Cermets**	Students Should Know Hardness And Wear Resistance, High Temperatures Resistance, Chemical Inertness, Biocompatibility And Thermal Conductivity	Lectures /Pratical/Lab Work	Written/Examination/OSPE	8 Hrs
15	**Direct Filling Gold**	Objectives Of Gold Are Durability And Longevity, Biocompatibility, Minimal Tooth Preparation, Corrosion Malleability And Adaptability And Patient Comfort	Lecture/Practical/Lab Work	Written/Examination/OSPE	8 Hrs
16	**Adhesion**	To Create A Strong Bond Between Dental	Lectures	Written/Examination/OSPE	8 Hrs Lecture

		Restorative Material (Amalgam And Composite) And Natural Tooth Structures, Minimize Micro leakage, Prevent Infiltration, maintain tooth Integrity			
17	**Dental Ceramic**	Objective Is To Provide Durability And Aesthetically Pleasing Restoration For Tooth, Natural Appearance, Biocompatibility, Aim To Offer Long Lasting Solutions For Crown, Veneers And Other Restorative Applications	Lectures	Written/Examination/OSPE	8 Hr Lecture
18	**Endodontic Materials**	Discuss The Introduction Of Endodontic Instruments And Materials, To Know About The Composition, Manipulation An Uses Of Endodontic Materials (Irrigants,Intracanal Medication Gp And Paper Points, Sealer)To Know About Root Canal Treatment, To Know About Pulp Capping	Lectures/ Practical/Lab Work	Written /Examination/OSPE	8 Hr Lecture
19	**Dental Implant**	Discuss The Introduction Of Dental Implant, To Know About Titanium, To Learn About Dental Implant, Types, Components ,Advantages, Disadvantages	Lectures	Written/Examination/Ospe	8 Hr Lecture

TABLE OF SPECIFICATION OF SCIENCE OF DENTAL MATERIAL 2ND YEAR BDS				
PAPER-I: Disease Infection Therapeutics (DIT) - I & II				
MODULES: DENT-0201: DIT-I & DENT-0202: DIT-II		**THEORY**	**OSPE Stations**	
		SBQs	**Static**	**Int. Viva**
A)	General Pathology	36	3	2
B)	General Pharmacology	28	2	2
C)	Oral Pathology	36	3	2
Total		**100**	**8**	**6**
A) GENERAL PATHOLOGY				
	A) GENERAL PATHOLOGY			
	Module-I: Disease, Infections and Therapeutics (DIT) - I			
1	**Theme-1: Cell Pathology**			
	Sub-Theme: Cellular/Adaptive response of cell to stress/injury			
	Mechanism of cell injury			
	Cellular adaptation			
	Necrosis			
	Apoptosis			
	Calcification/Pigmentation			
2	**Theme-2: Inflammation**			
	Sub-Theme: Acute & Chronic inflammation			
	Vascular & cellular events			
	Chemical mediators			
	Granuloma formation			
	Repair/wound healing			
3	**Theme-3: Immunity**			
	Sub-Theme: Innate, adaptive, & cell mediated immunity			
	Immunoglobulin			
	Hypersensitivity reactions			
	Autoimmunity			
	Immunodeficiency disorder			
	Module-I: Disease, Infections and Therapeutics (DIT) - II			
4	**Theme-4: General bacteriology**			
	Sub-Theme: Bacterial cell			
	Structure of bacteria			
	Bacterial growth curve			
	Classification of bacteria			
	Normal flora			
	Bacterial genetics			
	Bacterial pathogenesis			
	Host defense			
	Sterilization			

5	**Theme-5: Special Bacteriology**
	Sub-Theme: Morphology, pathogenesis & Lab diagnosis of bacteria
	Gram positive cocci
	Gram negative cocci
	Gram-positive bacilli
	Gram-negative bacilli
	Mycobacterium
	Theme-6: General Mycology
	Sub-Theme: Basic Mycology
	Structure of Fungus
	Lab diagnosis of fungus
	B) GENERAL PHARMACOLOGY
	Module-I: Disease, Infections and Therapeutics (DIT) - I & II
1	**General Pharmacology**
	Pharmacokinetic
	Pharmacodynamics
2	**Antibiotics**
	Cell Wall Synthesis Inhibitors
	Protein Synthesis Inhibitors
	Folate Antagonist
	Foroquinolones
	Anti-Tuberculous Drugs
	Antifungal
3	**NSAID's**
	Corticosteroids
	C) ORAL PATHOLOGY
	Module-I: Disease, Infections and Therapeutics (DIT) - I
1	**Theme-1: Cell Pathology**
	Sub-Theme: White Patches
	Leukoplakia
	Lichen Planus
	Lupus Erythromatosus
	Leukoedema
	Squamous Cell Papilloma
2	**Theme-2: Inflammation**
	Sub-Theme: Pulpitis

	Ludwigs Angina
	Spread of Infection
	Osteomyelitis
	Periodontitis
3	**Theme-3: Immunity**
	Sub-Theme: Burning Sensation / Immunological Disorders
	RAS
	Pemphigus
	Erythema Multiforme
1	**Module-I: Disease, Infections and Therapeutics (DIT) - II**
2	**Theme-4: General Microbiology**
3	**Sub-Theme: Bacterial infection**
4	TB
5	Syphilis
6	**Sub-Theme: Viral infections**
	Herpes Simplex
	Herpes Zoster
	Epstein Bar Virus
1	**Sub-Theme: Fungal Infection**
	Candidiasis
	Sub-Theme: Caries
1	**Theme-5: Special Microbiology**
2	**Odontogenic & Non Odontogenic Cyst**
3	Radicular cyst
4	OKC
5	Dentigerous Cyst
6	Lateral Periodontal Cyst
7	Aneurysmal Bone Cyst
8	Solitary Bone Cyst
	Nasolabial Cyst
	Non-Bacterial Tooth Loss
1	Erosion, Abfraction, Attrition, Abrasion

TABLE OF SPECIFICATION OF SCIENCE OF DENTAL MATERIAL 2ND YEAR BDS				
PAPER-II: OROFACIAL COMPLEX-II AND NEOPLASIA				
MODULES: DENT-0203: Orofacial Complex-II & DENT-0204: Neoplasia		THEORY	OSPE Stations	
		SBQs	Static	Int. Viva
A)	General Pathology	32	2	2
B)	General Pharmacology	34	3	2
C)	Oral Pathology	34	3	2
Total		**100**	**8**	**6**
A) GENERAL PATHOLOGY				
	Module-II: Neoplasia, Hemodynamics & Genetics			
	Theme-1: Neoplasia			
	Sub-Theme: Pathogenesis of tumors			
1	Nomenclature of tumor			
2	Molecular basis of tumor			
3	Carcinogenic agents			
4	Benign & malignant epithelial tumors			
5	Benign & malignant connective tumors			
	Theme-2: Haemodynamics			
	Sub-Theme: Edema			
1	Thrombosis			
2	Embolism			
3	Shock			
4	Hyperemia, congestion, and infarction			
	Theme-3: Genetics			
	Sub-Theme: Classification & etiology of genetic disorders			
1	Mutation			
2	Mendelian disorder			
3	Chromosomal abnormalities			
4	Lab diagnosis of Genetic disorders			
	Module-III: Orofacial Complex			
	Theme-1: General Virology			
	Sub-Theme: Structure and classification of viruses			
1	Viral pathogenesis			
2	Host defense & viral vaccine			
3	Lab diagnosis of viral diseases			
	Theme-2: Special Virology			
1	Hepatitis virus			
2	HIV			
3	Polio & Dengue virus			
	Theme-3: Parasitology			
1	Nematodes			

2	Cestodes
	Theme-4: Systemic Pathology
	B) GENERAL PHARMACOLOGY
	Anti-Cancer Drugs
	ANS
1	Cholinergic Agonist
2	Cholinergic Antagonist
3	Adrenergic Agonist
4	Adrenergic Antagonist
	CNS
1	Sedative and Hypnotics
2	Anti-Epileptic Drugs
3	Local Anesthetics
4	General Anesthetics
5	Drug Treatment of Parkinsonism
6	OPOIDS
	Blood
1	Coagulants & Anticoagulants
2	Drugs used in Anemia
	GIT
	Drugs used in Peptic Ulcer
	Anti-Emetics
	Respiratory System
	Drugs used in Asthma
	CVS
	Drugs used in Hypertension
	Antianginal
	Cardiac Glycosides
	Endocrinology
	Drugs used in Diabetes Mellitus
	Drugs used in Thyroid Diseases
C) ORAL PATHOLOGY	
	Module-II: Neoplasia, Haemodynamics & Genetics
	Theme-1: Neoplasia
	Sub-Theme: Swelling / Odontogenic Tumors
1	Ameloblastoma

2	Squamous Odonntogenic Tumor
3	Calcifying Epithelial Odontogenic Tumor
4	Adenomatoid Odontogenic tumors
5	Myxoma
6	Oral Submucous Fibrosis
	Theme-2: Hemodynamics
	Sub-Theme: Benign soft tissue tumors
1	Lipoma
	Theme-3: Genetics
	Sub-Theme: Discolored Tooth / Developmental Anomalies of Teeth
1	Amelogenesis Imperfecta
2	Dentinogenesis Imperfecta
3	Dentine Dysplasia
4	Hypercementosis
5	Syndromes (HED)
6	Identification of Dental anomalies
	Module-III: Orofacial Complex-II
	Theme-1&2: General and Special Virology
	Sub-Theme: HIV
1	Oral manifestation of different diseases
	Theme-3: Parasitology / Craniofacial complex
	Sub-Theme: Salivary gland disorders
1	Mucocoele
2	Pleomorphic Adenoma
3	Warthin's Tumor
4	Mumps
5	Ranula
6	Salivary Carcinoma
7	Necrotizing Sialometaplasia
8	Sjogren Syndrome
	Theme-4: Systemic Pathology
	Sub-Theme: Bone disorders
1	Cleidocranial dysplasia
2	Fibrous dysplasia
3	Cherubism
4	Hyperparathyroidism

5	Central giant cell granuloma
6	Osteogenesis imperfecta
7	Paget's disease

TABLE OF SPECIFICATION OF SCIENCE OF DENTAL MATERIAL 2ND YEAR BDS				
PAPER -III-Dental Materials & Pre-Clinical Dental Sciences-II				
MODULES		THEORY	OSPE Stations	
		SBQs	Static	Interactive
A)	DENT0205: Bio-Materials & Pre-Clinical Operative Dentistry-II	35	4	2
B)	DENT0206: Bio-Materials & Pre-Clinical Fixed Prosthodontics-II	35	4	1
C)	DENT0207: Introduction to Clinical Care & Professionalism-II	16	2	1
D)	DENT0208: Research Methodology-II	8	Nil	Nil
E)	DENT0209: Information Technology-II	6	Nil	Nil
Total		100	10	4

A) DENT0205: Biomaterials & Pre-Clinical Operative Dentistry-II	
1	Instruments used in composite restoration
2	Adhesive Dentistry
3	Principles of Adhesion to Enamel and Dentin
4	Acid Etch Technique
5	Dentin bonding agents
6	Dental composite (composition and classification)
7	Dental composite (properties and applications)
8	Rubber dam isolation
9	Class-I Tooth preparation and restoration
10	Dental Composite Handling
11	Matrix Band Applications (Sectional Matrix Band)
12	Class-II cavity preparation & Restoration
13	Class-III cavity preparation & Restoration
14	Class-IV cavity preparation & restoration
15	Class-V cavity preparation & restoration
16	Pits and fissure sealants
17	Cavity designs in deciduous teeth
18	Materials used in pulpotomy for primary teeth
19	Pulpectomy in deciduous teeth and restoration
20	Early childhood caries and its management
21	Sealers and root canal filling materials
22	Root Morphology of all teeth
	B) DENT0206: Biomaterials & Pre-Clinical Fixed Prosthodontics-II
1	History taking, Examination and Radiographs
2	Diagnostic Cast and Articulation
3	Principles of Crown Preparations
4	Metal and Alloys
5	Ceramic System
6	Elastomers and Impression Techniques
7	Working Casts and Dies

8	Wax Pattern Fabrication
9	Investment Materials and Techniques
10	Casting Technique
11	Casting Procedure
12	Color and Dental Shade Principles
13	Dental Cements
14	Provisional Restorations
15	Resin Bonded Restorations
16	Implant Materials
17	Post and Core Materials
C) DENT0207: Introduction to Clinical Care and Professionalism-II	
1	Introduction to Public Health
2	Teeth Numbering System (Notation)
3	History Taking
4	Examination of intraoral and extraoral examination
5	Instruction about oral hygiene measures (Tooth Brushing Techniques)
6	Research Design in Oral Epidemiology
7	Biostatistics I
8	Biostatistics II
9	Bio-Psychosocial Model of Health Care
10	Correlation of body mind brain and spirit, motivation
11	Attention and concentration, memory, thinking
12	Communication skills and Counseling
13	Learning and learning theories
14	Personality development and personality disorders
15	Ethic, History taken, doctor patient relationship
16	Emotions, Intelligence and EQ vs IQ
17	Dental OPD management I,II &III: Specific Department
18	Ethical Decision Making Model-I and Anatomy of Medical/Dental Malpractice
19	Ethics and Dental Research
20	Ethical Issues in Dental Practice–I (Harassment)
21	Ethical Issues in Dental Practice–II (Patient or Dentist with Infectious diseases)
22	Ethical Issues in Dental Practice–III (Conflict of interest and relationship with Pharmaceutical
D) DENT0208: Research Methodology-II	
	Introduction to research protocol
	Designing research project

	-Basic guidelines
	-Computer programs
	-MS word
3	How to write material and methods of the project
	Study designs
	Study Setting
	Types of sampling techniques
4	Types of Research designs
	Observational and Experimental studies
5	How to analyze categorical variables
	Tabular presentation
	Graphical presentation
6	How to analyze numerical variables
	Tabular presentation
	Graphical presentation
7	Measures of central tendency
	Mean, Median and Mode
8	What is plagiarism?
	How to avoid plagiarism?
	Writing tools
	Observational and Experimental studies
	How to analyze categorical variables
	Tabular presentation
	Graphical presentation
	How to analyze numerical variables
	Tabular presentation
	Period
	Types of sampling techniques
	Graphical presentation
E) DENT0209: Dental Informatics-II	
1	Digital Data Management
2	Searching and Information Retrieval
3	Productivity with Google Workspace
4	Documents Mastery using Advanced MS Word Features
5	LinkedIn Job Search Mastery

TABLE OF SPECIFICATION OF PRE-CLINICAL DENTAL SCIENCES				
S. No	**Name of Chapter**	**Total BCQs**	**Total SEQs**	**OSPE Stations 14 static 3 interactive**
1	Information Technology Computers and their parts (hardware ware software) MS Words	**2**	**00**	**00**
2	Research methodology / Hypo thesis Presentation of data Study design Sampling technique	**3**		**00**
	Variables / literature review		**1**	
3	Professionalism in dental practice, Biomedical ethics (autonomy, confidentiality, general consent, informed consent) Cross infection prevention and instruments sterilization Practice management Communication skills Biomedical ethics Stress and time management Radiographs used in dentistry	**5**	**1**	**1 static 1 interactive**
4	Tooth morphology Surfaces of all the teeth Differences between primary and permanent teeth Differences between maxillary and mandibular teeth	**12**	**02**	**03 static**
	Identification of teeth (primary or permanent teeth, maxillary or mandibular teeth, left or right)			**01 Interactive**
4	Pre-clinical operative dentistry: chair positioning, Isolation, fundamentals of cavity preparation. Lining and restoration	**04**	**1**	**01**
3	Dental Amalgam	**3**	**1**	**01 static**
4	Direct gold filling	**1**	**0**	
5	Requirements of Restorative materials and Properties OF Biomaterials 1. Mechanical/ thermal properties 2. Biological properties/Chemical properties	**2**	**0**	
6	Cements/ Liner and bases / pulp capping 1. Glass ionomer cements/ 2. Zinc Phosphate cements/ 3. Calcium hydroxide /MTA cements	**04**	**02**	**3 static**

	4. Zinc oxide Eugenol cement			
8	Impression materials 1. Impression compound 2. Alginate 3. Agar agar 4. Zinc oxide eugenol paste	**4**	**1**	**2**
9	Preclinical prosthodontics Surveying / construction of custom tray, Articulation/ set up of artificial teeth,	**2**	**1**	**1-interactive**
10	Gypsum products/model and die materials Calcination Difference between dental plaster and dental stone Type 2 Type 3 Type 4 Type 5	**2**	**1**	**1**
	Dental Waxes Sources, Manipulation, Types and their uses	**2**	**0**	**1**
	Resin based Denture base materials	**2**	**1**	**1**
	Separating media	**1**		
	finishing and polishing materials	**1**		
Total	**50**	**12**	**14 static 3 interactive**	

TABLE OF SPECIFICATION OF ORAL PATHOLOGY

S. No.	Topics	BCQ's	SEQ's
1	Principal and investigation of diagnosis	1	0
2	Disorders of the development of teeth and related tissue	5	1
3	Dental caries	4	0
4	Pulpitis, periapical periodontitis, and hypercementosis	4	1
5	Gingivitis and periodontitis	2	0
6	Major infections of mouth, jaws and perioral tissue	7	1
7	Cyst of jaw	5	1
8	Odontogenic tumors and like lesion of the jaw	4	0
9	Non-odontogenic tumors of jaw	4	0
10	Genetic, metabolic and other neoplastic bone disease	4	0
11	Disorders of TMJ	2	0
12	Infectious diseases of oral mucosa	4	1
13	Non-infectious diseases of oral mucosa	4	0
14	Tongue disorders	2	0
15	Benign chronic white lesions	5	0
16	Oral pre-malignancy	5	0
17	Oral Cancer	4	0
18	Diseases of salivary glands	4	0
19	Benign mucosal swellings	2	0
20	Soft tissue neoplasm	2	0
21	Endocrine disorders	1	0
Total		**75**	**5**

BIOMATERIAL AND PRE-CLINICAL (PROSTHODONTICS-II)

Duration-2 Months, Total Contact Hours=32 & Total # of Sessions=24			
Weeks/Days/Timings		**Topics**	**Facilitator**
Week 1	Tuesday (1:00 Pm-2:00 Pm)	Objectives of fixed prosthodontics and related terminologies	Dr Atif
	Wednesday (11:30 am-1:00 Pm)	History taking examination, Radiographs.	Dr Uzma
	Thursday (11:30 am-1:00 Pm)	Diagnostic casts and their articulation.	Dr Rehan
Week 2	Tuesday (11:00 am-2:00 Pm)	Metal and alloys.	Dr Atif
	Wednesday (11:30 am-1:00 Pm)	Concept of a full metal crown.	Dr Uzma
	Thursday (11:30 am-1:00 Pm)	Base metal alloys	Dr Rehan
Week 3	Tuesday (11:00 am-2:00 Pm)	Gold alloys	Dr Atif
	Wednesday (11:30 am-1:00 Pm)	Ceramic system	Dr Uzma
	Thursday (11:30 am-1:00 Pm)	Concept of porcelain fused to a metal crown.	Dr Rehan/dr Amber
Week 4	Tuesday (11:00 am-2:00 Pm)	Concept of all ceramic crown	Dr Atif
	Wednesday (11:30 am-1:00 Pm)	Impression materials and relevant techniques.	Dr Uzma
	Thursday (11:30 am-1:00 Pm)	Working casts and dies basic pindex technique	Dr Rehan/dr Amber
Week 5	Tuesday (11:00 am-2:00 Pm)	wax pattern fabrication	Dr Atif
	Wednesday (11:30 am-1:00 Pm)	investment material and investing technique	Dr Uzma
	Thursday (11:30 am-1:00 Pm)	casting technique and porcelain firing	Dr Rehan/dr Amber
Week 6	Tuesday (11:00 am-2:00 Pm)	Colour and dental shade principles	Dr Atif
	Wednesday (11:30 am-1:00 Pm)	Dental cements	Dr Uzma
	Thursday (11:30 am-1:00 Pm)	Provisional restoration	Dr Rehan/dr Amber
Week 7	Tuesday (11:00 am-2:00 Pm)	Resin boned restoration	Dr Atif
	Wednesday (11:30 am-1:00 Pm)	Implant supported and retained prosthesis	Dr Uzma
	Thursday (11:30 am-1:00 Pm)	Dentifrices	Dr Rehan/dr Amber
Week 8	Tuesday (11:00 am-2:00 Pm)	CBL based learning	Dr Atif
	Wednesday (11:30 am-1:00 Pm)	Evaluation (Didactic component)	Dr Uzma
	Thursday (11:30 am-1:00 Pm)	Evaluation (Psychomotor component)	Dr Rehan/dr Amber

PRE CLINICAL DENTAL MATERIALS DEMONSTRATION SCHEDULE		
WEEK 1- ORIENTATION		
Day	**Task**	**Name of Facilitator**
1	Orientation regarding Skill lab, OPD tasks, student armamentarium, terminologies	Dr. Norain
2	Orientation regarding Skill lab, OPD tasks, student armamentarium, terminologies	Dr. Atif Jawad
3	Impression Material & Impression Techniques	Dr. Seher
4	Working Casts & Dies	Dr. Hafiz
5	Impression Material & Impression Techniques	Dr. Seher
WEEK 2 - HISTORY, EXAMINATION		
Day	**Task**	**Facilitator**
1	Wax Pattern Fabrication	Dr. Norain
2	History Taking, Examination and Radiographs	Dr. Paras Talpur
3	Metal Alloys	Dr. Seher
4	Gold Alloys	Dr. Hafiz
5	Ceramic System	Dr. Seher
WEEK 3 - CROWNS		
Day	**Task**	**Facilitator**
1	Investment Material & Investing Techniques	Dr. Norain
2	Diagnostic Casts and Their Articulation	Dr. Atif
3	Concept of All Metal Crowns	Dr. Seher
4	Concept of Porcelain Fused to Metal Crown	Dr. Hafiz
5	Concept of all Ceramic Crown	Dr. Seher
WEEK 4 - TOOTH PREPARATION		
Day	**Task**	**Facilitator**

1	Dental Cements	Dr. Norain
2	Principles of Tooth Preparation	Dr. Atif Jawad
3	Casting Techniques and Porcelain Fixing	Dr. Seher
4	Color and Dental Shade Principles	Dr. Hafiz
5	Casting Techniques and Porcelain Fixing	Dr. Seher
WEEK 5 - FIXED PROSTHESIS		
Day	**Task**	**Facilitator**
1	Dental Cements	Dr. Norain
2	Practice on Typhodont	Prosthodontics faculty
3	Provisional Restorations	Dr. Seher
4	Resin Bonded Restorations	Dr. Hafiz
5	Provisional Restorations	Dr. Seher
WEEK 6 - FIXED PROSTHESIS		
Day	**Task**	**Facilitator**
1	Post and Core Materials	Dr. Norain
2	Practice on Typhodont	Prosthodontics faculty
3	Revision	Dr. Seher
4	Dentifrices	Dr. Hafiz
5	Practice day	Dr. Seher
WEEK 7 - TMJ, FPD, IMPLANT, MAXILLOFACIAL PROSTHESIS		
Day	**Task**	**Facilitator**
1	Post And Core Materials	Dr. Norain
2	Implant Supported And Retained Prosthesis	Dr. Shagufta
3	Resin Bonded Restorations	Dr. Seher
4	Provisional Restorations	Dr. Hafiz
5	Resin Bonded Restorations	Dr. Seher

WEEK 8: ASSESSMENT AND PRESENTATION		
Day	**Task**	**Facilitator**
1	DENTRIFRICES	Dr. Norain
2	Completion of work and signing of logbooks	All faculty
3	Completion of work and signing of logbooks	All faculty
4	Evaluation (Didatic component)	All faculty
5	Evaluation (psychomotor component)	All faculty

PRE-CLINICAL DEMONSTRATION SCHEDULE OPERATIVE DENTISTRY

WEEK 1: ORIENTATION, INSTRUMENTS USED IN COMPOSITE, CHAIRPOSITIONING, ADHESIVE DENTISTRY AND ISOLATION		
Day	**Task**	**Name of Facilitator**
1	Orientation regarding OPD tasks and student armamentarium Instruments used in composite restoration	Dr.Saima
2	Demonstration on operator chair positions	Dr.Asma
3	Adhesive dentistry	Dr.Asma
4	Demonstration on Rubber dam isolation	Dr.Saima
5	Practice Day	Dr.Saima
WEEK 2: PRINCIPLES OF ADHESION TO ENAMEL AND DENTINE, ACID ETCH TECHNIQUE AND DENTINE BONDING AGENTS		
Day	**Task**	**Facilitator**
1	Principles of adhesion to enamel and dentine	Dr. Asma
2	Acid etch technique	Dr.Saima
3	Practice day	Dr.Saima
4	Dentine bonding agents	Dr.Saima
5	Practice day	Dr.Priyanka
WEEK 3: DENTAL COMPOSITE,CLASS 1 COMPOSITE POSTERIOR TOOTH PREPARATION AND RESTORATION		
Day	**Task**	**Facilitator**
1	Dental composite (composition and classification)	Dr. Priya
2	Dental composite(properties and application)	Dr.Asma
3	Demonstration on Class 1 posterior tooth preparation and restoration (etching,bonding agent,placement of composite,finshing and polishing)	Dr.Saima
4	Practice day	Dr.Priyanka
5	PBL1:Posterior restoration	Dr.Saima
WEEK 4: DENTAL COMPOSITE,MATRIX BAND,CLASS 2 AND 3 CAVITY PREPARATION AND RESTORATION		

Day	Task	Facilitator
1	Dental composite handling	Dr. Asma
2	Demonstration on matrix band application (sectional matrix band) and Class 2 cavity preparation and restoration (placement of composite, finishing and polishing)	Dr. Saima
3	Practice day	Dr. Asma
4	Demonstration on Class 3 cavity preparation and restoration (shade selection, matrix systems, wedges, placement of composite, finishing and polishing)	Dr. Saima
5	Practice day	Dr. Saima
WEEK 5: CLASS 4 AND 5 COMPOSITE PREPARATION AND RESTORATIONS, PIT AND FISSURE SEALANTS		
Day	**Task**	**Facilitator**
1	Class 4 cavity preparation and restoration (shade selection, matrix systems, wedges, Placement of composite, finishing and polishing) Practice	Dr. Saima
2	Practice day	Dr.Asma
3	Class 5 cavity preparation and restoration(cervical restorations)	Dr. Saima
4	Practice day	Dr. Asma
5	Pit and fissure sealants (material selection and handling) PBL 2: Anterior Restorations	Dr.Saima
WEEK 6: DECIDUOUS TEETH CAVITY DESIGNS, PULPOTOMY AND PULPECTOMY IN PRIMARY TEETH		
Day	**Task**	**Facilitator**
1	Early childhood caries and its management	Dr. Nirma
2	Model preparation	Dr. Nirma
3	Access cavity, working length determination and root canal preparation	Dr. Nirma
4	Practice day	Dr. Nirma
5	Practice day	Dr. Nirma
WEEK 7: EARLY CHILDHOOD CARIES, ROOT CANAL IN PRIMARY TEETH		
Day	**Task**	**Facilitator**
1	Sealers and root canal filling materials	Dr. Nirma
2	Restoration of endodontically treated teeth	Dr. Nirma

3	PBL 3: Pulpotomy and endodontic materials	Dr. Nirma
4	Evaluation (Didactic component)	All Teachers
5	Evaluation(Psychomotor component)	All Teachers
WEEK 8: SEALERS, ROOT CANAL FILLING MATERIALS, RESTORATION OF ENDO TREATED TEETH AND PULPOTOMY IN PRIMARY TEETH, EVALUATION		
Day	**Task**	**Facilitator**
1	Sealers and root canal filling materials	Dr. Nirma
2	Restoration of endodontically treated teeth	Dr. Nirma
3	PBL 3:Pulpotomy and endodontic materials	Dr. Nirma
4	Evaluation (Didactic component)	All teachers
5	Evaluation (Psychomotor component)	All teachers

GENERAL SUBJECTS						
Topic	**Contents**	**Learning Objectives**	**Teaching Method**	**Module**	**Hours**	**Assessment**
PROFESSIONALISM AND BEHAVIOURAL SCIENCES						
Stigma and Reactions to illness	Stigma and Reactions to illness, Strategies for not being judgmental	Describe Stigma and reactions to illness, and how not to be judgmental	Lecture	Research	1	MCQ
MODELS OF LEADERSHIP AND MANAGEMENT						
Models of Leadership and management	Models of leadership & management	Compare different models of Leadership and management	Lecture /group discussion	Research	1	MCQs
COMMUNICATION SKILLS						
Verbal and non- verbal communication skills	Verbal and non-verbal communication skills	Develop and Demonstrate effective verbal and non-verbal communication skills	Role play, Group Discussion	Clinical Rotation	1	MCQ
Listening skills	Listening skills	Develop and demonstrate active listening skills for learning purposes and to the patient's problems	Role play, Group Discussion	Clinical Rotation	1	MCQ
Reading skills	Reading skills	Develop and Demonstrate effective reading skills	Role play, Group Discussion	Clinical Rotation	1	MCQ
RESEARCH						
Sample size	Sample Size Calculation	Calculate sample size for different research projects. Calculate sample size for a specific research project.	Lecture and Hands on Exercise in Computer lab	Clinical Rotation	2	MCQs/Assignment
Sampling techniques and sample selection	Probability and non-probability Sampling techniques Sample Selection	Describe various sampling techniques. Justify sampling techniques chosen	Lecture/ Group Discussion	Clinical Rotation	2	MCQs/Assignment

	Inclusion Criteria Exclusion Criteria	for a specific research project. Select sample for a specific research project				
Designing of a Questionnaire	Steps for making a questionnaire	Design a questionnaire Identify a validated questionnaire	Lecture/ Group Discussion	Clinical Rotation	2	MCQ and Assignment
Plagiarism	Definition, Types, Strategies to avoid it	Describe plagiarism and how to avoid it	Lecture/ Group Discussion	Clinical Rotation	2	MCQ

LEARNING RESOURCES SECOND YEAR BDS

Recommended Books Second YEAR BDS			
Pathology	**Pharmacology**	**Science of Dental Material**	**Operative Dentistry**
1. Peter D. Turnpenny, Emery's Elements of Medical Genetics (14th ed.). New York: Churchill Livingstone. 2011. 2. Cotran RS, Kumar V and Collins T. Robbin's Pathologic Basis of Disease (8th ed.). Philadelphia: W.B. Saunders. 2010. 3. Walter JB and Talbot IC. Walter and Israel's General Pathology (7th ed.). New York: Churchill Livingstone. 1996. 4. Kumar V, Cotran RS, and Robbins SL. Basic Pathology (8th ed.). Philadelphia: W.B. Saunders. 2007.	1. Lazo JS & Parker. Goodman and Gillman's The Pharmacological basis of therapeutics 12th edition McGrawHillCompany,USA 2006. 2. Katzung BG, Masters SB & Trevor AJ. Basic and Clinical Pharmacology-Katzung 14th edition TATA McGrawHill Education Private Ltd, New Delhi 2009. 3. Finkel R Cubeddu L X, Clark MA, Harvey R &Champe P. Lippincott's Illustrated Reviews Pharmacology. 7th edition, Wolters Kluwer-Lippincott Williams & Wilkins New Delhi 2009.	1. Applied Dental Materials, John F McCabe (Latest Edition) 2. Philips Science of Dental Materials, Kenneth J. Anusavice (Latest Edition) 3. Sturdevant Art and Science of Operative Dentistry, Harald O Heyman, Edward J Swift.(Latest Edition) 4. Craig's Restorative Dental Materials, John M Powers Ronald L Sakaguchi. (Latest Edition 5. Contemporary Fixed partial Denture, Rosential-6th Edition	1. Joseph R Evans John H Wilke. Atlas of Operative Dentistry: Preclinical and clinical procedures. Quintessence books Publishing Co. 2. Richard L Kahn, Pinkerton RJ, Kagihara LE. Fundamentals of Preclinical Operative Dentistry. 3. The Art & Science of Operative Dentistry by Sturdurant. 2. Pickardards Manual of Operative Dentistry by EAM Kidd. 3. Fundamentals of Operative Dentistry by Schwartz 4. Dental Restorative Materials – Craig 5. Textbook of Operative Dentistry by Vimal K Sikri

5. Rubin E, Pathology (4th ed.) Philadelphia: Lippincott-Raven. 2005 6. Ivan Roitt. Riott's Essential Immunology (11th ed.). New Delhi:I.K. International Pvt. Ltd. 2007. 7. Harsh Mohan. Textbook of pathology. 6th ed. Jaypee broth. 2010. **ATLAS** 1. Wheater P et al. Basic Histopathology: A Color Atlas and Text (2nd ed.). Edinburgh: Churchill Livingstone. 1990. 2. Harsh Mohan. Pathology practical book. 2nd ed. Jaypee broth. 2007.			
Microbiology		**WEBSITES**	

1. Jawetz .medical microbiology.25th ed.2010 Lange/McGrawHill 2. Levinson W. Microbiology and Immunology: Review. 10th ed. 2009 Lange/TataMcGrawHill 3. Michael j pelczar .Microbiology.6th ed. TataMcGraw 4. Richard a harvey. Microbiology.lippincottsillustrated review 2nd edition.	**Department of Pharmacology** www.studentcorner.com www.drugs.com www.pharmacology.com www.medicalstudent.com **Department of Pathology** The internet pathology laboratory for medical education *library.**med**.utah.edu/WebPath/webpath.html* **Microbiology** www.asm.org
ORAL PATHOLOGY	
1. Cawson's Essentials of Oral Pathology & Oral Medicine-10th Edition 2. Soames & Southam's Oral Pathology-5th Edition 3. Oral Pathology Ragezi-6th Edition 4. Shafer's Textbook of Oral Pathology, Neville, 2nd Edition 5. Atlas of Oral Histology-Elsevier -2nd Edition 6. Practical Manual of Oral Pathology- Latest Edition -Alka Mukund Dive	

MUHAMMAD DENTAL COLLEGE
DEPARTMENT OF DENTAL EDUCATION
ACADEMIC CALENDAR AND SEQUENCE OF CONTENT
OF MODULAR CURRICULUM
SECOND YEAR BDS-2026-BATCH-VI

<table>
<tr><td>MODULES</td><td>Module-I
Disease Infection & Therapeutic-I & II, ICT & PERLs</td><td rowspan="3">Eid ul Fitr Holidays 16-03-26 till -22-03-2026</td><td>Module-II
Neoplasia Hemodynamics and Genetics,
ICT & PERLs</td><td rowspan="3">Eid ul Azha & Summer Holidays 24-05-2026 till 21-06-2026</td><td>Module-III
Orofacial Complex-II, ICT & PERLs</td><td>PRE PROF</td><td>Total Weeks</td></tr>
<tr><td>Dates</td><td>17 Weeks</td><td>10- Weeks</td><td>09-Weeks</td><td>4 Weeks</td><td rowspan="3">40 Weeks</td></tr>
<tr><td>Duration</td><td>12th January-15TH-MAY 2026</td><td>18thMay-2026-21st-August-2026</td><td>24-August-2026-23RD-Oct-2026</td><td>26TH-Oct-2026-22ND-November-2026</td></tr>
<tr><td>END OF MODULE EXAM</td><td>15th May 2026</td><td>21st-August-2026</td><td colspan="2">19TH-Oct-2026-23RD-Oct-2026</td></tr>
<tr><td colspan="6">PRE –CLINICAL ROTATIONS</td><td colspan="2">Final Prof LUMHS Exams</td></tr>
<tr><td colspan="2">PRE-CLINICAL</td><td colspan="5">GROUPS NAMES
DURATION WITH DATES OF POSTINGS-36 WEEKS</td><td rowspan="4">23RD-November-2026-till 27th-Decemeber-2026</td></tr>
<tr><td rowspan="2">Junior Operative II+ Pedodontics II
12th January-10TH-April 2026</td><td>12 Weeks</td><td rowspan="3">Eid ul Fitr Holidays 16-03-26 till -22-03-2026</td><td>12 Weeks</td><td rowspan="3">Eid ul Azha & Summer Holidays 24-05-2026 till 21-06-2026</td><td>12 Weeks</td></tr>
<tr><td>A</td><td>B</td><td>C</td></tr>
<tr><td>Junior Prosthodontics II + Dental Material II
13TH- April-2026 to 31ST -July-2026</td><td>B</td><td>C</td><td>A</td></tr>
<tr><td>Clinical Care & Behavioral Sciences II
03RD-August-2026-23RD-Oct-2026</td><td>C</td><td>A</td><td>B</td></tr>
</table>

*EOM: End of module
Department of Dental Education
Muhammad Dental College-03RD-January-2026