MUHAMMAD DENTAL COLLEGE

CONSOLIDATED

INTEGRATED CURRICULUM DOCUMENT

BDS PROGRAM

2024-2025

ABBREVIATIONS	
BCQs	**Best Choice Questions**
BST	**Bedside Teaching**
CBL	**Case Based Learning**
CC	**Curriculum Committee**
CR	**Clinical Rotation**
C-FRC	**Clinical Skills Foundation Rotations**
CPC	**Clinical Pathological Conference**
CQ	**Class Quiz**
CR	**Class Representation**
CME	**Continuous Medical Education**
DSE	**Directed Self-Learning**
HO	**House Officers**
HOD	**Head of Department**
HEC	**Higher Education Commission**
LGIT	**Large Group Integrated Teaching**
MIT	**Modes of Information Transfer**
OSPE	**Objective Structured Practical Examination**
OSCE	**Objective Structured Clinical Examination**
OSVE	**Objective Structured Viva Examination**
PBL	**Problem Based Learning**
PERLs	**Professionalism, Ethics, Research Leadership Skills**
PMP	**Patient Management Problem**
PSIL	**Problem Solving Integrated Learning**
PM&DC	**Pakistan Medical & Dental Council**
PW/Lab	**Practical work**
QEC	**Quality Enhancement Cell**
SS	**Self Study**
SL	**Skills Lab**
SGD	**Small Group Discussion**
SIM	**Simulation**
SEQs	**Short Essay Questions**
UHS	**University of Health Sciences**
TBL	**Team Based Learning**
WBT	**Ward Based Teaching**
WPBA	**Work Placed Based Assessment**

STANDARD-1: MISSION STATEMENT OF MDC & VISION OF ISU & LUMHS

1.1: MISSION STATEMENT OF MOHAMMAD DENTAL COLLEGE

Nurturing students' potential by providing them highest quality education in the field of Dentistry thereby producing individuals with strong values, compassion and professionalism, emphasizing community engagement particularly with marginalised segment of 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.

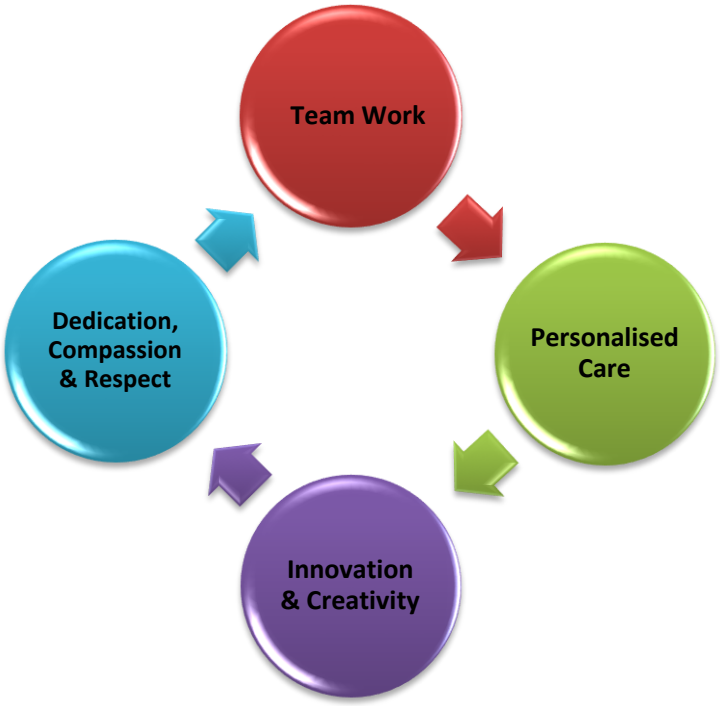
1.2: VISION OF ISU

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, encouraging them to engage in research, critical thinking, innovation and evidence- based best practices.

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

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

CORE VALUES


Team Work
Personalised Care
Innovation & Creativity
Dedication, Compassion & Respect

STANDARD-2: BDS PROGRAM OUTCOME

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.
- Recognise 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 behaviour 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

STANDARD-3: OUTLINES OF THE BDS CURRICULUM ORGANIZATION

Curriculum is a planned document which provides time bound schedule of educational activities aimed at achieving predefined learning outcomes. It includes need assessment, defining learning outcomes, preparation of table of specification for knowledge, skill and attitude to be taught with identification of modes of information transfer, implementation plan, assessment and program evaluation strategies to ensure continuous improvement.

Liaquat University of Medical & Health Sciences (LUMHS) is a vibrant, internationally recognized, student-centered, research university. LUMHS was established as Sindh Medical School in 1881. From 1951 to 2001 (50 years) Liaquat University of Medical & Health Sciences was known as Liaquat Medical College, Jamshoro. It was the first dedicated health Sciences University established in the province with a vision to bring qualitative and quantitative revolution in medical education and research through evolution. It is 8th best Medical University of Pakistan per the statistics of 2020. It is ranked # 651-700 in Asian University Ranking 2023.

Curriculum addresses the local and regional needs. This curriculum of MDC is developed according to the syllabus provided by (LUMHS) and Pakistan Medical & Dental Council (PM&DC). The curricular outcomes will be regularly assessed in meeting of academic council. LUMHS has introduced integrated Modular Curriculum ever first time in 2021 for First Year BDS. In this student will start comprehend the skills and attributes from very beginning of medical Education. Its contemporaneous nature denotes that it is a dynamic document, having built-in mechanisms for implementation and evaluation. In view of new knowledge being continuously added, a medical curriculum cannot survive in the absence of aforementioned characteristics.

Pakistan Medical & Dental Council (PM&DC) lays down the guiding principles as regards to the expected core competencies in a medical graduate in the country and oversees the proficiency of medical education known as seven star Doctors. The universities and medical and Dental colleges have the prerogative to develop a curriculum in alignment with the guiding framework provided by (PM&DC) & Higher Education Commission (HEC). One of the major functions of Pakistan Medical & Dental Council is to ensure that medical graduates should be able to meet the health needs of the society. These graduates should be competent to apply evidence-based medicine to health promotion, disease prevention, curative and rehabilitative care of the catchment population.

In the light of facts mentioned above, a framework is being provided for the development of curriculum. The said guidelines have been developed keeping in view of the initial recognition framework for medical and dental schools in Pakistan (2019) *W*orld *F*ederation of *M*edical *E*ducation *(WFME) Standards* for basic medical/dental education.

Hence, this competency based curriculum includes the applied basic sciences relevant to general dental practice and ensured that the students spend sufficient time in planned contact with patients in relevant clinical settings along with the credit hours.

The BDS Curriculum is outline in following headings.

1. Need for BDS Curriculum.
2. Goal
3. Rationale
4. Competencies
5. Student Learning Out Comes
6. Educational Content (Syllabus) includes the Credit Hours, Table of Specification, Learning Objectives, Mode of Instruction Transfer (MIT), Assessment tools etc.

MUHAMMAD DENTAL COLLEGE (MDC)				
3.2: ALIGNMENT OF ISU VISION WITH MDC MISSION				
ALIGNMENT OF ISU VISION WITH MDC MISSION AND BDS PROGRAM OUTCOME				
ALIGNMENT OF BDS PROGRAM OUTCOME WITH KNOWLEDGE, ATTRIBUTE AND SKILLS				
ISU Vision	**MDC Mission**		**Program Outcomes**	**Blooms Taxonomy**
Internationally Recognised Institute	**Highest quality education**		1. Demonstrate appropriate basics knowledge of medical sciences and dental sciences.	Knowledge
Famous for Ethical Work	**Producing individuals with strong values**		2. To exhibit ethical patient centered care based on integrity, humility, social accountability and high ethical values of this sacred profession	Knowledge, Attitude, Skills
Importance of Integrity, Honesty, Moral Principles	**Compassion**	**Professionalism**	3. Recognise patient with special care and perform dental emergencies having good communication skills	Knowledge, Attitude, Skills
Commitment to Serving the Community	**Emphasizing community engagement**	**Marginalised segment of rural population**	4. Engage in research activity aimed at improvement of quality of health care including behaviour modification of individual and community for quality life.	Knowledge, Attitude, Skills
Producing Unbiased and Empathetic Educated People	**Become Empathetic**			
Engaged in Research	**Contributing to advancements through research**			
Critical Thinking	**Socially responsible professionals**		5. Evaluate the use of laboratory tests and imaging studies and interpret the results to arrive at clinical decision making by critical thinking.	Knowledge, Attitude, Skills
Innovation	**Training**	**Innovation**	6. 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.	Knowledge, Attitude, Skills
Evidence Based Best Practices	**Best Evidence Based Practice**		7. Elicit professional skills while providing patient centered care by relevant and comprehensive physical and dental examination.	Knowledge, Attitude, Skills

4.1: NEED FOR BDS CURRICULUM

Learning is a lifelong process for Tomorrow's Doctor. Learning and training in dentistry has different periods as formal/undergraduate/foundation education and articulated in Curriculum and non-formal/post graduate education is earned through climbing the ladder of FCPS/MDS/MHPE/M-Phil and Ph D and demonstrated via Professional Development Programs, Capacity Building and Continuous Medical Education.

The Curriculum Document of BDS Program is addressing the content provided by the accreditation/regulator bodies' such as Pakistan Medical & Dental Council (PM&DC) & Higher Education Commission (HEC). This document is developed to guide dental undergraduates who are capable to provide the quality and competent healthcare to the patients by addressing the needs of the society.

The graduate program of BDS was initiated in 2019 and the curriculum is merged in the study guides of every year which is provided to every student and the teaching faculty of the respective year. This study guide will be revised every year according to the need. The curriculum highlighted integration of the disciplines in a horizontal & vertical manner. Integration is what is needed by the graduate to function competently in real-world practice settings.

The curriculum document of BDS graduate program is addressing the elements mentioned in the document of Pakistan Medical & Dental Council, (National Accreditation Framework for Medical and Dental Schools in Pakistan 2019) & standards/framework/Guideline for development of Competency-Based Medical education. This document expressed the quality standards for accreditation of Medical and Dental Colleges in Pakistan such as vision and mission statement of the Institute which should be reflected in the outcome of the extended BDS Program, Curricular Organization, Educational Content, Curriculum Management, Assessment Plan, Student Awards, Faculty Development, Program Evaluation and Continuous Renewal, Governance Services and Resources and Research and Scholarship.
The syllabus/educational content that needed to be covered during the four years of BDS program was provided by PMDC as well as the number of hours each subject needed to be taught. Guidance was sought from Pakistan Medical & Dental Council & LHMHS in this regard and the University's proposal of curricular review was endorsed by both bodies.

The curriculum document of MDC is developed according to the syllabus provided by the Liaquat University of Medical and Health Sciences (LUMHS) which was initially traditional based. LUMHS has introduced integrated Modular Curriculum ever first time in 2021 for First Year BDS. This was the start of the needs assessment process as per PMDC standards. The curriculum of MDC is hybrid curriculum which is the combo of traditional and integrated curriculum implemented as modular in the learning environment of MDC. Hence, curricular committee was developed and comprised of principal Dental (MD C), all subject specialists and Medical Educationists to suggest methodologies to cultivate a curriculum. Various learning strategies were incorporated such as interactive lectures, tutorials, case based learning, PBLs, self-directed learning and directed self-learning. All teaching strategies are interactive & small group format. In addition, non-formal experiential learning for student is promoted by CME. All this has been structured taking into account the Best Evidence Based Medical Education literature and our local culture and context. Moreover, the Electives are not part of the curriculum. Students can avail electives whenever he/she has completed the Academic Contact Session and during vacations. PERLs (Professionalism, Ethics, Research and Leaderships Skills) are part of the Curriculum and will be taught in every year.

No transformation is possible without the involvement of a dedicated faculty and staff, which took on the task with unfathomed zeal and through their efforts, the outcomes which initially were thought to be a dream took on the shape of reality.

Hopefully with the passage of time this document will prove to be the step ahead in continuing curricular reforms in medical and dental colleges of our country as it is an imperative step which is needed to be taken to produce graduates who can accomplish what society demands from them that is quality patient care.

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4. 2: GOAL OF CURRICULUM DOCUMENT

"The philosophy of any good educational system is that it focuses on making its participant a problem solver as well as a life-long self-directed learner/directed self- learner and these were the guiding principles for this process.

This competency based curriculum is aimed to abide the standards of accreditation system in order to ensure that the planning, implementation and evaluation of the curriculum is in alignment with the educational outcomes. Graduates should be competent to apply evidence-based medicine to health promotion, disease prevention, curative and rehabilitative care".

4.3: RATIONALE OF CURRICULUM DOCUMENT

"The rationale of this document is to meet the guiding principles of Pakistan Medical Commission (PMC), National Accreditation Framework for Medical and Dental Schools in Pakistan-2019 & LUMHS in order to expect the core competencies in a Dental graduate of the country and oversee the proficiency of Medical Education"

- To equip dental students with the essential knowledge of basic medical and dental sciences and their relevance to clinical dentistry.
- To fosters the development of clinical skills, such as effective communication, compassion, problem- solving, and teamwork.
- Students will learn through interactive lectures, practical sessions, demonstrations, and case-based learning.
- They will apply their knowledge and skills to realistic scenarios under supervision and prepare for real life practice.
- As future dentists, they will be expected to keep abreast of the latest evidence and best practices to address the health needs of the community.

4. 4: THE CORE COMPETENCIES OF DENTAL UNDERGRADUATES

This competency-based curriculum assesses the incremental acquisition of following competencies in medical graduate:

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

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

I. **Skillful:** *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 researches for innovations in treatment, keeping at par with international standards
6.2 Conduct independent researches 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.

4.5: CURRIULUM FRAMEWORK OF FOUR YEARS BDS PROGRAM

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. Time Table 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**	Foundation-I	**8 Weeks**
	2	Foundation-II	**8 Weeks**
	3	**Craniofacial Complex & Neuroscience**	**10 Weeks**
	4	**Orofacial Complex**	**10 Weeks**
	General Education	PERLs 1 (Professionalism, Ethics, Research & Leadership), Behavioral Sciences, Medical Education, ICT, Islamiat, Pakistan Studies & ICT.	**36 Weeks**
		Pre-Clinical (Rotation in Operative, Prosthodontics, Clinical Care, Dental Anatomy)	**34 Weeks**
Second Year BDS		Disease, Infections & Therapeutics I	**9 Weeks**
		Disease, Infections & Therapeutics II	**9 Weeks**
		Neoplasia, Hemodynamics & Genetics	**9 Weeks**
		Dental Materials & Pre-Clinical Dental Sciences	**9 Weeks**
	General Education	PERLs 2 (Professionalism, Ethics, Research & Leadership), Behavioral	**36 Weeks**

		Sciences, Medical Education & ICT.	
Third Year BDS	1	Cariology & Removal Prosthesis+ Research	**7 Weeks**
	2	Oral disease, Exodontia, Pain Management & Anxiety Control (OMFS+ Oral Medicine & Diagnosis)	**7 Weeks**
	3	Periodontics (Gingiva & Periodontal Disease) + Behavioral Sciences	**7 Weeks**
	4	Community Dentistry & Public Health Services	**7 Weeks**
	5	**Oral Radiology & Dental Informatics**	**7 Weeks**
		General Medicine & General Surgery	**35 Weeks**
	General Education	**PERLs 3** (Professionalism, Ethics, Research & Leadership), Behavioral Sciences, Medical Education & ICT.	**35 Weeks**
Final Year BDS	1	**Oral Maxillofacial Surgery**	**7 Weeks**
	2	**Operative Dentistry & Endodontic**	**7 Weeks**
	3	**Orthodontics**	**7 Weeks**
	4	**Prosthodontics**	**7 Weeks**
	5	**Paediatric Dentistry**	**7 Weeks**
	General Education	**PERLs 4** (Professionalism, Ethics, Research & Leadership), Behavioral Sciences, Medical Education & ICT.	**35 Weeks**

A few salient features that have been incorporated for all the 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. The horizontal integration 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 orientate 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 visit of 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 a healthcare 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 C-FRC 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 Forensic department and 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.

Type of evidence, activities to be performed, learning situation for the acquirement of the competencies, for the portfolio should be defined and enlisted by the academic council along with the help of the department of medical education. A 'mentoring platform' can flaunt the spirit of affective learning through the PERLS spiral. So it is recommended that a mentorship program should be developed at the respective institutes.

Note: All subjects, topics, laboratory, practical and clinical work to be examined regularly by SURVIVE and credit to be accounted in internal evaluation.

5.1: ELIGIBILITY CRITERIA FOR APPEARING IN ANNUAL PROFESSIONAL EXAMINATION OF LUMHS

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

a. At least 75% of attendance in each subject.
b. Have cleared all financial dues.
c. Must appear in all three end-of-module/term examinations.
d. No breach of discipline should have occurred for which the Disciplinary Committee has advocated a punishment.
e. No student can appear in one subject in an annual professional examination but must appear in all the subjects for that year.
f. Subjects may be designated for the supplementary exams or for students repeating a year.
g. There will be no remedial or extra classes in any subject for compensation of the shortfall in attendance.
h. Departments may offer revision classes but these will not be considered formal classes and will not be entered in the regular attendance.

5.2: COLLEGE ASSESSMENT POLICY FOR MODULES/DISCIPLINE/SUBJECT

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

Formative or ongoing assessment:

- Marks for CBL sessions, logbooks, history taking, Tasks performed during clinical supervision or clerking of patients.
- End of OPD rotation examinations, CATs, SURVIVE, quizzes and tests held in a department during modules or session.

Summative Assessment:

- The end-of-module test comprises:
    - OSCE or OSPE examination
    - Viva voce exam.
    - Written theory examination
    - The written examination has 2 parts an MCQ and a short answer or short essay type examination.

Generation of Internal Evaluation marks from each module.

- 20% MARKS will be calculated from each end of module exam and will be counted in the final examinations by LUMHS.

5.3: STUDENT AWARD POLICY

1. MEDALS

- **Committee**

  Dr. Muhammad Aqeel Aslam — HOD Science of Oral Medicine & Diagnosis

  Prof. Dr. Zaibun Nisa — HOD Periodontology

- **Eligibility criteria is as under**

1. <u>Gold Medals</u>

Are awarded to the students scoring highest aggregate marks of all professional examinations

2. <u>Silver Medal</u>

Student/s getting second highest aggregate marks of all professional examinations

2. SCHOLARSHIP CRITERIA

- 1st, 2nd and 3rd position holder from each professional examination for MBBS.
- 1st and 2nd Position holder from each professional examination for BDS
- Highest marks in the class not less than 70%
- Eligible students must have appeared and passed in all modular exams of the same year

3. MERIT CERTIFICATES

- Awarded to the students scoring highest percentage in various professional subjects

5.4: POLICY FOR ELECTIVES

a. 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.

b. The Electives Rotation will be of four weeks' duration.

c. It will be planned at least six months in advance during the 3rd or 4th Year.

d. The Elective will be planned during the **SUMMER HOLIDAYS** preferably.

e. The institution or department will be of the student's choice.

f. During the elective, the student will not get credit for attending lectures at MDC.

g. It is the student's responsibility to ensure that his/her overall attendance record is not affected adversely by the elective.

h. The student will not proceed on an elective without informing the Vice Principal or Concerned HOD designated for this purpose who will take permission from the Principal.

i. 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).

j. The adequacy of education during the elective is the student's own responsibility.

k. 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 that admission is not cancelled.

l. The student will ensure that the Elective Supervisor completes an evaluation report at the end of the elective.

m. MDC will not provide any financial assistance for the elective.

5.5: DISTRIBUTION OF TOTAL TEACHING HOURS FOR UNDERGRADUATE DENTAL EDUCATION (BDS) CURRICULUM

SUBJECTS	1ST YEAR= 1300	2ND YEAR =1320	3RD YEAR= 1245	4TH YEAR= 1210	TEACHING HOURS=5065	RANGE OF TEACHING HOURS
Anatomy (Embryology, Histology, Gross Anatomy)	300		--	--	300	300-350
General Physiology	300		--	--	300	300-350
Biochemistry	180		-	-	180	180-200
Oral Biology & Tooth Morphology	300				300	250-350
Islamic Studies/Pak Studies	50				50	
Research	40	50	10		100	
Pharmacology	-	220			220	200-250
Pathology (General Pathology, Special Pathology, haematology, Parasitology etc)		220			220	150-250
Dental Materials Sciences		300		-	300	300-350
Oral Pathology		180			180	150-250
Dental Public Health/Preventive Community Dentistry			200		200	200
Oral Medicine/Diagnosis/Radiology			150		150	150
Periodontology			180		180	200
General Medicine			180		180	180
General Surgery			170		170	
Pre-Clinical (Operative, Prosthodontics, DM		80 80 80	80 80		400	80
Oral Surgery (Forensic Odontology assessed with OMFS)			80+5=85	250	335	335
Paediatric Dentistry				100	100	100
Orthodontics				250	250	250
Operative Dentistry				250	250	250
Prosthodontics				250	250	250
SDL General Education (Behavioural Sciences, English, Art & Humanities, Communication Skills, Clinical Care, Professionalism, Leadership, Management, dental & Dental Ethics, patient Safety & Infection Control, ICT (Computer Skills, Self Study, Extra-curricular Activities)	130	110	110	110	440	420

565: TIME TABLE OF THE FIRST YEAR

The syllabus of every module of BDS is displayed in the form of weekly timetable along with the mode of transfer. As a sample; the most recent timetable has been displayed in the following table. To make it more generalize the name of the faculty member and the venue of the teaching is eliminated.

DAY	08:30-09:30	09:30-10:30	10:30-11:00	11:00-13:00	13:00-14:00	14:00 -15:00	15:00=16:00
	Venue: Lecture Hall C (1th Floor)			Lab Skills		Tutorial	SDL
MONDAY	ANATOMY	PHYSIOLOGY	BREAK	A.Oral Biology B.Biochemistry	BREAK	A. Anatomy B. Physiology	SDL
TUESDAY	PHYSIOLOGY	ANATOMY		A.Biochemistry B.Oral Biology		A-Physiology B-Anatomy	SDL
WEDNESDAY	BIOCHEMISTRY	ANATOMY		A.Anatomy B.Physiology		Communication Skills SHA	SDL
THURSDAY	ORAL BIOLOGY	BIOCHEMIST-RY		Oral Biology Tutorial		Biochemistry	SDL
FRIDAY	Library session	ORAL BIOLOGY		A- Physiology B- Anatomy		Combined Tutorial Anatomy	SDL

5.7: TABLE OF SPECIFICATION

MUHAMMAD DENTAL COLLEGE
TABLE OF SPECIFICATION (TEACHING AND ASSESSMENT)

Teaching strategies must be developed as per the TOS as suggested by Liaquat University of Medical and Health Sciences (LUMHS).

TOS OF TEACHING OF PRE-CLINICAL SUBJECTS				
Subject	**Cognition**	**Psychomotor**	**Affective**	**Total**
Anatomy	60%	30%	10%	100%
Physiology	60%	30%	10%	100%
Biochemistry	70%	10%	20%	100%
Dental Materials	50%	40%	10%	100%
Oral Biology	70%	20%	10%	100%
Community Dentistry	60%	20%	20%	100%
Pathology	70%	25%	5%	100%
Pharmacology	65%	25%	10%	100%

TOS OF TEACHING OF CLINICAL SUBJECTS				
Subject	**Cognition**	**Psychomotor**	**Affective**	**Total**
Medicines	60%	30%	10%	100%
Surgery	70%	20%	10%	100%
Oral Medicine	60%	30%	10%	100%
Periodontology	70%	10%	20%	100%
Orthodontics	70%	20%	10%	100%
Prosthodontics	50%	30%	20%	100%
Operative Dentistry	50%	30%	20%	100%
Paedodontics	60%	30%	10%	100%
Oral & Maxillofacial Surgery	50%	30%	20%	100%

TABLE OF SPECIFICATION: (FOR ASSESSMENT).

Assessment strategies must be based upon TOS of the teaching strategies that includes cognition, Psychomotor and affective domain. As all these domains may not be adequately assessed by any single methods. It is imperative to develop different methods to address all three domains. These methods may be both Direct and Indirect assessment. Therefore, the table

of specification developed is a general guide line and each department has liberty to developed assessment methods based upon teaching strategies.

Subject	Weekly Oral test, Monthly SBQ.	Skills Labs	Attitude	Total
Anatomy	60%	30%	10%	100%
Physiology	60%	30%	10%	100%
Biochemistry	70%	10%	20%	100%
Dental Materials	50%	40%	10%	100%
Oral Biology	70%	20%	10%	100%
Community Dentistry	60%	20%	20%	100%
Pathology	70%	25%	5%	100%
Pharmacology	65%	25%	10%	100%

Subject	Ward Test, SBQ, Journal Club,	Clinical Examination	Empathy	Total
Medicines	60%	30%	10%	100%
Surgery	70%	20%	10%	100%
Oral Medicine	60%	30%	10%	100%
Periodontology	70%	10%	20%	100%
Orthodontics	70%	20%	10%	100%
Prosthodontics	50%	30%	20%	100%
Operative Dentistry	50%	30%	20%	100%
Paedodontics	50%	30%	20%	100%
Oral & Maxillofacial Surgery	50%	30%	20%	100%

***SBQs=Scenario Based Questions**

5.8: MODE OF INFORMATION TRANSFER-(MIT)

The educational strategies in this curriculum are various and aligned with domain of learning and according to the desired outcome and known as The Mode of Instructional Transfer (MITs). Following MITs are integrated in learning.

1. **Large Group Interactive Session (LGIS)**
2. **Team Based learning (TBL)**
3. **Case Based learning (CBL)**
4. **SURVIVE**
5. **Tutorials**
6. **Assignments**
7. **Case Presentation**
8. **Bedside Teaching/Ward Base Teaching**
9. **Simulations**
10. **Skills Laboratories**
11. **Case based Conference**
12. **Lab Practical**
13. **Demonstrations**
14. **Ward Rounds**
15. **Flipped Classroom**

OPERATIONAL DEFINITION OF DIFFERENT TEACHING STRATEGIES	
Delivery of a curriculum also needs a diversity of educational Vernacular for the different learning styles. Following are a few of recommended Instructional Strategies. It is advised that at least three different methods of Instructions should be adopted in the institutional Planning. This will enable the diversity of Learning patterns to be facilitated.	
Interactive Session (Large Group LGIS)	➢ Lecture format is the most widely used approach to teaching especially in a large class size with average attention span of 20-30 mins. ➢ Interactive lecturing involves a two-way interaction between the presenter and the participants. ➢ Interactive methods like brainstorming, buzz group, simulation, role play, and clinical cases canbe used. **Significance of its usage:** • Relaxed environment • Diverse opinions • Active involvement • Increase attention and motivation. • Independence and group skills. • Cost effective. • Suitable for taking advantage of available audiovisual technologies
Team Based learning (TBL)	➢ TBL is a uniquely powerful form of small group learning. ➢ It provides a complete coherent framework for building a flipped course experience. ➢ There are four essential elements of TBL which include: • Teams must be properly formed and managed 5-7 students). • Getting students ready. • Applying course concepts • Making students accountable **Significance of its usage** • Students are more engaged. • Increased excitement in TBL classroom. • Teams outperform best members. • Students perform better in final and standardized exams.
Problem Based Learning (PBL)	➢ It is an instructional student-centered approach in which students work in small groups on a health problem. ➢ Identifying their own educational needs. ➢ Being responsible for the acquisition of the knowledge required to understand the scenario. **Significance of its usage** • Teamwork • Critical evaluation of literature • Self-directed learning. • Use of resources • Presentation skills • Leadership • Respect for Colleagues view.
Case Based Learning (CBL)	➢ It is an inquiry structured learning experience utilizing live or simulated patient cases to solve, or examine a clinical problem, with the guidance of a teacher and stated learning objectives. **Significance of Its Usage** • Induce a deeper level of learning by inculcating critical thinking skills. • Flexibility on use of case

	• Helps students acquire insightful information. • Stay abreast with novel advancements in healthcare
Tutorials	➢ Tutorial is a class or short series of classes, in which one or more instructors provides intensive instruction on some subject to a small group. ➢ Its purpose is to explore student point of view for discussion. ➢ It directed reflective learning skills. **Significance of Its Usage** • Develop and assess the extent of background knowledge of students which enables them to properly understand concepts which may not have been understood in lectures. • Develop problem-solving skills. Develop practice of self-learning. Reduced time to understand the topic.
Reflective Writing	➢ It is a metacognitive process that occurs before, during and after the situation with the purpose of developing greater understanding of both the self and situation so that future encounters with the situation are informed from previous encounters. **Significance of its usage** • Questioning attitude and new perspectives.Areas for change and improvement. • Respond effectively to new challenges. • Critical thinking and coping skills
Case Presentations	➢ It is a teaching method which provides descriptive information about a clinical patient scenario and to share this educational experience with the general medical and scientific community. ➢ It prepares students for clinical practice, using authentic clinical cases by linking theory to practice with the help of inquiry-based learning methods. **Significance of its usage** • Cultivate the capacity for critical analysis. • Judgment and Decision making. • Facilitate creative problem solving. • Allow students to develop realistic solutions to complex problems
Bedside Teaching	➢ Teaching and learning that occurs with actual patient as the focus. ➢ It occurs in wards,emergency departments, operating rooms, and high dependency units. **Significance of its usage** • Stimulus of clinical contact. • Psychomotor skills • Communication skills • Language skills. • Interpersonal skills • Professional attitudes and empathy • Role modeling
Simulation	➢ Person, device or set of conditions, which attempts to present education and evaluation of problems authentically. ➢ The student or trainee is required to respond to the problems as s/he would under natural circumstances. **Significance of its usage** • Safety for patients Liberty to make mistakes. • Manageable/variable complexity of tasks • Opportunity to develop self-efficacy before real patient encounter.

	• Repeatability of tasks. • Learning at different pace is permissible
Skills Laboratories	➢ It refers to specifically equipped practice rooms functioning as training facilities offering hands on training for the practice of clinical skills within non-threatening environment prior to their real-life application. ➢ This applies to both basic clinical skillsas well as complex surgical skills. **Significance of its usage** • Controlled, anxiety-free, and risk-free learning environment to students. • A platform for repeated practice for mastery in relevant clinical skills. • Increase the preparedness of student learners before transitioning to the real hospital setting. • Build strong communication skills. • Enable learners to make critical decisions.
Case Based Conference	Clinical Case based conferences allow clinicians and medical students to present difficult case material and include discussions of diagnostic, clinical formulation, and/or treatment issues. **Significance of its usage** • Provides detailed (rich qualitative) information. • Provides insight for further research. • Permitting investigation of otherwise impractical (or unethical) situations.
Lab Practical	Lab practical involve things like identifying a structure, a type of stain through a microscope, a problem with a preparation, reading biochemical test results andanswering safety questions. These simulations allow students to attempt theexperiments in the laboratory in a risk-free way that provides the opportunity to makemistakes and learn how to correct them using the immediate feedback generated. **Significance of its usage** Enhance mastery of subject matter.Develop scientific reasoning. Develop practical skills. Develop teamwork abilities.
Demonstrations	The demonstration method in teaching can be defined as giving a demo or performing a specific activity or concept. It is a teaching-learning process carried outin a very systematic manner. **Significance of its usage** • Promotes learning and correlates theory with practice. • Sharpens the observation skills. • Sustain interests in learning environment • Helps teacher to evaluate student's response.
Ward Rounds	It is a composite clinical practice to review inpatients management and progress, tomake decisions about further investigations, treatment options and discharge from hospital. It is an opportunity for clinicians, students, and patients to participate in education and training at bedside. • **Significance of its usage** • Patient management skills • History taking • Physical examination Time management skills Communication skills

6.1: RATIONALE OF CURRICULUM OF FIRST YEAR MBBS

This modular curriculum aims to equip dental students with the essential knowledge of basic medical and dental sciences and their relevance to clinical dentistry. It also fosters the development of clinical skills, such as effective communication, compassion, problem- solving, and teamwork. Students will learn through interactive lectures, practical sessions, demonstrations, and case-based learning. They will apply their knowledge and skills to realistic scenarios under supervision and prepare for real life practice. As future dentists, they will be expected to keep abreast of the latest evidence and best practices to address the health needs of the community.

INTRODUCTION TO INTEGRATED CURRICULAR FRAMEWORK		
Paper-I	**Paper-II**	
Module-I	**Module-II**	**Module-III**
Foundation - I & II	Craniofacial complex	Orofacial Complex
16 Weeks	10 Weeks	10 Weeks
Human Anatomy, Human Physiology, Biochemistry and Oral Biology & Tooth Morphology		

Paper-III: Module-IV
Pre-Clinical Dental Sciences-I
32 Weeks (on rotations basis group wise)
Oral Anatomy & Tooth Morphology, Biomaterials and Pre- clinical Sciences of Operative Dentistry-I, Biomaterials and Pre-clinical Sciences of Removable Prosthodontics-I, Introduction to Dental Care and Professionalism-I (on rotation basis) and Research Methodology-I and Dental Informatics-I

6.1: PROGRAM INTENDED LEARNING OUTCOMES OF FIRST YEAR BDS

Program Intended Learning Outcomes of First Year BDS			
Knowledge and Understanding	**Cognitive Skills**	**Practical Skills**	**Transferable/Capability Skills**

Knowledge and Understanding

After undergoing this program, a student will be able to

- Identify and describe the anatomy and physiology of the stomatognathic system
- Identify and describe various pathology associated with the stomatognathic system and understand relevant diagnostic aids
- Describe treatment methodologies to restore the stomatognathic system to health
- Explain methods of prevention of oral diseases in the individual and the community

Cognitive Skills

After undergoing this program, a student will be able to

- Diagnose the oral condition of the patient in relation to systemic conditions and
- Interpret diagnostic data to design a treatment plan
- Apply multidisciplinary simulation techniques available to optimize treatment plans
- Modify known treatment methodologies to best resolve the patient's oral disease
- Develop a cost effective strategy based on Principles of Oral Health promotion for the community at large to improve oral health status while valuing patients and community as partners

Practical Skills

After undergoing this program, a student will be able to

- Differentiate manifestations of oral diseases by performing clinical examination in an ethical and empathetic manner
- Perform relevant procedures for oral diseases to restore oral health of the patient by selecting appropriate equipment, instruments, simulation labs and materials
- Construct a treatment plan for patients with oral symptoms of systemic health conditions and perform procedures and referral to restore health of the patient with compassion
- Alleviate pain and infection by administration of appropriate medications and manage medical emergencies associated with dental treatment and maxillofacial trauma in an empathetic manner

Transferable/Capability Skills

After undergoing the program, a student will be able to

- Manage information, develop technical reports and make presentations
- Build, Manage and Lead a team to successfully complete a project and communicate across teams and organizations to achieve professional objectives.
- Work under various constraints to meet project targets
- Adopt to the chosen profession by continuously upgrading his/her knowledge and understanding through Life-long Learning philosophy

TEACHING AND LEARNING STRATEGIES			
▪ Multiple educational methods will be used comprising of self-study, interactive lectures, group discussions, and practical and manual skill sessions. ▪ For domain wise learning objectives, the teaching strategies are mentioned as below			
Knowledge and Understanding	**Cognitive Skills**	**Practical Skills**	**Transferable/Capability Skills**
Cognitive Skills			
• Interactive lectures **(IL)** using audio visual aids on power point presentation • Group discussions in form of large group and small group • Collaborative learning • Self-study and reading from learning resources			
Psychomotor Skills			
• Focusing the histological slides on microscope • Identification of normal histological structures on slides under different magnification • Drawing and labeling the histological slides on practical note books • Measurement of BP and Pulse rate • Skills learn in skills Lab			
Transferable/Capability Skills			
• Interaction with peers, group members, teachers, support staff etc. • Group discussions (small and large) • Oral presentations by students			

MODULE-I: FOUNDATION-I			
Anatomy	**Physiology**	**Biochemistry**	**Oral Biology & Tooth Morphology**
• Introduction to the subject of Anatomy and its subdivisions • Anatomical position, Anatomical planes & terms of position • Terms of movements • Introduction to the parts of axial and appendicular skeleton • Structure of the Cell Membrane and Nucleus • Cell Organelles • Microscope (Practical) • Basic tissues of	• Introduction to Physiology • Functional Arrangement-Levels of organization • Sterilization & Hand Washing (Practical) • Cell and its membrane • Study of Microscope (Practical) • Cell organelles • Intro to Power Lab. (Practical) • Body Fluids • Homeostasis	• Introduction to Biochemistry • Macromolecules • Introduction to Lab.(Practical) • Cell Membrane • Solutions / Chemical Regents (Practical) • Cells Organelles (Mitochondria/ E.R) • PH & Buffers • PH Meter (Practical) • Carbohydrates-I (Classification & Function) • Monosaccharides • Analysis of Carbohydrates (Practical)	• Introduction to Oral Biology • Introduction to Structure of Tooth & Supporting Structure • Clinical Relevance of Structure of Tooth • Age changes of structure of tooth • Cytoskeleton • Intracellular Junctions • Fibroblast • Secretory products of fibroblast

Human Body (Connective tissue) • Slide preparation and the H&E Staining (Practical) • Skeletal System (Classification of Bones) • Epithelium: Structure & Classification (Practical) • Joints and its types • Bone (Practical) • Classification of muscles • Integumentary System: Skin and fascia • Histology of muscle (Practical) • Cartilage and its types (Practical) • Male & Female Reproductive System • Cell cycle: Mitosis and Meiosis • Gametogenesis • Ovulation & Fertilization • First Week of Development • Second Week of Development • Third Week of Development • Third to Eight Week of Development (Embryonic period) • Derivatives of Germ Layers • Fetal Period • Placenta & Fetal Membranes • Teratology	• Transport • Composition & Function of Blood • RBC + Erythropoiesis • How to collect blood sample (Practical) • Hemoglobin-1 Structure & System + Types • Blood Film (peripheral blood film) (Practical) • Hemoglobin (Practical) • Anemia + polycythemia • WBC type + function • Monocyte + macrophage system • DLC (Practical) • Overview of immune by classification • Innate immunity • ESR (Practical) • Acquired immunity • Bleeding Time Clotting Time (Practical) • Blood group-1 ABO + capacity • Blood group-2 RH + Erythroblastosis • Platelet structure & function • Blood Group (Practical) • Hemostasis & its natural mechanism • Clotting pathway	• Disaccharides & Oligosaccharides • Analysis of Carbohydrates-2 (Practical) • Polysaccharides • Polysaccharides (Practical) • Amino Acids • Amino Acids (Practical)	

	• BT (Practical) • Anti-clotting + bleeding disorder • CT (Practical)		
MODULE-I: FOUNDATION-II			
Anatomy	**Physiology**	**Biochemistry**	**Oral Biology & Tooth Morphology**
• Boundaries of Thoracic cavity and its contents • Mediastinum and its contents • Tracheobronchial tree and lungs • Pericardium and Heart 1 • Internal structure of Heart and blood supply of Heart • Primitive heart tube and its derivatives • Microscopic features of small intestine • Microscopic features of large intestine • Derivatives of foregut, mid gut and hind gut	• Overview of Respiration • Respiratory Rate-1 depth (Practical) • Pulmonary ventilation (Mechanism) • Lung volume + capacity + dead space • Spirometry (Practical) • Exchange of gases • Foleys (Practical) • Transport of O2 & CO2 • Oxygen-Hemoglobin curve • Regulation of respiration • Hypoxia & its types • Overview of CVS + properties of cardiac muscle • Pulse (examination) (Practical) • Conductive System of Heart • Heart Sounds (Practical) • ECG • ECG (Practical) • Cardiac cycle • Hemodynamics • CPR (Practical) • Cardiac output & its regulator • Micro circulation (fluid exchange+starling for+etc)	• Protein • Protein (Practical) • Plasma Proteins • Immunoglobulin • Immunoglobulin (Practical) • Lipids • Lipid (Practical) • Fatty Acids • Cholesterol • Cholesterol (Practical) • Prostaglandins • Nucleic Acids	• Development of Tooth • Saliva • Formation and secretion of saliva • Clinical Consideration of saliva

	• Blood pressure & its regulation • Blood pressure (Practical) • Masticate + swallowing • Composition function+regulation of saliva • Motor function of stomach + lower end off esophagus • Composition, function & regulation of gastric juice • Function of liver • Overview of urinary system (function of kidney) • Nephron parts & types, steps of urine formation • GFR is its regulation • Tubular reabsorption + secretion • Hormones action an kidney • Micturition reflex		
MODULE-II: CRANIOFACIAL COMPLEX			
Anatomy	**Physiology**	**Biochemistry**	**Oral Biology & Tooth Morphology**
• External features of skull • Norma verticalis and occipitalis • Norma frontalis • Norma lateralis • Temporal fossa and infratemporal fossa • Pterygopalatine fossa • Mandible & temporomandibular joint • Norma basalis • Introduction to pharyngeal	• Organization of nervous system • Types of neurons and function • Synapse types, and physiology types of synapses • Sensory receptors, types and properties • Sensory pathways Anterolateral column • Pain pathway • Analgesia system • Spinal cord reflexes, reflex arc, Reflex action	• Enzymes • Enzymes (Practical) • Classification of Enzymes • Enzyme Inhibition • Factors affecting on enzyme activity • Isoenzymes • Normal Hb% Structure / Function • Abnormal Hemoglobin & causes	• Cell of Bone • Histology of Bone • Ossification of Bone • Bone Turnover • Histology of TMJ • Biomechanics of TMJ • Clinical consideration of TMJ • Basics of Occlusion • Occlusion of teeth • Nerve and vascular supply of teeth

apparatus • Model Study • Development of mandible • Cranial Cavity • Scalp • External features of skull • Norma verticalis and occipitalis • Norma frontalis • Norma lateralis • Temporal fossa and infratemporal fossa • Pterygopalatine fossa • Mandible & temporomandibular joint • Norma basalis • Introduction to pharyngeal apparatus • Model Study • Development of mandible • Cranial Cavity • Scalp • Muscles of facial expression • Muscles of mastication • Derivatives of pharyngeal arches • Development of face • Model Study • Derivatives of pharyngeal pouches and clefts • External carotid artery and its branches • Maxillary artery and its branches • Facial artery and its branches	• Classification of nerve fiber • Sensory pathways. Dorsal column medial lemniscal system • Spinal cord reflexes, reflex arc, Reflex action • Examination of sensory system • Examination of motor system • Motor pathway (pyramidal tracts) • UMN + LMN • Cerebellum function + disorder • Basal ganglion function disorder • Hypothalamus • ANS • Membrane potential (RMP + Graded + Nernst) • Action potential (saltatory conduction) • Types + feature + characteristic of muscle • NMJ + motor unit • Contraction of skeletal • Smooth muscle & its Contraction • Comparison of skeletal & smooth muscle Contraction • Somatic sensory pathway (dorsal) • Somatic sensory pathway (anterio lateral) • Pain pathway • Anlagesic system • Spinal cord & it functions (reflexes)	• Degradation of Heme / Formation of Bile • Oxygen Binding Capacity of Hb% & its factors • Hyperbilirubinemia (Jaundice)	

• Opthalamic artery • Facial vein and its connections • External juglar vein, retromandibular vein, anterior & internal juglar vein. • Superficial cervical and Deep cervical lymph nodes • Deep cervical lymph nodes • Trigeminal nerve and its branches • Facial nerve and its branches in the face • Parasympathetic ganglion • Meninges • Bony orbit • Lacrimal apparatus • Eye ball • Eye ball (model study) Group Discussion • Ear • Nose • Development of nose • Microscopic features of nasal cavity (Practical) • Organization of nervous system and Gross anatomy of spinal cord • Gross features of brain stem and attachment of cranial nerves • Gross features of cerebellum • Gross features of diencephalon • Cerebrum: White matter, functional			

cortical areas • Blood supply of brain and spinal cord • Development of nervous system • Autonomic nervous system			
MODULE-III: OROFACIAL COMPLEX			
Anatomy	**Physiology**	**Biochemistry**	**Oral Biology & Tooth Morphology**
• Gross anatomy of oral cavity • Microscopic features of contents of oral cavity (Tonsils) (Practical) • Gross anatomy of tongue • Microscopic features of tongue (Practical) • Cervical vertebrae • Skin, Fascia and neck muscles • Triangles of neck • Major vessels of neck • Gross anatomy of parotid gland • Gross anatomy of submandibular and sublingual gland	• Optics of vision errors of refraction and accommodation • Function of Ear-I • Physiology of Taste • Physiology of Smell • Classification of Hormones • Mechanism of Action of Hormones • Anterior Pituitary Hormone • Posterior Pituitary Hormone • Thyroid Hormones • Calcium Hoemostasis (PTH)	• Classification of Vitamins & General Functions of Vitamins • Vitamin A • Vitamin D • Vitamin E • Vitamin K • Vitamin B1 • Vitamin B2 & B3 • Vitamin B6 & B9 • Sodium & potassium • Calcium • Phosphorus • Magnesium & Fluoride • Vitamin C • Saliva	• Tooth Eruption • Eruptive Tooth Movements • Post-Eruptive tooth movement • Abnormal tooth movement • Shedding of tooth • Enamel • Amelogenesis • Structure of Enamel • Clinical consideration of Enamel • Dentine • Dentinogenesis • Histology of Dentine • Cell of Pulp • Histolgy of Pulp • Theory of dentine sensitivity • Age changes of dentine pulp complex • Periodontium • Structure of Cementum • Periodontal Ligament • Alveolar bone • Clinical considerations of PDL • Ductal system of salivary gland • Cells of salivary gland • Wound Healing in Oral Tissue • Repair of tooth & supporting structure.

			• Oral Mucosa • Clinical Types of Oral Mucosa • Components of Oral Mucosa • Dentogingival junction

MODULE-IV: DENTAL ANATOMY, PRE-CLINICAL DENTAL SCIENCES & DENTAL MATERIALS	
Bio-Materials & Pre-Clinical Operative Dentistry-I	**Bio-Materials & Pre-Clinical Removable Prosthodontics-I**
• Introduction to Operative Dentistry, Enamel, dentine, pulp, periodontium and tooth surfaces • Dental Caries; etiology and classification • Instruments used in Operative Dentistry • Ergonomics, chair positioning in Operative Dentistry • Aims, objectives and Fundamental of tooth preparation • Class-I Cavity Tooth Preparation • Mechanical & Thermal Properties of Bio-Dental Materials • Methods of Isolation (Rubber Dam Practice) • Bio-material Dental Amalgam, Composition, manufacturing, classification, setting reaction. • Bio-material Dental Amalgam Manipulation, Uses and Properties • Class-I Restoration (Lining, Filling) • CBL-1: Class-I Cavity Restoration & Selection of Restorative Materials • Liner and Bases (Zinc Phosphate Cement) • Class-II Cavity Tooth Preparation • CBL-2: Selection of Lining Materials • Pulp Capping Materials (Calcium Hydrooxide Cement) • Deep carious lesion and MTA as Pulp capping material • Class-II Amalgam Restoration • Mercury Hazard & Handling • Amalgam Failure & Repair • Matrix Band System • CBL-3: Management of deep carious lesion and Selection of direct and indirect Pulp Capping Materials	• Terminology of Prosthodontics, Objectives of partial/complete denture, types of dentures • Types of dentures and their objectives (Practical) • Kennedy's Classification and Applegate's rules for applying Kennedy's classification • Kennedy's Classification (Practical) • Impression Materilas-1 (SDM-1) • Impression for Removable partial denture (Practical) • Impression Materilas-2 (SDM-2) • Impression for Complete denture (Practical) • Surveying • Use of Surveyor (Practical) • Stainless steel & wrought alloys (SDM-3) • Clasp Formation • Clasp construction (Practical) • Outline and Surfaces of maxillary & mandibular dentures (Lecture & Practical) • Gypsum (SDM-4) • Model making (Practical) • Beading and Boxing (SDM-5) • Beading and Boxing the Impression (Practical) • Acrylic material (SDM-6) • Construction of customized tray (Practical) • Waxes (SDM-7) • Construction of wax occlusal rims (Practical) • Articulation • Articulation and Articulators (Practical) • Anterior teeth arrangement • Anterior teeth arrangement (Practical) • Posterior teeth arrangement • Posterior teeth arrangement (Practical) • Flasking • Dental flask and flasking (Practical) • Separating medias

	• Application of separating medias (Practical) • Dewaxing, Packing and Curing • Processing of Denture (Practical) • Finishing & Polishing materials &procedure • Deflasking, Finishing and Polishing (Practical) • Denture liners • Faults in Finished Denture (Practical) • Denture Cleansers • Follow-up Instructions (Practical) • Completion of practical work • Complete denture remaining work (Practical)
Introduction to Clinical Care & Professionalism-I	**Dental Anatomy & Tooth Morphology-I**
• Orientation, Course Overview, Class Code of conduct • Introduction to Ethics and Ethical theories • Fundamental Principles of Biomedical ethics • Dental Practice Management–I: Introduction to dental Chair, position of Dentist and Assistant • Dental Practice Management–II: Basic Instrumentation for Dental Practice • Cross Infection Control–I: Hand Hygiene Standards and Personal Protection Equipment. • Cross Infection Control–II: Waste Management and Needle Stick injury Management • Cross Infection Control–III: Sterilization and Disinfection • Dental Practice Management–III: Record Keeping • Dental Practice Management–IV: Dental Material: Available in Clinic and Appropriate Selection • Stress Management • Time Management • Communication Skills–I: Patient, Professional Colleagues, and Dental Staff • Communication Skills–II: Prescription Writing, Medical Consultation Writing, progress note	• Introduction to Dental Anatomy • Eruption and shedding of primary and permanent teeth • Landmarks of tooth • Tooth Numbering System • Contact areas, embrasures orofacial spaces • Anatomy of Decidious teeth • Difference between decidious and permanent teeth • Maxillary Central Incisor • Mandibular Central Incisor • Maxillary Lateral Incisor • Maxillary Canine • Mandibular Canine • Mandibular Later Incisor • Maxillary first Premolar • Mandibular first Premolar • Maxillary second Premolar • Mandibular first Molar • Mandibular second Premolar • Maxillary second Molar • Maxillary & mandibular third Molar • Maxillary first Molar • Mandibular second Molar

Writing and Referrals to specialists. • Professionalism in Dentistry • Informed Consent in Dental Practice • Dentist Patient Relationship • Confidentiality and Privacy • Ethical Issues in Dental Practice–I: Malpractice, Harassment • Ethical Issues in Dental Practice–II: Patient or Dentist with Infectious diseases: Conflict of interest and relationship with Pharmaceutical Companies • Photography in Dental Practice • Radiography in Dental Practice	
Research Methodology-I	**Dental Informatics-I**
• Introduction to Health Sciences Research • Introduction to Biostatistics • Types of Research Variables • Central Tendencies & Measures of Dispersion • Research Methodology • Literature Review • Basic Biostatistics • Basic Research • Study Designs • Literature search • Basic Laboratory techniques • What is research proposal and how to write it? • What are the components of proposal writing? • Presentation of Research Proposal	• **Introduction to IT:** To Learn the basics of IT, Importance, benefits and Areas of Information Technology • **Computer System and Parts:** To Learn about the Parts of computer. • **Hardware and Software:** To Learn about the Hardware: Processor. Memory, Storage devices and Input and output devices. Software: system and Application software • **Operating System:** To study about operating system and how to operate the computer • **MS Word Basics**: To learn basics of MS Word • Formatting text and Paragraphs: To Learn about Formatting the text, paragraphs and working on pages • Create and modify list: Students will be able to numbers and bullets format a list level • Apply built-In styles to text: Working on word Art, change text to word Art • Insert tab Tables: Creating tables in MS word document and all formats • Insert tab: Learn to insert shapes, pictures • Insert tab: Learn to insert Header and Footer • Page layout tab: Printing the document • Internet: To learn about the internet concepts, uses of Internet • Search Engine and basic search: Exploring Search Engines • MS PowerPoint: Introduction to Power point • Features of PowerPoint: Designs, Transition and Animation.

MODULE-I WEEK-1 INTRODUCTORY				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	State the history subject of Anatomy including its various branches and practical applications ofAnatomy as a foundation in different fields of dental sciences	Introduction to the subject of Anatomy and its subdivisions	IL	BCQs, SEQs,OSPE
2	Discuss the integration of structures and functions of human body by relating with thearrangement of different levels organization	The arrangement of different levels organization	IL	BCQs, SEQs,OSPE
3	Comprehend the exact location of dissected/prosecuted part /organ of human body with respect to various terms of positions, direction, and body planes. Interpret the movements of different parts of human body the knowledge ofvarious terms of movement.	Anatomical planes, Anatomical position and Terms of movements and position	IL	BCQs, SEQs,OSPEs
4	Explain the appendicular and axial skeleton	Introduction tothe parts of axial and appendicular skeleton	IL	BCQs, SEQs,OSPE
5-6	Demonstrate the parts and handling of light microscope	Microscope	**Practical**	BCQs, SEQs, OSPE
7	Enlist steps of tissue processing, Know the basichistological stains	Fixation, Embedding, Sectioning, Staining,Steps of H&E staining	IL	BCQs, SEQs,OSPE
PHYSIOLOGY				
8	Define physiology and enumerate the branchesof physiology	Introduction to Physiology and its sub branches	IL	BCQs, SEQs,OSPE
9	Discuss the integration of structures and functions of human body by relating with thearrangement of different levels organization	Functional arrangement of different levels of organization	IL	BCQs, SEQs
BIOCHEMISTRY				
10	Introduction of bio-chemistry including its various branches and clinical applications of Bio-chemistry as a foundation in different fields of dental sciences	Introduction to biochemistry and its implicationin medicine	**IL**	BCQs, SEQs
11	Describe macromolecules. Relate macro-molecules with different functions	Macromolecules	**IL**	BCQs, SEQs

12	Define Extra-cellular matrix. Describe the structure of proteins, carbohydrates and mineral content of ECM. Describe the functions of various molecules of ECM. Describe the variousforms of Extra-cellular matrix (intercellular space, subcutaneous tissue, cartilage, bone) the variations in protein carbohydrates and mineral contents.	ExtracellularMatrix	**IL**	BCQs, SEQs, OSPE, Viva
ORAL BIOLOGY & TOOTH MORPHOLOGY				
18	Introduction to the subject of oral anatomy andits subdivisions, The structure of tooth & Supporting tissue of tooth	Introduction to Oral Biology & Structure of tooth	IL	BCQs, SEQs
INFORMATION TECHNOLOGY				
23	Define Information Technology (IT) and itsimportance in medicine	Importance of IT skills	IL	BCQs, SEQs
RESEARCH METHODOLOGY				
31	To develop the practical research skills and an ability to critically assess the quality of healthscience research	Introduction to Health Sciences Research	Interacti ve Lecturer	Workplace based assessment
S.NO	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	Describe the structural Organization of differentcomponents of a cell	Cell Introduction, Cell Organelles (Endoplasmic Reticulum, Golgi Apparatus, Ribosomes, Centrioles, Mitochondrion, Lysosomes, Peroxisomes & Nucleus)	**IL**	BCQs, SEQs,OSPE
2	Show basic structure of cell membrane	Cell Membrane: Composition & Structure	**IL**	BCQs, SEQs,OSPE
3-4	Describe components of cell surfacemodifications and junction complex	Cell surface modifications and celljunctions	**IL** **Practical**	BCQs, SEQs,OSPE
5	Differentiate between normal and abnormal celldivision and their consequences	Cell cycle,Mitosis and Meiosis cell divisions (Embryology)	**IL**	BCQs, SEQs,OSPEs
6-7	Describe the microscopic features of epithelialtissues and their Classification, explain their functional importance and their surface	Epithelium: Structure & Classificatio n	**Practical**	BCQs, SEQs, OSPE, Viva

	modification			
8-9	Discuss microscopic features of different types of glandular epithelium	Glandular Epithelium	**Practical**	
		PHYSIOLOGY		
10	Describe the Functional organization of differentcomponents of a cell	General structure of cell Composition, Cell organelles, Mitochondria, Lysosomes, Peroxisomes, Gogi apparatus, Endoplasmic Reticulum, Golgi complex, nucleus	**IL**	BCQs, SEQs
11-12		Sterilization, types and Methods	**Practical**	BCQs, SEQs
13	Describe types and process of transport acrossthe membrane and their effects.	Transportation Across Cell Membrane (Passive)Diffusion	**IL**	BCQs, SEQs
14	Explain the physiological mechanism and typesof transport (Active transport)	Transport Across Cell Membrane Protein Medicated	**IL**	BCQs, SEQs
		BIOCHEMISTRY		
15	Describe the structure of cell membrane. Explain the concept of Fluid Mosaic Model. Differentiate the structural and functional differences between membrane peripheral and integral proteins with examples and references.	Cell Membrane	**IL**	BCQs, SEQs, OSPE, Viva
16	Define pH: Discuss the hydrogen ion productionin the body. Define buffers: Explain the mechanism of action of buffers. Justify that bicarbonate buffer is the major buffer of the body. Discuss the clinical states of disturbed pH	PH and Buffer	IL / **Practica l**	BCQs, SEQs, OSPE, Viva
17	Describe structure of water Justify that water is universal solvent. Justify that water forms the medium of cytosol, ECM and blood. Discuss thedissociation of water and its contribution in pH.	Water Structure and dissociation		
	ORAL BIOLOGY & TOOTH MORPHOLOGY			
22	Describe terminologies related to cytoskeleton	Cytoskeleton	**IL**	BCQs, SEQs
23	Describe Intercellular junctions	Junctional complexes	**IL**	BCQs, SEQs

24	Describe Secretory products of fibroblast	Fibroblast	**IL**	BCQs, SEQs
25-26-A	Introduction to subject	Introduction to Oral Anatomy & Tooth Morphology-III	**Practical**	BCQs, SEQs
27-28-A		Introduction to Oral Anatomy & Tooth Morphology-IV	**Practical**	BCQs, SEQs
29-30-A		Introduction to Oral Anatomy & Tooth Morphology-V	**Practical**	BCQs, SEQs
	INFORMATION TECHNOLOGY			
31		**IT-2:**	**IL/Practical**	BCQs, SEQs
	INTEGRATED LEARNING			
32-33	Cell Structure, Chemistry and Function	**CBL-1&2:**	CBL	FEEDBACK

WEEK-III				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	Describe and differentiate the microscopicfeatures of connective tissues	Histology of Connective tissue, types of connective tissues: loose connective regular and irregular	**IL**	BCQs, SEQs, OSPE, Viva
2			**Practical**	
3	Discuss classification of cartilage, Demonstratehistological features of cartilage	Types of cartilage histological features of cartilage	**IL**	BCQs, SEQs, OSPE, Viva
4			**Practical**	
5	Describe the gross features of bone, Demonstratehistological features of bones	Classification of bones. Grossstructure of adult long bone. Parts of young long bone, Histology of bones	**IL**	BCQs, SEQs, OSPE, Viva
6			**Practical**	
7	Definition and classification of muscles	Muscle(General Features), Muscle (Histological features)	**IL**	BCQs, SEQs, OSPE, Viva
8			**Practical**	
PHYSIOLOGY				
9	Explain the physiological mechanism and typesof transport (Passive & Active)	Primary & Secondary Active Transport	**IL**	BCQs, SEQs, OSPE
10	Describe the membrane potential its development & maintenance of resting membrane potential.	Resting membrane potential, Graded potential	**IL**	BCQs, SEQs, OSPE

11	Explain Permeability of cell membrane; Explain the Propagation of action potential, and its ionic basis.	Factors affecting membrane potential/ Action Potential, Propagation ofaction potential	**IL**	BCQs, SEQs, OSPE
12	Describe the structure of actin and myosinfilaments, and sliding mechanism	Structure andfunction of skeletal muscle	**IL**	BCQs, SEQs, OSPE
BIOCHEMISTRY				
13	Define carbohydrates. Classify carbohydrates onthe basis of functional group and carbohydrate moiety	Carbohydrates	**IL/Practical**	BCQs, SEQs, OSPE, Viva
14	Describe the structure of mono, di and polysaccharides. Discuss the biomedical importance of mono, di and polysaccharides. Describe the functions of mono, di and polysaccharides	Carbohydrates	**IL/Practical**	BCQs, SEQs, OSPE, Viva
15	Explain isomerism in carbohydrates. Discuss biomedical importance Describe the monosaccharide derivatives (sugar acids, sugaralcohols, aminosugars and deoxysugars). Discuss the clinical importance of: monosaccharide derivative (GAGs, detoxification, cataract, diabetes mellitus,hexosamines, DNA)	Carbohydrates	**IL/Practical**	BCQs, SEQs, OSPE, Viva
16	Discuss the role of Biochemical aspects for themaintenance of homeostasis.	pH & Buffer	**IL/Practical**	BCQs, SEQs, OSPE
ORAL BIOLOGY & TOOTH MORPHOLOGY				
23	Describe terminologies	Introduction totooth Morphology	**IL**	BCQs, SEQs
24	Type of dentition	Nomenclature	**IL**	BCQs, SEQs
25	Describe FDI, Palmer, Universal Notation	Tooth numbering system	**IL**	BCQs, SEQs

INFORMATION TECHNOLOGY				
32		**Fnd-S1-IT-3:**	**IL/Practical**	BCQs, SEQs
33-34	Cell Structure, Chemistry and Function	**CBL-**	CBL	FEEDBACK

WEEK - IV				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	Recognize the role of Skin, fascia in support and protection	Introduction to Integumentary system: Microscopic anatomy of skin and fascia	**IL/**	SBQs, SEQs, OSPE
2			**Practical**	
3	Recognize the different parts of male and female reproductive system	Overview of Male and female reproductive	**IL**	SBQs, SEQs, OSPE
4	Describe the process of Gametogenesis Discuss ovulation and phases and outcomes of fertilization	Gametogenesis, Ovulation & Fertilization	**IL**	SBQs, SEQs, OSPE
PHYSIOLOGY				
	NO CLASS			
BIOCHEMISTRY				
5	Importance Describe the monosaccharide derivatives (sugar acids, sugar alcohols, aminosugars and deoxysugars). Discuss the clinical importance of monosaccharide derivative(GAGs, detoxification, cataract, diabetes mellitus, hexosamines, DNA)	Carbohydrates	**IL**	BCQs, SEQs, OSPE
6	Describe the structure and functions of nucleicacid and their relationship in central dogma. Define nucleic acids Discuss the structure and types of nucleic acids DNA and RNA. Differentiate between DNA and RNA. Define central dogma and justify its relation with livingstate.	Nucleic Acid	**IL**	BCQs, SEQs, OSPE, Viva
7	Describe nitrogenous bases present in the nucleicacids. Describe the structure of nucleoside and nucleotides. Discuss the functions of nucleotides (energy carrier, coenzymes, electron carrier, metabolite activator, nucleic acids). Explain polymerization of nucleotides via 3'-5' phosphodiester bonds. Justify that the nucleotide polymers have a direction from 5' to 3'.	Nucleic Acid	**IL**	BCQs, SEQs, OSPE, Viva

8	Define replication. List the requirements for replication. Explain the process of replication. Justify the need for RNA primer in replication. Differentiate the process of replication on leading and lagging strand. Justify that replication is a flawless process (proofreading activity). Explain the processes of repair in DNA replication and relate this with disease processes like xeroderma pigmentosa. Differentiate the replication of DNA in pro andeukaryotes	Replicationand Repair (?Protein)	**IL**	BCQs, SEQs, OSPE, Viva

ORAL BIOLOGY & TOOTH MORPHOLOGY				
21	Division into Thirds, Line angles and Point angles	Landmarks of teeth	**IL**	BCQs, SEQs
22	Importance of primary teeth	Deciduous dentition	**IL**	BCQs, SEQs
23	Major contrast between primary and permanent tooth	Deciduous dentition	**IL**	BCQs, SEQs
26-A	Describe the following dental tissues: enamel, dentin, pulp, cementum and periodontalligament.	Tooth andsupporting tissues	**IL/Practical**	BCQs, SEQs, Psychomotor Assessment
27-A	Describe the weight and volume composition ofthose dental tissues; name the cellular elements involved and the blood and nerve supply.	Structure ofcells in dental tissues	**IL/Practical**	BCQs, SEQs, Psychomotor Assessment
28-A	Describe the type and distribution of cells in the dental pulp, including age changes, structure andultrastructure of odontoblasts.	Fine structures present in cells ofdental tissues	**IL/Practical**	
29-A	Name all the cells of the pulp and describe the blood vessels and their interaction with nerves and relationship to tissue fluid pressure.	Blood andnerve supply of dental tissues	**IL/Practical**	

INFORMATION TECHNOLOGY				
30		**Fnd-S1-IT-4:**	**IL/Practical**	BCQs, SEQs
RESEARCH METHODOLOGY				
31	Apply basic statistical concepts commonly usedin Health and Medical & Dental Sciences.	Introductionto Biostatistics	**IL**	**Research Protocol Writing**
32-33	Cell Structure, Chemistry and Function	**CBL-5&6:**	**CBL**	**FEEDBACK**

WEEK-V				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	Enumerate the events of first week of development	First week of development (cleavage and blastocyst formation and implantation)	**IL**	SBQs, SEQs, OSPE
2	Enumerate the events of second week ofdevelopment	**S**econd weekof development (Formation of amniotic cavity, amnion, bilaminar embryonic disc, yolk sac, chorionic sac and primary chorionic villi)	**IL**	SBQs, SEQs, OSPE
3	Explain main events of third week ofdevelopment	Formation of primitive streak, Gastrulation and notochord, Formation of neural tube and somites	**IL**	SBQs, SEQs, OSPE
4	Describe the process of folding of embryo, Formation of intra embryonic coelom and itsoutcomes	The process of folding of embryo, Formation of intra embryonic coelom and itsoutcomes	**IL**	SBQs, SEQs, OSPE
5	Enlist the derivatives of three germ layers	Derivatives ofgerm layers and neural crest cells	**IL**	SBQs, SEQs, OSPE
6	Explain the interchange of substances between maternal and fetal blood by applying the knowledge of structure and functions of placenta and fetal membranes	Placenta andfetal membranes	**IL**	SBQs, SEQs, OSPE
7	Define teratogenesis and the basic principles of teratogenesis. Categorize the common teratogens	Teratogenesis	**IL**	SBQs, SEQs, OSPE
PHYSIOLOGY				
	NO CLASS			
BIOCHEMISTRY				
8	Define transcription. Define transcription factors. Describe the properties of RNA polymerase. Differentiate between coding and non-coding strand of DNA. Explain the process of transcription. Differentiate the process of transcription in pro and eukaryotes. Define posttranscriptional modification. Define introns and	Transcriptionand Post transcriptional modification	IL	BCQs, SEQs, OSPE

	exons. Describe the post-transcriptional modifications of the primary transcript with theirsignificance. Discuss the clinical significance of the abnormal post-transcriptional modifications.			
9	Define and Describe characteristics of genetic code. Justify that language of nucleotides changeto language of amino acids to exhibit phenotype. Define mutations and its types (missense, nonsense, silent, frameshift, nonframeshift, deletions and insertions). Define protein synthesis as the process of translation. Explain the steps of translation. Discuss regulation of translation. Describe the post-translational modification of proteins with examples	TranslationMutations	**IL**	BCQs, SEQs, OSPE, Viva
10	Define the term regulation Recognize that all humans carry the same set of genes yet they are different from each other. Justify that the genome is selectively expressed in each individual influenced by various genetic and environmental factors. Describe the structure ofan operon. Explain the process of regulation of gene expression both in pro and eukaryotes	Regulation ofGene Expression	**IL**	BCQs, SEQs, OSPE, Viva

ORAL BIOLOGY & TOOTH MORPHOLOGY				
17	Form and Function	Orofacial complex	**IL**	**BCQs, SEQs**
18	Embrasure	Orofacial complex	**IL**	**BCQs, SEQs**
19	Contact areas of tooth	Orofacial complex	**IL**	**BCQs, SEQs**

INFORMATION TECHNOLOGY				
26		**IT-5:**	**IL/Practical**	BCQs, SEQs

RESEARCH METHODOLOGY				
28	To disentangle the data received and make validinferences that can be used to solve problems in public health.	Types of Research Variables	**IL**	Research Protocol Writing
29	Use basic analytical techniques to generateresults.	Central Tendencies & Measuresof Dispersion	**IL**	Research Protocol Writing
30	To learn the basics of methodology (samplingtechniques).	ResearchMethodology	**IL**	Research Protocol Writing
31	How to search the literature online	LiteratureReview	**IL**	Research Protocol Writing

WEEK VI				
S.NO	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	Discuss the different parts of respiratory system	AnatomicalBasis of Respiratory System-I	**IL**	SBQs, SEQs, OSPE
2		AnatomicalBasis of Respiratory System-II		
				PHYSIOLOGY
3	Briefly describe the function of resp: passages with reference to thoracic cage & muscles of respiration. Discuss transpulmonary pressure and its changes during respiration	Pulmonary Ventilation: Mechanism of Resp	**IL**	BCQs, SEQs
4-5		Record Resp Rate, Standing	**Practical**	BCQs, SEQs, OSPE, Viva
6	List the pul. vol& capacity with their normal values & significance. Determine functional residual capacity, residual volume & total lung capacity. Define lung compliance & list factorsaffecting lung compliance	PulmonaryCapacities: Volumes, Dead Space, Lung Compliance	**IL**	BCQs, SEQs
7-8	To estimate the normal respiratory rate in sitting position.	Record Resp Rate, Sitting	**Practical**	BCQs, SEQs, OSPE, Viva
9	Define respiration unit & respiration membrane • Describe mechanics of diffusion across respiration membrane & factors affecting diffusion • List partial pressure of respiration gases in atmosphere, humidified, alveolar & expired air • Briefly described the diffusing capacity of O2 and CO2	Transport ofrespiratory gases	**IL**	BCQs, SEQs
10-11	To determine the respiratory rate, duringcoughing and deglutition.	Record Resp Rate, Coughing &Deglutition	**Practical**	BCQs, SEQs, OSPE, Viva
12	List the respiratory centers & their effect on regulation of respiration • Describe the chemicalcontrol of respiration (chemo receptors)	Regulation of Respiration	**IL**	BCQs, SEQs
13-14	To estimate the normal pulse rate	To determine the pulse rate	**Practical**	**BCQs, SEQs, OSPE, Viva**
14-A	Respiration	**-CBL-5:**	CBL	FEEDBACK
	BIOCHEMISTRY			
15	Define bioenergetics. Define energy, energy carriers and low, moderate and high energy	Process ofEnergy Flow	**IL**	BCQs, SEQs, OSPE, Viva

	compounds. Differentiate between oxidation andreduction. Discuss the methods of electron flow from substrate to oxygen (Hydronium ion, hydrogen atom, free electrons and oxygen). Enumerate the substrates used for energy. Justifythe role of mitochondria in generation of energy (structure, enzymes in membranes and matrix , own DNA). List the enzymes of electron transport chain in the increasing redox potential order. Justify that electron transport chain is also termed as respiratory chain. Explain that oxidation is linked with phosphorylation of ATP			
16	Define lipids Classify lipids. Describe the functions of various classes of lipids.	Lipids	**IL**	BCQs, SEQs, OSPE, Viva
17	Justify that cell membrane is made up of phospholipids. Justify that milk is needed for post natal development of brain (phospholipids,glycolipids, sphingolipids).	Lipids	**IL**	BCQs, SEQs, OSPE, Viva
18	Discuss the clinical significance of lipids (obesity, diabetes mellitus, cardiovascular diseases, vitamin D deficiency, hypertension, storage diseases)	Lipids	**IL**	BCQs, SEQs, OSPE, Viva

ORAL BIOLOGY & TOOTH MORPHOLOGY				
21	Dates of eruption of teeth		**IL**	BCQs, SEQs
22	Types of permanent teeth	Permanent Dentition	**IL**	BCQs, SEQs
23	Dates of calcification of Anterior teeth	Anterior teeth	**IL**	BCQs, SEQs
24-A	Create the ideal dental anatomy of permanentCanine by drawing on graph book(Maxillary and Mandibular)	Canine	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
25-A	Demonstrate the knowledge about ideal morphology of First pre-molar (Maxillary and Mandibular)	First pre-molar	20 min Lecture& Practical	
26-A	Create the ideal dental anatomy of permanentFirst pre-molar by drawing on graph book(Maxillary and Mandibular)	First pre-molar	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
INFORMATICS				
30		**IT-6:**	**IL** / Practical	BCQs, SEQs
RESEARCH METHODOLOGY				
31	Exploring the different search engines (research data bases). Be able to access appropriatedatabases.	LiteratureReview	IL	Protocol Writing

WEEK-VII				
S.NO	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	Discuss the different parts of cardiovascularsystem	AnatomicalBasis of cardiovascular system	**IL**	SBQs, SEQs, OSPE
2	Discuss the components of vascular system	Blood Vascular System	**IL**	SBQs, SEQs, OSPE
3	Overview of lymphoid system	Lymphoid System	**IL**	SBQs, SEQs, OSPE
4-5	Histological features of vessels, capillaries and lymphatic	Histological features of vessels,capillaries and lymphatic	**Practical**	SBQs, SEQs, OSPE
PHYSIOLOGY				
6	To discuss the cellular components of blood, To discuss the various stages of RBC'S formation To describe the structure & functions of RBC& its membrane	Composition &Function of Blood & RBC	**IL**	BCQs, SEQs
7-8	Perform blood sampling, Identify different bloodgroups	Venous Blood Sampling Blood Grouping	**Practical**	BCQs, SEQs

9	To describe the process of leukocyte genesis. Enlist various types of granulocytes and agranulocytes, their functions& normal values.	White BloodCells Genesis & Function	**IL**	BCQs, SEQs
10-11	Determine hemoglobin concentration (Sahli's method)	Hb%	**Practical**	BCQs, SEQs
12	To understand the overall organization of immune system. To understand cell mediated immunity and humoral immunity, Active and passive immunity.	Immunity,Innate & Acquired	**IL**	BCQs, SEQs
13-14	Estimate bleeding time, clotting time (BT & CT)	BleedingTime, Clotting Time	**Practical**	BCQs, SEQs
15	To define Agglutinogen, agglutinin, and agglutination & what takes place when incompatible blood types are mixed. Identify different blood groups	Blood Groups	**IL**	BCQs, SEQs
BIOCHEMISTRY				
16	Define fatty acids. Describe the structure of fattyacids. Classify fatty acids on the basis of saturation and nutrition. Describe the functionsof fatty acids. Discuss the clinical significance of fatty acids in health and disease	Fatty Acids	**IL / Practical**	BCQs, SEQs, OSPE, Viva
ORAL BIOLOGY & TOOTH MORPHOLOGY				
17	Morphology of the permanent Maxillary Central incisors	Permanent maxillary incisors	**IL**	BCQs, SEQs
18	Morphology of the permanent Maxillary lateral incisors	Permanent maxillary incisors	**IL**	BCQs, SEQs
19	Morphology of the permanent Mandibularcentral incisors	Permanentmandibular incisors	**IL**	BCQs, SEQs
20	Create the ideal dental anatomy of permanent molar teeth by drawing on graph book(Maxillary And Mandibular)	Molar teeth	**20 min IL & Practical**	BCQs, SEQs, psychomotor Assessment
21	Describe the anatomy and function of the muscles and ligaments involved in mastication.	Ligaments ofTMJ	**20 min IL & Practical**	
22	Describe the anatomy and function of the temporomandibular joint.	Bones involved in joint (TMJ)	**20 min IL & Practical**	BCQs, SEQs, psychomotor Assessment
23	Contrast isometric and isotonic musclecontraction.	Musclemovements	**20 min IL & Practical**	

24	Describe the articular surfaces of the TMJ eminence and Mandibular condyle and contrastthese to surfaces in limb joints.	Comparisonof TMJ with other joints	**20 min IL & Practical**	BCQs, SEQs, psychomotor Assessment
25	Describe how the medial pterygoid muscle could influence an impression of the upper dental arch. Contrast the difference in function of the superior and inferior lateral pterygoid muscles.	Muscle Influencing Dental Impressions	**20 min IL & Practical**	

INFORMATION TECHNOLOGY			
		IL / Practical	BCQs, SEQs
RESEARCH METHODOLOGY			
To learn the measures of dispersion, P-value,hypothesis testing	BasicBiostatistics	**IL**	Workplace based assessment
Blood & Cardiovascular System	**CBL-6:**	CBL	FEEDBACK

WEEK-VIII				
S.NO	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	Describe the chambers, blood supply and nerve supply of heart	Heart	**IL**	SBQs, SEQs, OSPE
PHYSIOLOGY				
2	Describe the Physiologic anatomy of heart and properties of cardiac muscles. Explain the phenomenon of generation of action potential in cardiac muscle & process of excitation contraction coupling.	Properties ofCardiac Muscles	**IL**	BCQs, SEQs
3	Describe conducting system of heart & role ofpacemaker in maintaining cardiac rhythm. Explain neural regulation of heart through autonomic nervous system & its effect on cardiacrate (chronotropic), force of contraction (ionotropic), & velocity of conduction (dromotropic).	ConductiveSystem of Heart	**IL**	BCQs, SEQs
4	Describe events of cardiac cycle & associatedevents (pressure changes, heart sound generation, & effect on volume of heart chambers & vessels)	Cardiac Cycle	**IL**	BCQs, SEQs
5	Define cardiac output and factors regulating cardiac output. Explain preload/after load & its effect on heart	Cardiac Output& Venous Return	**IL**	BCQs, SEQs
6	To describe the four-basic mechanisms of Hemostasis. To explain the general mechanism of blood coagulation. To enlist the clotting factors. To describe the role of clotting factors incoagulation.	Hemostasis & Coagulation	**IL**	BCQs, SEQs

	Discuss the steps involved in intrinsic and extrinsic pathway for coagulation			
7-8	Record blood pressure and explain changes inarterial pressure in different body positions (lying, upright, standing)	BloodPressure Sitting Standing	**Practical**	
BIOCHEMISTRY				
	NO CLASS			
ORAL BIOLOGY & TOOTH MORPHOLOGY				
18	Morphology of the permanent Mandibular lateralincisors	Permanentmandibular incisors	**IL**	BCQs, SEQs
19	Comparsion of maxillary and mandibular incisors	Difference of incisors	**IL**	BCQs, SEQs
20	Morphology of the permanent Canines	Permanent maxillary canine	**IL**	BCQs, SEQs
21-A	Analyze proper dental occlusion and develop skills to identify ideal occlusion for permanent teeth.	Occlusion	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
22-A	Describe intra-arch alignment of the dentition,including concepts of the Curve of Spee, the Curve of Wilson, arch length, and arch width.	Intra-archrelationship	20 min Lecture& Practical	
23-A	Describe inter-arch alignment of the dentition, including concepts of supporting centric cusps; vertical dimension of occlusion; guiding or non- centric cusps; maximum intercuspal position (ICP); retruded contact position (RCP); posterior crossbite; Angle's Class I, II (Division 1 and 2) and IIIclassification of molar relationships; overjet; overbite; deep bite; and anterior open bite.	Cusp to cuspRelationship	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
24-A	Describe anterior guided, group function, and balanced occlusion.	Balanced occlusion	20 min Lecture & Practical	
25-A	Describe the concept of "mutually protectedocclusion."	Mutuallyprotected occlusion	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
26-A	Explain what is meant by balancing (non- working side) contacts and functional (working side) contacts and name the surfaces of the teethin contact. Describe mandibular movements during chewing	Mandibularmovements	20 min Lecture& Practical	
INFORMATION TECHNOLOGY				

27			**IL**	BCQs, SEQs
RESEARCH METHODOLOGY				
28	Evaluate study design and measures for validityand reliability.	Basic Research	**IL**	Proposal Writing
29	To identify the overall process of designing aresearch study from its inception to its report		**IL**	Proposal Writing
30	Understand the literature search cycle. Be able to identify appropriate search terms fortheir topic or research question.	Literature search	**IL**	Proposal Writing
31-32		**CBL-7:**	CBL	FEEDBACK

WEEK-IX				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
ANATOMY				
1	Discuss the different parts of Gastrointestinalsystem	AnatomicalBasic of the Gastrointestinal System-II	**IL**	SBQs, SEQs, OSPE
2		AnatomicalBasic of the Gastrointestinal System-II		
3	Describe the overview of Endocrine / Exocrinesystem	AnatomicalBasis of Endocrine / Exocrine System	**IL**	SBQs, SEQs, OSPE
PHYSIOLOGY				
4	Differentiate between slow wave and spike potential Differentiate between mesenteric	Basic Physiological Functionality of GIT	**IL**	BCQs, SEQs
5	andsubmucosal plexus. Describe the secretion of saliva and its nervous regulation	Basic Physiological Functionality ofGIT	**IL**	BCQs, SEQs
6	Describe characteristics of the gastric secretions. Describe the functions of HCl and other constituents of gastric secretions Discuss the mechanism of synthesis and secretion of HCl from gastric mucosa	HCL Secretion, Composition, Function & Regulation	**IL**	BCQs, SEQs
7	Describe the functional types of movements in the gastrointestinal tract	Movement of Small & Large Intestine	**IL**	BCQs, SEQs
8	Explain the structure and functions of	PhysiologicalBasis of	**IL**	BCQs, SEQs

	allendocrine organs in the body. Define the termsendocrine, paracrine and autocrine.	Endocrine System		
9	Describe the concept of hormone receptors andsecond messenger in hormone action. Describe the synthesis, functions and regulations of the hormones	PhysiologicalBasis of Endocrine System	**IL**	BCQs, SEQs
BIOCHEMISTRY				
	NO CLASS			
ORAL BIOLOGY & TOOTH MORPHOLOGY				
14	Composition, pH, volume, function of saliva	Saliva	**IL**	BCQs, SEQs
[1]15	Describe taste pathway along with its neurological control	Neurological control of saliva	**IL**	BCQs, SEQs
16	Describe clinical condition related to quantity of saliva	Xerostomia	**IL**	BCQs, SEQs
17-A	Describe the general differences between thepermanent and deciduous teeth.	Differencesbetween permanent and deciduous teeth	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
18-A	Describe each surface of the crown and root of all deciduous teeth by describing, identifying from a diagram, any of the following features: 1. Structural entities such as grooves, pits, ridges, cusps, or fossae. 2. Relative dimensions and shapes root numbers, location, and contours. 3. Compare any of these features between the various deciduous teeth.	Deciduousteeth surface markings	20 min Lecture& Practical	
19-A	Identify which deciduous tooth is described orillustrated, considering the following: classification, arch, or right or left.	Identifydeciduous teeth	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
20-A	Determine the correct universal number for agiven diagram, model or sample tooth, or description of any deciduous tooth.	Tooth numbering system	20 min Lecture& Practical	

21-A	Correctly identify the general outline, shape, or dimensions of the pulp chamber, as well as normal numbers and dimensions of pulp canals,for any of the deciduous teeth.	Root canalmorphology	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
22-A	List the normal pattern or order of eruption forthe deciduous teeth.	Sequence ofdeciduous tooth eruption	20 min Lecture& Practical	
INFORMATION TECHNOLOGY				
23			**IL** / Practical	BCQs, SEQs
RESEARCH METHODOLOGY				
24-25	Learn to use scientific apparatus. Develop intuition and deepen understanding of concepts.	Basic Laboratory techniques	**IL**	Workplace based assessment
26-27	Understand research design, and be able to choose rigorous and practical research methodsto address a problem focused research question(s)	What is research proposal andhow to write it?	**IL**	Workplace based assessment
28-29	Students should be familiar with the steps involved in identifying and selecting a good instrument to use in a study. Be able to developresearch questions and hypotheses	What are the components of proposal writing?	**IL**	Workplace based assessment
30-31	Be able to structure, present and write a researchproposal, using high level written and verbal communication skills	Presentation of Research Proposal	**IL**	Workplace based assessment
32-33	Gastrointestinal & Secretory System (Endocrine/ Exocrine)	**Fnd-S1-CBL-8:**	**CBL**	FEEDBACK

WEEK-X ASSESSMENT				
1	MODULE EXAM FORMMATIVE	BCQS ,SEQS ,OSPE, VIVA		
	MODULE EXAM FORMMATIVE	BCQS ,SEQS ,OSPE, VIVA		

ORAL BIOLOGY / FIRST YEAR BDS / MODULE-2				
S.No.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
Theme-1: OSTEOLOGY OF THE CRANIOFACIAL REGION/ FRACTURES OF SKULL				
WEEK-I				
1	Morphology of the permanent Mandibular canine	Permanent Mandibular Canine	**IL**	BCQs, SEQs
2	Difference between Morphology of PermanentMaxillary and Mandibular canine	Difference of Canine	**IL**	BCQs, SEQs
WEEK-II				
3	Describe histology and function of osteoblast, osteocyte and osteoclasts	Cell of Bone	**IL**	BCQs, SEQs
4	Discuss histology of compact and spongy bonein terms of lamellae, Haversian and volkman's canals	Histology of Bone	**IL**	BCQs, SEQs
5	Describe and identify histological changes andfeatures of intramembranous and intracartilaginous ossification	Ossification of Bone	**IL**	BCQs, SEQs
WEEK-III				
6	Describe remodeling phases in cortical and trabecular bone	Bone Turnover	**IL**	BCQs, SEQs
7	Morphology of permanent Maxillary First premolar	Permanent Maxillary premolar	**IL**	BCQs, SEQs
8	Morphology of permanent Maxillary Second premolar	Permanent Maxillary premolar	**IL**	BCQs, SEQs
WEEK-IV				
9	Morphology of permanent Mandibular first premolar	Permanent Mandibular premolar	**IL**	BCQs, SEQs
WEEK-V				
10	Morphology of permanent Mandibular second premolar	Permanent Mandibular premolar	**IL**	BCQs, SEQs
11	Difference of Morphology of Maxillary andMandibular Premolars	Difference between Maxillary andMandibular Premolars	**IL**	BCQs, SEQs
12	Describe temporomandibular joint in terms ofits development, histology of its components	Histology ofTMJ	**IL**	BCQs, SEQs
WEEK-VI				

13	Describe articular disk in terms of its shape, location, histology location, function, vascularity along with their attachment	Histology of Articular Disk	**IL**	BCQs, SEQs
14	Describe attachment, function of joint capsule and synovial membrane	Bio Mechanics of TMJ	**IL**	BCQs, SEQs
15	Describe temporomandibular joint in terms ofits clinical significance (dislocation, articular disk displacement, TMJ Dysfunction)	Clinical relevance of TMJ	**IL**	BCQs, SEQs
WEEK-VII				
16	Discuss central sensitization of Trigeminalnerve	Clinical relevance of Trigeminalnerve	**IL**	BCQs, SEQs
17	Revision Class	**Revision Class**	**IL**	

PHYSIOLOGY / FIRST YEAR BDS / MODULE-II				
S. No.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
WEEK-I				
1	• Definition & Organization of the nervoussystem • To understand about Physiological divisionof nervous system • Determine Levels of nervous system	Organization ofNervous system – overview	**IL**	BCQs, SEQs, Structured Viva
2	• Discuss Structure of neuron • Define Myelin sheath • Define Salutatory conduction • Regeneration of nerve fiber • Discuss functions of neurons	Neuronsand its functions	**IL**	BCQs, SEQs, Structured Viva
3-4	• Define Synapse • Give Types of synapses • Determine Structure of synapses • Define Synaptic transmission	Synapses and its typesand neural integration	**IL**	BCQs, SEQs, Structured Viva
WEEK-II				
5-6	• Define Plan of sensory system • What are Modalities of sensation and itsphysiology • Define Receptors & Its types	Sensorysystem, types and properties	**IL**	BCQs, SEQs, Structured Viva
7	• Define types of nerve fiber • Morphological and physiologicalclassification	Classification of nervefiber	**IL**	BCQs, SEQs, Structured Viva

8-9	• Discuss Dorsal column laminiscal system, itslocation, receptors, tracts and sensory modalities • Discuss Antero-lateral system (spino-thalamic) & its location, receptors, tracts andsensory modalities	Ascending pathways, Sensory pathways, Dorsal column, Anteriolateral column	**IL**	BCQs, SEQs, Structured Viva
WEEK-III				
10	• Define Pain Types • Which Pathways are involved • Which are main Sensory areas	Pain sensation	**IL**	BCQs, SEQs, Structured Viva
11	• Define Analgesic system of brain & its physio • What is Referred Pain? • Differentiate btw somatic & visceral pain • Define Methods of analgesia	Analgesic system ofbrain	**IL**	BCQs, SEQs, Structured Viva
WEEK-IV				
12	• To explain the motor function of spinal cord	Spinal cord, reflexes, reflex arc	**IL**	BCQs, SEQs, Structured Viva
	• To explain the structure & function of muscle spindle • To determine the muscle, stretch reflex & its clinical applications. • To explain the mechanism of Golgi tendon reflex & its significance in controlling motor activities.			
13	• To determine the mechanism of flexor reflex, crossed extensor reflex, scratch reflex, postural & locomotive reflexes. • To define spinal cord transection & spinal shock (Brown Sequard syndrome)	Spinal cord, reflexes, reflex arc, reflex action.	**IL**	BCQs, SEQs, Structured Viva
14	• Describe Scheme of motor activity & Motor areas of the cerebral cortex • Define Descending pathways • Describe Cerebellum & Basal ganglia & Spina • Give functions of the motor areas	Motor system	**IL**	BCQs, SEQs, Structured Viva
15	• Give the special features of cerebellum • Name its physiological divisions & their function • Explain the internal neuronal circuit of cerebellum and its functioning • Describe the features of cerebellar lesions	Function and disorders of Cerebellum.	**IL**	BCQs, SEQs, Structured Viva
16	• Name the basal ganglia • List the functions of basal ganglia • Describe the functions of caudate & putamen	Basal nuclei and its' diseases	**IL**	BCQs, SEQs, Structured Viva

	• Describe the lesions of basal			
17	• Define structure & function of Cerebrospinal fluid (CSF) • Define structure & function of Blood brain barrier (BBB) • How brain gets nutrition	Cerebrospinal fluid	**IL**	BCQs, SEQs, Structured Viva
WEEK-V				
18	• To perform superficial & deep reflexes andits significance in different neurological disorders • To perform corneal reflexes • To perform abdominal reflexes • To perform plantar reflexes	Superficial reflexes	Practical	BCQs, SEQs, OSPE, Viva
19-20	• To perform superficial deep reflexes and its significance	Deep reflexes	Practical	BCQs, SEQs, OSPE, Viva
WEEK-VI				
	Nil			
WEEK-VII				
21	Revision Class	**Revision Class**	Interactive Lecture	

ANATOMY / FIRST YEAR BDS / MODULE-II				
S. No.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
Theme-1: OSTEOLOGY OF THE CRANIOFACIAL REGION/ FRACTURES OF SKULL				
WEEK-I				
1	* Discuss the overview of skull * Describe the external features of skull	External features of skull	**IL**	BCQs, SEQs, OSPE, Viva
2	* Describe the different views of skull * Discuss the bones that form norma verticalisand occipitalis * Identify the different sutures	Norma vertical's and occipitals	**IL**	BCQs, SEQs, OSPE, Viva
3	* Discuss the bones that form norma frontalis * Differentiate the bones that form normafrontalis	Norma frontalis	**IL**	BCQs, SEQs, OSPE, Viva
4	* Describe the bones that are visible in the lateral view of skull	Norma laterals	**IL**	BCQs, SEQs, OSPE, Viva

5	* Describe the boundaries of temporal fossaand infratemporal fossa * Discuss the connections of temporal fossaand infratemporal fossa * Differentiate the contents of temporal fossaand infratemporal fossa	Temporal fossa and infratemporalfossa	**IL**	BCQs, SEQs, OSPE, Viva
6	* Describe the boundaries of Pterygopalatinefossa * Discuss the contents of pterygopalatine fossa * Identify the openings/ connections ofpterygopalatine fossa	Pterygopalatine fossa	**IL**	BCQs, SEQs, OSPE, Viva
7	* Define the mandible * Discuss the parts of mandible * Describe the temporomandibular joint	Mandible & temporomandibular joint	**IL**	BCQs, SEQs, OSPE, Viva
8	* Discuss the bones of skull * Identify the different bones of skull	-Model study	Group Discussion	BCQs, SEQs, OSPE, Viva
WEEK-II				
9	* Define the boundaries of norma basalis * Identify the different bones forming normabasalis	Norma basalisI	**IL**	BCQs, SEQs, OSPE, Viva
10	* Identify the anatomical land marks on the norma basalis	Norma basalis II	**IL**	BCQs, SEQs, OSPE, Viva
11	* Discuss the different views of skull	Model study	Group Discussio n	
12	* Define the pharyngeal apparatus * Discuss the development of pharyngeal	Introduction to pharyngeal apparatus	**IL**	BCQs, SEQs, OSPE, Viva
14	* Discuss the development of mandible	Development of mandible	**IL**	BCQs, SEQs, OSPE, Viva
16	* Define the cranial cavity * Describe the division of cranial cavity	Ana-G31-Cranial Cavity-I	**IL**	BCQs, SEQs, OSPE, Viva
18	* Identify the anatomical land marks seen within the cranial cavity	Ana-G32-Cranial cavity II	**IL**	BCQs, SEQs, OSPE, Viva

Theme-2: MUSCULATURE OF CRANIOFACIAL REGION/ SCALP INJURY/ FACIAL MUSCLE INJURY/INJURY TO THE MUSCLES OF MASTICATION				
WEEK-III				
19	* Define the scalp * Discuss the different layers of scalp	Scalp	**IL**	BCQs, SEQs, OSPE, Viva
20	* Discuss the muscles of face	Muscles offacial	**IL**	BCQs, SEQs,

	* Identify the different muscles of facial expression	expression		OSPE, Viva
21	* Describe the muscles of mastication * Discuss the action of different muscles of mastication	Muscles of mastication	**IL**	BCQs, SEQs, OSPE, Viva
22	* Discuss the development of pharyngeal arches * Identify the derivatives of different pharyngeal arches	Derivatives of pharyngeal arches	**IL**	BCQs, SEQs, OSPE, Viva
23	* Define the pharyngeal pouches and cleft * Discuss the derivatives of pharyngeal pouches and clefts	Derivatives of pharyngeal pouches and clefts	**IL**	BCQs, SEQs, OSPE, Viva
24	* Identify the different muscles of face on model * Identify the different muscles of mastication on model	Modelstudy	Group Discussion	
Theme-3: VASCULAR SUPPLY OF THE CRANIOFACIAL REGION & MENINGES/ DANGER AREA OF FACE/HEMORRAGE (Extradural, Subdural)				
WEEK-IV				
26	Define the origin and division of external carotid artery Discuss the branches of external carotid artery	External carotid artery and its branches	**IL**	BCQs, SEQs, OSPE, Viva
27	Describe the different parts of maxillary artery with origin and division Discuss the branches of maxillary artery	Maxillary artery and its branches	**IL**	BCQs, SEQs, OSPE, Viva
28	Discuss the facial artery Identify the different branches of facial artery within the face	Facial arteryand its branches	**IL**	BCQs, SEQs, OSPE, Viva
29	Identify the Ophthalmic artery Discuss the branches of Ophthalmic artery	Ophthalmic artery	**IL**	BCQs, SEQs, OSPE, Viva
30	Describe the formation of facial vein Discuss the connections of facial vein	Facial vein and its connections	**IL**	BCQs, SEQs, OSPE, Viva
31	Discuss the formation of external jugular vein,retro mandibular vein and internal jugular vein Identify the tributaries of veins	External jugularvein, retro mandibular vein, anterior jugular vein, internal jugular vein	**IL**	BCQs, SEQs, OSPE, Viva
WEEK-V				
32	Define the location of superficial and deep cervical lymph nodes Discuss the drainage areas of superficial and deep cervical lymph nodes	Superficial cervical andDeep cervical lymph nodes	**IL**	BCQs, SEQs, OSPE, Viva

33	Describe the trigeminal nerve	Ana-G46-Trigeminal nerve and its Branches I	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the branches of trigeminal nerve			
34	Discuss the sensory supply of trigeminal nerve	Trigeminal nerve and its branches II	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the motor supply of trigeminal nerve			
35	Describe the facial nerve	Facial nerveand its branches in the face	**IL**	BCQs, SEQs, OSPE, Viva
	Identify the branches of facial nerve within the face			
36	Define the parasympathetic ganglion	Parasympathetic	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the otic and ciliary ganglion			
37	Describe the pterygopalatine ganglion and its connections	Parasympath eticganglion II	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the submandibular ganglion and its connections			
38	Describe the meninges	Meninges I	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the different types of meninges			
	Discuss the dural partitions and its attachment			
39	Define the dural venous sinuses	Meninges II	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the dural venous sinuses and its drainage			
	Theme-4: VISCERA OF THE CRANIOFACIAL REGION			
	WEEK-VI			
40	Describe the bony orbit	-Bony orbit	**IL**	BCQs, SEQs, OSPE, Viva
	Identify the different bones that form bony orbit			
41	Define the lacrimal apparatus	Lacrimal apparatus	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the components of lacrimal apparatus			
42	Discuss the layers of eye ball	-Eye ball I	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the neurovascular bundle of eye ball			
43	Discuss the model of eye ball in groups	Eye ball (model study)	**IL**	
	Identify the different layers of eye ball			

44	Describe the parts of ear	Ear I	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the external and middle ear			
45	Describe the different components of inner ear	Ear II	**IL**	BCQs, SEQs, OSPE, Viva
	Identify the different parts of ear on model			
46	Define the nose	Nose I	**IL**	BCQs, SEQs, OSPE, Viva
	Discuss the parts of nose			
47	Discuss the boundaries of nasal cavity	Nose II	**IL**	BCQs, SEQs, OSPE, Viva
	Identify the different vessels of nose			
WEEK-VII				
48	Describe the development of nose	Development of nose	**IL**	BCQs, SEQs, OSPE, Viva
49	Identify the epithelium that lines the nasal cavity	H21&22-Microscopic features ofnasal cavity **(Practical)**	Practical	
	Discuss the histological features of nasal cavity			
50	Revision Class	**Revision Class**	**IL**	BCQs, SEQs, OSPE, Viva

BIOCHEMISTRY / FIRST YEAR BDS / MODULE-II				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
WEEK-I				
1	Define proteins. Describe the classification ofamino acids.	Proteins-I	**IL /Practical**	BCQs, SEQs, OSPE, Viva
2	Classify proteins on the basis of shape and size, solubility and physical properties andfunctional properties.	Proteins-II	**IL / Practical**	BCQs, SEQs, OSPE, Viva
WEEK-II				
3	Describe the general properties of proteins. Describe the color reactions of Proteins	Proteins-III	**IL / Practical**	BCQs, SEQs, OSPE, Viva
4	Describe the structural organization of proteins.Define denaturation of proteins.	Proteins-IV	**IL /Practical**	BCQs, SEQs, OSPE, Viva
WEEK-III				

5	Define enzymes and related terms (coenzyme,cofactor, holoenzyme, apoenzyme, prosthetic group, active site, allosteric site, specificity, enzyme activity). Describe the structure of enzymes. Describe the classification of enzymes.	Enzymes-I	**IL / Practical**	BCQs, SEQs, OSPE, Viva
6	Describe the mechanism of action of enzymes. Define energy of activation and energy barrier. Explain factors affecting enzyme activity.	Enzymes -II	**IL / Practical**	BCQs, SEQs, OSPE, Viva
WEEK-IV				
	Nil			
WEEK-V				
7	Explain enzyme inhibition.	Enzymes-III	**IL / Practical**	BCQs, SEQs, OSPE, Viva
8	Discuss isoenzymes. Discuss the generalclinical significance of enzymes.	Enzymes-IV	**IL / Practical**	BCQs, SEQs, OSPE, Viva
WEEK-VI				
9	Describe the synthesis of Haemoglobin.Discuss porphyria's.	Hemoglobin-I	**IL / Practical**	BCQs, SEQs, OSPE, Viva

10	Describe the fate of haemoglobin in the body. Describe the metabolism of bile pigments.	Hemoglobin-II	**IL / Practical**	BCQs, SEQs, OSPE, Viva
WEEK-VII				
11	Revision Class	**Revision Class**	**IL**	

BIOCHEMISTRY / FIRST YEAR BDS / MODULE-III OROFACIAL COMPLEX-I				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
Theme-1: Biological consideration of teeth				
WEEK-I				
1	Classification of vitamins and general functions of vitamins	**Bioc-40:** Vitamin	**IL**	BCQs, SEQs, OSPE, Viva

2			**IL**	BCQs, SEQs, OSPE, Viva
WEEK-II				
3	Sources, RDA, Active forms, Absorption, Functions, Deficiency states & Hypervitaminosis. Visual Cycle	**Bioc-41:** Vitamin A	**IL**	BCQs, SEQs, OSPE, Viva
4	Sources, RDA, Active forms, Absorption, Functions, Deficiency states & Hypervitaminosis.	**Bioc-42:** Vitamin D	**IL**	BCQs, SEQs, OSPE, Viva
WEEK-III				
5	Sources, RDA, Active forms, Absorption, Functions, Deficiency states & Hypervitaminosis.	**Bioc-43:** Vitamin E	**IL**	BCQs, SEQs, OSPE, Viva
6	Sources, RDA, Active forms, Absorption, Functions, Deficiency states & Hypervitaminosis.	**Bioc-44:** Vitamin K	**IL**	BCQs, SEQs, OSPE, Viva
7	Sources, RDA, Active forms, Absorption, Functions, Deficiency States.	**Bioc-45:** Vitamin B1	**IL**	BCQs, SEQs, OSPE, Viva
WEEK-IV				
8	Sources, RDA, Active forms, Absorption, Functions, Deficiency states.	**Bioc-46:** Vitamin B2	**IL**	BCQs, SEQs, OSPE, Viva
9	Sources, RDA, Active forms, Absorption, Functions, Deficiency states.	**Bioc-47:** Vitamin B3	**IL**	BCQs, SEQs, OSPE, Viva
10	Sources, RDA, Active forms, Absorption, Functions, Deficiency states.	**Bioc-48:** Vitamin B6	**IL**	BCQs, SEQs, OSPE, Viva
11	Sources, RDA, Active forms, Absorption, Functions, Deficiency states.	**Bioc-49:** Vitamin B9		
WEEK-V				
7	General introduction and classification of Minerals.	**Bioc-50:** Classification of Minerals	**IL**	BCQs, SEQs, OSPE, Viva
8	Sources, RDA, Absorption, transport, Functions, Clinical Aspects	**Bioc-51:** Sodium & Potassium	**IL**	BCQs, SEQs, OSPE, Viva
Theme-2: Orofacial Gland Consideration				

WEEK-VI

9	Sources, RDA, Absorption, transport, Functions, Clinical Aspects	**Bioc-52:** Calcium & Phosphorus	**IL**	BCQs, SEQs, OSPE, Viva
10	Sources, RDA, Absorption, transport, Functions, Clinical Aspects	**Bioc-53:** Magnesium & Fluoride	**IL**	BCQs, SEQs, OSPE, Viva
Theme-3: Oral Mucosa				
WEEK-VII				
11	Sources, RDA, Active forms, Absorption, Functions, Deficiency states.	**Bioc-53:** Vitamin C	**IL**	BCQs, SEQs, OSPE, Viva

FIRST YEAR BDS / PRACTICAL FOR BIO-MATERIALS & PRECLINICAL OPERATIVE DENTISTRY-I				
Week	**DAY**	**Topic**	**Interactive Lecture/Demo 08:00-09:00 AM**	**Practical 09:00-11:00 AM**
			Monday, Tuesday & Wednesday	
I	Thursday	Introduction to Operative Dentistry, Enamel, dentine, pulp, Periodontium and tooth surfaces	Dr Priya / Dr Nourain	
II	Tuesday	Dental Caries; etiology and classification	Dr Priya	
	Wednesday	Instruments used in Operative Dentistry	Dr Nourain	
	Thursday	Ergonomics, chair positioning in Operative Dentistry	Dr Nourain/ Dr Priya	
III	Tuesday	Aims, objectives and Fundamental of tooth preparation	Dr Priya	
	Wednesday	Class-I Cavity Tooth Preparation	Dr Priya	
	Thursday	Mechanical & Thermal Properties of Bio-Dental Materials	Dr Nourain	
IV	Tuesday	Methods of Isolation (Rubber Dam Practice)	Dr Priya/ Dr Norain	
	Wednesday	Bio-material Dental Amalgam, Composition, Manufacturing, classification, setting reaction.	Dr Nourain	
	Thursday	Bio-material Dental Amalgam Manipulation, Uses and Properties	Dr Nourain	

V	Tuesday	Class-I Restoration (Lining, Filling)	Dr Priya	
	Wednesday	CBL-1: Class-I Cavity Restoration & Selection of Restorative Materials		
	Thursday	Liner and Bases (Zinc Phosphate Cement)	Dr Nourain	
VI	Tuesday	Class-II Cavity Tooth Preparation	Dr Priya	
	Wednesday	CBL-2: Selection of Lining Materials		
	Thursday	Pulp Capping Materials (Calcium Hydroxide	Dr Nourain	
VII	Tuesday	Deep carious lesion and MTA as Pulp capping material	Dr Nourain	
	Wednesday	Class-II Amalgam Restoration	Dr Pirya	
	Thursday	Mercury Hazard & Handling	Dr Pirya	
VIII	Tuesday	Amalgam Failure &	Dr Nourain	
	Wednesday	Repair Matrix Band System	Dr Pirya	
	Thursday	CBL-3: Management of deep carious lesion and Selection of direct and indirect Pulp Capping Materials		
IX	Tuesday	Revision	Dr Nourain	
	Wednesday	Posting End Test & Psychomotor Skill Assessment Test	Dr Pirya	

BIO-MATERIALS & PRE-CLINICAL OPERATIVE DENTISTRY PRACTICAL'S FOR GROUP-B WEEK 1 TO WEEK 8				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
24	Introduction to subject	Introduction to Operative Dentistry-I	**Practical**	BCQs, SEQs
25	Introduction to subject	Introduction to Operative Dentistry-II	**Practical**	BCQs, SEQs
25-27	Introduction to subject	Introduction to Operative Dentistry-III	**Practical**	BCQs, SEQs
28	Introduction to subject	Introduction to Operative	**Practical**	BCQs, SEQs

		Dentistry-IV		
29-30	Introduction to subject	Introduction to Operative Dentistry-V	**Practical**	BCQs, SEQs
26-27-E	Discuss the basic need to study biologic basis of operative dentistry	Introduction to Operative Dentistry	**IL / Practical**	BCQs, SEQs
28-29-E	Diagnose and classify the dental caries	Dental Caries: Caries Etiology and Classification	**IL / Practical**	BCQs, SEQs, Work place based assessment
30-31-E	To understand the method of cavity preparation and requirements of different armamentariums for specific cavity design	Fundamentals of Tooth Preparation	**IL / Practical**	BCQs, SEQs, Work place based assessment
24-25- B	Describe the indications. Explain the instrument classification and use, instrument grasps, and Black's formula	Dental Instruments	**IL / Practical**	BCQs, SEQs, Work place based assessment
24-25- B	Describe the indications. Explain the instrument classification and use, instrument grasps, and Black's formula	Dental Instruments	**IL / Practical**	BCQs, SEQs, Work place based assessment
26-27- B	Describe the correct positioning of the operator, the patient and the chair side assistant for accomplishing clinical procedures in any give segment of the oral cavity	Ergonomics	**IL / Practical**	BCQs, SEQs, Work place based assessment
28-29- B	Describe the rationale and methods to achieve field isolation	Isolation	**IL / Practical**	BCQs, SEQs, Workplace based assessment
20-21- B	General introduction Composition, properties manipulation and rationale behind using each material	Biomaterials; dental amalgam cavity liners	**IL / Practical**	BCQs, SEQs, Workplace based assessment
22-23- B	Define and explain cavity sealers	Cavity Sealers	**IL / Practical**	BCQs, SEQs
24-25- B	Discuss the metal alloys in dentistry	Metal Alloys	**IL / Practical**	BCQs, SEQs
24-25- B	Define the principles of tooth preparation for Class-I amalgam preparations	Class-I Cavity	**IL / Practical**	BCQs, SEQs, Work place based

				assessment
26-27- B	Define the principles of tooth preparation for Class-I amalgam preparations	Class-I Cavity	**IL / Practical**	BCQs, SEQs, Work place based assessment
28-29- B	Define the principles of tooth preparation for Class-I amalgam preparations	Class-I Cavity	**IL / Practical**	BCQs, SEQs, Work place based assessment
26-27- B	Prepare a Class-II amalgam preparation according to specified measurements on any posterior tooth in the oral cavity.	Class-II Cavity	**IL / Practical**	BCQs, SEQs, Workplace based assessment
23-24- B	Describe the rationale characteristics and functions of matrix system. Discuss about other methods for tighter contacts	Matrix Band System	**IL / Practical**	BCQs, SEQs, LOG Book
25-26- B	Describe the rationale characteristics and functions of matrix system. Discuss about other methods for tighter contacts	Matrix Band System	**IL / Practical**	BCQs, SEQs, Work place based assessment
17-18- B	Give indications and Contraindications principles and steps used for preparation of complex amalgam restoration	Complex amalgam restoration	**IL / Practical**	BCQs, SEQs
19-20- B	Students able to understand why does amalgam restoration fail? Discuss repair of amalgam restoration benefits over replacement, criteria for repair	Amalgam failure and repair	**IL / Practical**	BCQs, SEQs
21-22- B	Discuss the issues related to amalgam hygiene in clinical practice and management	Mercury hazards and handling	**IL / Practical**	BCQs, SEQs
21-22- B	Prepare a Class-II amalgam preparation according to specified measurements on any posterior tooth in the oral cavity.	Class-II Cavity	**IL / Practical**	BCQs, SEQs, Work place based assessment

Bio-Materials & Pre-Clinical Prosthodontics for Group-C WEEK 1 TO WEEK 8				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**

25-26- C	**Introduction to subject**	Introduction to Prosthodontics-I	**Practical**	BCQs, SEQs
27-28- C		Introduction to Prosthodontics-II	**Practical**	BCQs, SEQs
29-30- C		Introduction to Prosthodontics-III	**Practical**	BCQs, SEQs
29-30- C		Introduction to Prosthodontics-IV	**Practical**	BCQs, SEQs
29-30- C		Introduction to Prosthodontics-V	**Practical**	BCQs, SEQs
26-27- C	State the different important terminologies of prosthodontics, what is denture and its type. The purpose of complete and partial denture.	Terminology of Prosthodontics, Objectives of Partial/ Complete Denture, Types of Dentures.	**IL**	BCQs, SEQs
	Recognize and discuss different types of denture and their possible implementation.	Types of denture and their objectives	Practical	Psychomotor Assessment
28-29- C	Discuss 4 classes of Kennedy's and their modifications along with Applegate's rules.	Kennedy's Classification and Appligate's rules for applying Kennedy's classification.	**IL**	BCQs, SEQs
	Interpret and recognize the classes of Kennedy's and their modification on cast models.	Kennedy's classification.	Practical	Psychomotor Assessment
30-31- C	Explain important features of anatomy of maxilla and mandible.	Outline and surfaces of maxillary/mandibular dentures.	**IL**	BCQs, SEQs
	Demonstrate and delineate the anatomy of maxilla and mandible on cast models.	Outline and surfaces of maxillary/mandib	Practical	Psychomotor Assessment

		ular dentures.		
24-25- C	Enlist the impression materials and their characteristics, used in construction of removable prosthesis.	Impression materials in relation to removable prosthodontics	**IL**	BCQ, SEQ
	Recognize the tray for both jaws and their types, delineate their parts.	Tray selection, parts and types of trays.	Practical	Psychomotor Assessment
26-27- C	Define impression, differences in primary and secondary impressions along with the materials used in their construction.	Impression materials in relation to removable prosthodontics	**IL**	BCQs, SEQs
	Perform the steps in taking primary and Secondary impressions.	Primary and secondary Impressions.	Practical	Psychomotor Assessment
28-29- C	Define and describe materials involved in construction of special trays for individual patients.	Materials used in construction of special tray.	**IL**	BCQs, SEQs
	Construct the special trays customized for individual patients through different techniques.	Methods of construction of special trays.	Practical	Psychomotor Assessment
24-25- C	Enlist the impression materials and their characteristics, used in construction of removable prosthesis.	Impression materials in relation to removable prosthodontics	**IL**	BCQ, SEQ
	Recognize the tray for both jaws and their types, delineate their parts.	Tray selection, parts and types of trays.	**Practical**	Psychomotor Assessment
20-21- C	Define and describe the surveyor in terms of its objective, usage.	Definition, Objective, Uses and Component Parts of Surveyor.	**IL**	BCQs, SEQs
	Recognize different parts of dental surveyor.	Component Parts of Surveyor	**Practical**	Psychomotor Assessment

22-23- C	Define clasps its usage .Enlist types of wires used in construction of clasps,	Types of wires. Clasps.	**IL**	BCQs, SEQs
	Construction of different types of clasps used in formation of removable prosthesis.	Techniques of clasp formation.	Practical	Psychomotor Assessment
24-25- C	Define occlusal rims. Enlist the materials used in construction of rims.	Materials used in construction of	**IL**	BCQs, SEQs
	Construct the occlusal rims with proper specifications on the special trays.	Construction and specification of maxillary/mandibular occlusal	Practical	Psychomotor Assessment
24-25- C	Define and describe articulators	Definition, Objective, Uses and Types of Articulators	**IL**	BCQs, SEQs
	Recognize different types of articulators.	Types of Articulators.	Practical	Psychomotor Assessment
26-27- C	Define artificial teeth and its types.	Types and Selection Criteria of Artificial Teeth.	**IL**	BCQs, SEQs
	Enlist the methods and criteria to select artificial teeth.	Artificial teeth and selection criteria of artificial teeth	Practical	Psychomotor Assessment
28-29- C	Describe arrangement criteria of anterior teeth.	Arrangement of Anterior Teeth	**IL**	BCQs, SEQs
	Perform anterior teeth setup by following the criteria.	Arrangement of anterior teeth.	Practical	Psychomotor Assessment
24-25- C	Describe arrangement criteria of posterior teeth.	Arrangement of Posterior Teeth.	**IL**	BCQs, SEQs
	Perform posterior teeth setup by following the criteria for posterior teeth.	Arrangement of posterior teeth.	Practical	Psychomotor Assessment
26-27- C	Define and explain the types and uses of Waxes	Waxes: Types and Uses.	**IL**	BCQs, SEQs
	Perform wax up procedure and different technique to finish it.	Wax-up procedure / finishing of wax.	Practical	Psychomotor Assessment
28-29- C	Define and Explain gypsum	Gypsum	**IL**	BCQs, SEQs
	Enlist different parts of flask.	Parts of Flask	Practical	Psychomotor Assessment

21-22- C	Define and Explain gypsum	Gypsum	**IL**	BCQs, SEQs
	Perform the flaking procedure with proper manipulation of gypsum	Flasking procedure	Practical	Psychomotor Assessment
23-24- C	Define and describe Acrylic, its types and uses.	Introduction to acrylic material.	**IL**	BCQs, SEQs
	Perform the procedure of packing and bench curing.	Packing and bench curing practical	Practical	Psychomotor Assessment
25-26- C	Describe the curing procedure.	Curing Procedure	**IL**	BCQs, SEQs
	Perform the procedure of curing and knowledge about differences in types of cycle	Long and short curing cycles practical	Practical	Psychomotor Assessment
17-18- C	Enlist the steps of deflasking.	Deflasking	**IL**	BCQs, SEQs
	Perform the procedure of deflasking and retrieval of denture from the flask.	Deflasking and retrieval of denture practical	Practical	Psychomotor Assessment
19-20- C	Enlist the finishing and polishing tools and techniques in construction of complete denture	Finishing and polishing techniques and materials lecture	**IL**	BCQs, SEQs
	Perform the finishing and polishing of the cured denture.	Finishing and polishing of complete denture practical	Practical	Psychomotor Assessment
21-22- C	Recognize the faults in cured denture	Faults in cured denture	**IL**	BCQs, SEQs
	Recognition and correction of errors in cured denture	Errors in cured denture	Practical	Psychomotor Assessment

INTRODUCTION TO CLINICAL CARE & PROFESSIONALISM FOR GROUP-D				
S.NO.	**LEARNING OBJECTIVES**	**TOPIC**	**TEACHING STRATEGY**	**ASSESSMENT**
25-26- C	Introduction to subject	Introduction to Dental Practice / Professionalism-I	Practical	BCQs, SEQs
27-28- C		Introduction to Dental Practice / Professionalism-II	Practical	BCQs, SEQs

29-30- C	Introduction to subject	Introduction to Dental Practice/ Professionalism-III	**Practical**	BCQs, SEQs
29-30- C		Introduction to Dental Practice/ Professionalism-IV	**Practical**	BCQs, SEQs
29-30- C		Introduction to Dental Practice/ Professionalism-V	**Practical**	BCQs, SEQs
26-27- D	Provide the complete overview on entire course work	Orientation, Course Overview, Class Code of conduct	**Demonstration**	Workplace based Assessment
28-29- D	Understand the concepts of ethics and ethical theories to apply in dental practice	Introduction to Ethics and Ethical theories	**Demonstration**	BCQs/SEQs
30-31- D	Understand the fundamental principle of Biomedical ethics and able to apply in dental practice.	Fundamental Principles of Biomedical ethics	**Demonstration**	BCQs/SEQs
24-25- D	Understand the manoeuvre of dental unit and appropriate positions in dental practice	Dental Practice Management–I, Introduction to Dental Chair, Position of Dentist and Assistant	**Demonstration**	OSCE
24-25- D	Understand the manoeuvre of dental unit and appropriate positions in dental practice	Dental Practice Management–I, Introduction to Dental Chair, Position of Dentist and Assistant	Demonstration	OSCE
26-27- D	Identify the basic instruments and their applications dental practice	Dental Practice Management–II, Basic Instrumentation for Dental Practice	Demonstration	Quiz / BCQs/ OSCE
28-29- D	Protect from exposure to workplace hazards and the risk of injury	Cross Infection Control–I, Hand Hygiene	Demonstration	Quiz/ OSCE

		Standards and Personal Protection Equipment.		
20-21- D	Understand adverse impacts of waste on human health and the environment. Recognize and manage the needle-stick injuries that may occurs during clinical practice.	Cross Infection Control–II, Waste Management and Needle Stick injury Management	Demonstration	BCQ/ OSCE
22-23- D	Discuss the rational for sterilization and disinfections. Enumerate the methods of sterilization and disinfection. Discuss the appropriate methods of sterilization and disinfection.	Cross Infection Control–III. Sterilization and Disinfection	Demonstration	BCQ/ SEQ
24-25- D	Recognize the importance of record keeping. Ensure the continuity of patient-care and enable third party to see what treatment has been provided.	Dental Practice Management–III. Record Keeping.	Demonstration	SEQ
24-25- D	Select the appropriate dental materials for general dental procedure in the dental practice.	Dental Practice Management–IV. Dental Material: Available in Clinic and Appropriate Selection	Demonstration	Quiz/ BCQ
26-27- D	Develop proactive response to stressful situations. Recognize the number of stressors and improve the ability to cope with stress.	Stress Management	Demonstration/ Role playing	OSCE
28-29- D	Understand the importance of time management. Enable them to clarify and priorities their procedure and goals in schedule time	Time Management	Demonstration	OSCE
24-25- D	Teach basic communication and counseling skills to improve their overall clinical competency. Demonstrate effective strategies to communicate in the dental practice	Communication Skills–I. Patient, Professional Colleagues and Dental Staff	Demonstration/ Case based discussion	OSCE
26-27- D	Enable to write medical prescription, clinical opinion and progressive note. How to write for referrals to specialist.	Communication Skills–II. Prescription	Demonstration/ Case based discussion	OSCE/OSPE

		Writing, Medical Consultation Writing, progress note Writing and Referrals to specialists.		
28-29- D	Recognize the importance of professionalism in dentistry. Discuss the elements of professionalism.	Professionalism in Dentistry	Case based discussion	Quiz
21-22- D	Recognize the importance of informed consent. Explain the informed consent process.	Informed Consent in Dental Practice	Demonstration/ Case Based Discussion	SEQ/ OSCE
23-24- D	Describe the different types of dentist patient relationship. Recognize the boundaries of Relationship.	Dentist Patient Relationship	Demonstration/ Case based Discussion	SEQ/ BCQ
25-26- D	Recognize the importance of confidentiality and privacy. Methods of maintaining confidentiality and privacy of patients.	Confidentiality and Privacy	Demonstration/ Case based Discussion	SEQ/ BCQ/ OSCE
17-18- D	Become familiar with elements and principles of ethical decision making in ethical dilemmas encountered in dental practice	Ethical Issues in Dental Practice–I. Malpractice, Harassment	Case based discussion	Writing Assignment
19-20- D	Become familiar with elements and principles of ethical decision making in ethical dilemmas encountered in dental practice	Ethical Issues in Dental Practice–II. Patient or Dentist with Infectious diseases: Conflict of interest and relationship with Pharmaceutical Companies	Case based discussion	Writing assignment
21-22- D	Recognize essential principles for taking high quality photographs for patient education and professional development.	Photography in Dental Practice	Demonstration	OSPE

DENTAL ANATOMY GROUP-A

S.NO.	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
26-A	Given a diagram, photograph or description, identify permanent teeth by their proper name and/or number	An introduction to dentalnomenclature	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
27-A	Identify the type and number of permanent teeth per quadrant, arch, and in total; and identify the type and number of teeth which are anterior or Posterior.	Introductionto anterior and Posterior teeth	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
28-A	Identify or describe dental formulae by supplyingor selecting the correct Information regarding a given dental formula.	Tooth numbering system	20 min Lecture& Practical	BCQs, SEQs
29-A	Identify the correct eruption sequence for permanent teeth and list the correct anticipatederuption dates for all permanent teeth.	Eruptionsequence for permanent teeth	20 min Lecture& Practical	BCQs, SEQs
30-A	Identify the proper name for tooth surfaces, line and point angles of a tooth when given a diagram or a description.	Tooth surfaces	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
31-A	Identify or describe dental formulae Identify the correct eruption sequence for permanent teeth and list the correct anticipated eruption dates for all permanent teeth.	Dental formulae for correct eruption sequence	20 min Lecture& Practical	BCQs, SEQs
20-A	Describe the variations in the degree of mineralization and age changes of primary, secondary, and tertiary dentin. Describe peritubular and intertubular dentin, dentinaltubules and their branches.	**Fnd-S1-OB-23(A):** Dental hardtissues and there histological variations	20 min Lecture& Practical	BCQs, SEQs
21-A	Demonstrate the knowledge about ideal morphology of Central Incisor (Maxillary And Mandibular)	CentralIncisor	20 min Lecture& Practical	Psychomotor Assessment
22-A	Create the ideal dental anatomy of permanentCentral Incisor by drawing on graph book(Maxillary And Mandibular)	CentralIncisor	20 min Lecture& Practical	BCQs, SEQs

	Interpret and recognize the classes of Kennedy's and their modification on cast models.	Kennedy's classification.	Practical	Psychomotor Assessment
	Create the ideal dental anatomy of permanent molar teeth by drawing on graph book(Maxillary And Mandibular)	Molar teeth	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
	Describe the anatomy and function of the muscles and ligaments involved in mastication.	Ligaments ofTHJ	20 min Lecture& Practical	·
	Describe the anatomy and function of thetemporomandibular joint.	Bones involved in joint (TMJ)	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
	Contrast isometric and isotonic muscle contraction.	Musclemovements	20 min Lecture& Practical	
	Describe the articular surfaces of the TMJ eminence and mandibular condyle and contrastthese to surfaces in limb joints.	Comparisonof TMJ with other joints	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
18	Morphology of the permanent Mandibular lateralincisors	Permanent mandibular incisors	**IL**	
24-A	Identify the proper name for tooth surfaces, line and point angles of a tooth when given a diagramor a description. Describe the tooth-numbering systems used in dentistry.	Tooth- numbering systems used in dentistry	20 min Lecture& Practical	
25-A	Describe, select the correct response from a list,or use a drawing to identify or label these: mamelons, grooves, pits, ridges, fossae, lobes, cingula, heights of contour, contact areas, developmental depressions, tubercle, cusps, embrasure etc.	Tooth surface markings	20 min Lecture& Practical	
26-A	Describe the following dental tissues: enamel, dentin, pulp, cementum and periodontalligament.	**Fnd-S1-OB-19(A):** Tooth andsupporting tissues	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment
27-A	Describe the weight and volume composition ofthose dental tissues; name the cellular elements involved	Structure ofcells in dental tissues	20 min Lecture& Practical	

	and the blood and nerve supply.			
28-A	Describe the type and distribution of cells in the dental pulp, including age changes, structure andultrastructure of odontoblasts.	Fine structures present in cells of dental tissues	20 min Lecture& Practical	BCQs, SEQs, Psychomotor Assessment

6.6: LEARNING RESOURCES

The learning resources for the educational contents of BDS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. Ina addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.
Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

Recommended Books First YEAR BDS			
Anatomy	**Physiology**	**Biochemistry**	**Oral Anatomy & Tooth Morphology**
1. Snell's Clinical Anatomy, 9th Edition. 2. Langman's Medical Embryology 14th Edition By T.W. Sadler Phd. 3. Wheater's Functional Histology – 6th Edition – Elsevier. 4. Snell's Clinical Neuroanatomy, Eighth Edition.	1. Guyton and Hall Textbook of Medical Physiology – 15th Edition. 2. Ganong's Review of Medical Physiology, 27th Edition.	1. Harper's Illustrated Biochemistry, 32 edition. 2. Lippincott' Illustrated Reviews-Biochemistry 7th edition.	1. Ten Cate's Oral Histology 9th edition. 2. Wheeler's Dental Anatomy, Physiology and Occlusion 11th edition

6.2: CURRICULAR FRAMEWORK OF SECOND YEAR BDS

INTRODUCTION TO INTEGRATED CURRICULAR FRAMEWORK OF SECOND YEAR MBBS		
Paper-I	**Paper-II**	
Module-I	**Module-II**	**Module-III**
Disease, Infections & Therapeutics I	Disease, Infections & Therapeutics II	Neoplasia, Hemodynamics & Genetics
16 Weeks	10 Weeks	10 Weeks
Human Anatomy, Human Physiology, Biochemistry and Oral Biology & Tooth Morphology		

Paper-III: Module-IV
Pre-Clinical Dental Sciences-II
32 Weeks (on rotations basis group wise)
Oral Anatomy & Tooth Morphology, Biomaterials and Pre- clinical Sciences of Operative Dentistry-I, Biomaterials and Pre-clinical Sciences of Removable Prosthodontics-I, Introduction to Dental Care and Professionalism-2 (on rotation basis) and Research Methodology-I and Dental Informatics-2

PROGRAM INTENDED LEARNING OUTCOMES OF SECOND YEAR BDS

MODULE-1 DISEASE INFECTION & THERAPEUTICS (DIT)-1		
PATHOLOGY	**PHARMACOLOGY**	**ORAL PATHOLOGY**
• Introduction to pathology • Cellular adaptations (practical) • Mechanism of cell injury • Intracellular accumulation & pigmentation (practical) • Necrosis • Necrosis (practical) • Apoptosis • Calcification (practical) • Cell aging • Introduction to acute inflammation • Acute inflammation vascular and cellular events • Chemical mediator of inflammation and outcome of inflammation • Acute inflammation (practical) • Chronic inflammation • Repair • Wound healing • Chronic inflammation (practical) • Innate & adaptive immunity • Cell mediated immunity • Structure and function and immunoglobulins • Autoimmunity • Hypersensitivity reactions • MHCs • Immunodeficiency disorders • Introduction to microbiology • Structure of bacterial cell • Bacterial growth cycle • Simple staining (practical) • Classification & normal flora • Grams staining (practical) • Bacterial genetics	• Overview of pharmacology • Introduction to pharmacology (practical) • Routes of drug administration-1 • Weight & measurement (practical) • Routes of drug administration-2 • Abbreviation (practical) • Drug absorption • Prescription writing (practical) • Bioavailability & half life • Pharmaceutical preparation (practical) • Drug distribution • Biotransformation • Drug excretion • Pharmacodynsmics-1 • Prepare & dispense carminative mixture (practical) • Pharmacodynamics-2 • Factors effecting drug action • Prepare & dispense100ml of normal saline (practical) • Adverse drug reaction • Teratogenic drugs • Prepare & Sulphur ointment (practical)	• Oral mucosa • Oral epithelial changes • Reactive white lesion • Vascular lesion • Hyper plastic lesion • Pulpitis-1 • Leukoplakia-1 • Leukoplakia-2 • Pulpitis • Pulp polyp, healing and necrosis • Hemangioma and lymphangioma • Hyper plastic lesion • Periodontitis • Osteomyelitis • Spread of inflammation • Osteomyelitis • Immunological disorder-1 • Immunological disorder-2 • Immunological disorder-3 • Immunological disorder-4 • Immunology • Caries-1 • Caries-2 • Bacterial infection 1 • Syphilis • Candidiasis-1 • Candidiasis-2 • Discoloration of teeth • Non-bacterial tooth loss • Cyst-1 • Cyst-2 • Cyst-3 • Cyst-4 • Cyst-5 • Cyst-6

• Bacterial pathogenesis-1 • Bacterial pathogenesis-2 • ZN staining (practical) • Host defence • Culuture media-1 (practical) • Laboratory diagnosis of bacterial disease • Culuture media-2 (practical) • Sterilization (practical) • Staphylococcus • Sterptococuus • Streptococcus pneumonia • Lab.diagnosis of Neisseria (practical) • Bacillus • Lab diagnosis of corynebacterium diphtheria (practical) • Clostridia • E.coli & klebsiella (practical) • Salmonella & shigella • Gram negative curved rods • Proteus &pseudomonas (practical) • Mycobacterium tuberculosis • H.influenza & B. pertussis • Basic mycology	• NSAIDS-1 • NSAIDS-2 • Corticosteroid • Introduction to antibiotics • prescription writing-1 (practical) • cell wall synthesis inhibitors-1 • prescription writing -2(practical) • cell wall inhibitors-2 • To prepare & dispense terpantine oil (practical) • Aminoglycosides • Discussion class (practical) • To prepare terpantine oil • Tetracyclin • Macrolids • To prepare and dispense potassium permanganate (practical) • Flouroquinolones • Sulfonamides • Tuberculosis • Anti-fungal	• Cyst-7 • Cyst-8

MODULE-II DISEASE INFECTION & THERAPEUTICS (DIT)-2		
PATHOLOGY	**PHARMACOLOGY**	**ORAL PATHOLOGY**

• Structure and classification of virus • Viral Replication • Viral Pathogenesis • Host Defense • Lab diagnosis of viral diseases • Hepatitis virus • HIV • Polio & Dengue Virus • E. Histolytica; Giardia • Leishmania • Lab diagnosis of Malaria (Practical) • Trichomonas & Toxoplasma • Intestinal nematodes • Tissue nematodes • Lab Diagnosis of Worms (Practical) • Lab Diagnosis of Ischemic Heart Disease (Practical) • Anaemia • Lipid Profile (Practical) • Chronic Obstructive Lung Diseases • Lab interpretation of Diabetes mellitus (Practical) • Ulcerative lesions of GIT • Thyroid function test (Practical)	• Anti-viral Therapy (AVT)-I • Anti-viral Therapy (AVT)-II • Anti-viral Therapy (AVT) (Practical) • AVT: Drugs used in CMV • AVT: Drugs used in Retrovirus (H.I.V)-I • AVT: Drugs used in Retrovirus (H.I.V)-II • AVT: Drugs used in Hepatitis • Drugs used in Malaria • Drugs used in Amebiasis • Prescription writing for Malaria and Amebiasis (Practical) • CVS: Drugs used in Hypertension-I • CVS: Drugs used in Hypertension-II • CVS: Diuretics-I • CVS: Diuretics-II • Drugs used in Asthma-I • Drugs used in Asthma-II • CVS: Drugs used in Angina Pectoralis • CVS: Cardiac Glycosides • Drugs used in Acid Peptic Ulcer • Emetics and Anti-Emetics • Endocrinology: Drugs used in Diabetic Mellitus • Endocrinology: Drugs used in Hypo and Hyperthyroidism • Blood: Anticoagulants • Blood: Drugs used in anemia • Blood: Prescription regarding the treatment of anaemia (Practical)	• Vesiculobullous Conditions-I • Vesiculobullous Conditions-II • Ulcerative Conditions-I (L&CBL) • Ulcerative Conditions-II • Fungal Infections • Reactive lesions of salivary glands (L&CBL) • Alteration in salivary flow rate • Bacterial infection of Salivary Gland • Viral Infection of Salivary Glands • Salivary Gland Tumors-I • Salivary Gland Tumors-II • Salivary Gland Tumors-III (L&CBL) • Inherited and developmental disorders of bone • Fibro-Osseous Lesions-I • Fibro-Osseous Lesions-II • Metabolic & Endocrinal Disorder of Bone-I • Metabolic & Endocrinal Disorder of Bone-II • Metabolic & Endocrinal Disorder of Bone-III (L&CBL) • Central giant cell granuloma, Exostosis, Cherubism • Tumors of Bone-I • Tumors of Bone-II • History-taking principles, medical and dental history demonstration • Fundamental principles of light microscopy and how to set a slide on a microscope with different magnifications • Different parts of the oral cavity, teeth, and dental caries • History-taking in OPD and history-form filling • Steps of tissue processing for paraffin sections and basic steps and requirements for performing an H&E staining • Dental caries detection and

		diagnosis on the patient, recording dental caries on the dental chart, and taking a history pertinent to the condition • Extra and intraoral examinations of the patient • Histopathological variations in the oral mucosa • Caries detection dyes, caries activity tests, hands-on, and dental chart filling • Dental radiology, CBCT • Process of immunohistochemistry and diseases diagnosed by IHC

COURSE OUTCOME MODULE-III NEOPLASIA,HAEMODYNAMICS & GENETICS		
PATHOLOGY	**PHARMACOLOGY**	**ORAL PATHOLOGY**
• Introduction to neoplasia • Characteristic features of tumor • Benign and malignant epithelial tumor (practical) • Molecular basis of cancer-1 • Benign and malignant connective tissue tumor (practical) • Molecular basis of cancer-2 • Carcinogenic agent-1 • Carcinogenic agent-2 • Diagnostic approach to Neoplasia (Practical) • Tumor virus • Edema • Hyperemia, congestion, hemorrhage • Thrombosis • Embolism • Infarction • Shock	• Anti-neoplastic drugs-I • Introduction to pharmacodynamics-I • Anti-neoplastic drugs-2 • Introduction to pharmacodynamics-II • Introduction to autonomic nervous system • Introduction to autonomic nervous system (Practical) • Introduction to ANS-2 • Cholinergic Agonists (Direct acting) • Cholinergic Agonists (Indirect acting) • Discuss Receptor Distribution and Classification of Cholenergic Agonists (Practical) • Cholinergic Antagonist • Adrenergic agonist -1 •	• Developmental Anomalies of Teeth-I • Developmental Anomalies of Teeth-2 • Developmental Anomalies of Teeth-3 • Dentinogenesis Imperfecta • Anomalies of Pulp • Odontomes • Mix odontogenic tumors • Odontogenic tumors 1 • Odontogenic tumors 2 • Oral Squamous Cell Carcinoma (OSCC)-1 • Oral Squamous Cell Carcinoma (OSCC)-2 • Oral Squamous Cell Carcinoma (OSCC)-3 • Oral Squamous Cell Carcinoma (OSCC)-4 • Oral Squamous Cell Carcinoma (OSCC)-5

• Classification of genetic diseases & Mutation • Mendelian disorder • Chromosomal disorder • Inborn error of metabolic disorders • Diagnosis of genetic diseases	• To observe the effect of pilocarpine on rabbit eye (Practical) • Adrenergic agonist-2 • To observe the effect of atropine on rabbit eye (Practical) • Alpha blockers • Beta Blockers • Discussion class • Introduction to CNS • Drugs used in Epilepsy (Practical) • Opioids • Drugs used in Parkinson's disease (Practical) • Sedative Hypnotics • Alcohol (Practical) • General Anaesthesia • Local Anaesthetic (Practical)	• Oral submucous fibrosis (OSF)-1 • Oral Squamous Cell Carcinoma (OSCC)-6 • Oral submucous fibrosis (OSF)-2

COURSE OUTCOME MODULE-IV: DENTAL MATERIALS & PRE-CLINICAL DENTAL SCIENCE		
Biomaterial Pre-Clinical & Clinical Operative Dentistry-II	**Biomaterials Pre-Clinical & Clinical Prosthodontics-II**	**Clinical Care & Professionalism-II**
• 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	• 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	• 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

and restoration • PBL-1: Posterior Restoration • Dental Composite Handling • 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)	Crown • 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 • Colour and Dental Shade Principles • Dental Cements • Provisional Restoration • Resin Bonded Restoration • Implant Supported and Retained Prosthesis • PBL Based Learning • Discussion & Revision	• Research Design in Oral 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	DENTAL INFORMATICS-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 analyze numerical variables: -Tabular presentation, -Graphical presentation • What is hypothesis testing? -null hypothesis, -alternative/research hypothesis	• Computer Maintenance • Data Backup • Data Recovery • File Conversion • File Compression • Search Engines • Effective Search techniques • Accessibility to Medical Research ▪ Materials ▪ Personalized Google Page (Google Apps) • Google Calendar • Creating Surveys, Quizzes and Polls through Google Forms • LinkedIn the pathway to search for job • Advance Features of MS WORD • Table of Contents (TOS) using MS Word ▪ Create and Manage Reference • Advance Formulas and functions in MS Excel

• 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: - o How to create Mandalay ID, o How to create Mandalaylibrary o How to add references to the Mandalay library? – o Mandalay plugin for MS word, - o Mendeley importer, -What is DOI?, -What is PMID? o How to add references to MS word file from Mandalay? -citation and bibliography. o 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 referencemanagement 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?	

	MODULE I **SCIENCE OF DENTAL MATERIALS**		
	SCIENCE OF DENTAL MATERIALS At the end of the module, student should be able to:	**MIT**	**ASSESSMENT TOOLS**
1.	Understand the structure of tooth and supporting tissues	IL	BCQs, SEQs, Viva
2.	Enlist tooth numbering systems	IL	BCQs, SEQs.
3.	Enlist different groups of dental materials and their nomenclature	IL	BCQs
4.	Define 'the science of dental materials'	IL	Viva
5.	Identify the role of ADA specification concerning dental materials	IL	BCQs, Assign
6.	Explain the selection criteria of dental materials	IL	BCQs, Viva, Assign
7.	Identify different dental appliances, prosthesis and restorations	PBL, SD	OSPE, PBL, Viva.
8.	Enlist the properties of dental materials during storage, mixing, manipulation and setting	IL	BCQs, SEQs, Assign, Viva
9.	Differentiate between mixing time, working time and setting time	IL	BCQs, SEQs, OSPE
10.	Enlist the mechanical properties of dental materials	PBL	BCQs, SEQs, OSPE, Assign, PBL, Viva.
11.	Define the following terms: stress, strain, yield stress, proportional limit, ~~modulus of elasticity, resilience, toughness, ductility, malleability, impact~~ strength, fatigue, hardness, creep , flow	IL, SD	BCQs, SEQs, ~~OSPE, PBL,~~ Viva, Assign

12.	Relate stress and strain through graph	IL	SEQs, Assign
13.	Differentiate between abrasive wear ,erosion and solubility	IL	BCQs, SEQs, Viva.
14.	Differentiate between elasticity and viscoelasticity	IL	BCQs, SEQs, Viva.
15.	Differentiate between creep and flow	IL	BCQs, SEQs, Viva
16.	Define vicker's hardness number	IL	BCQs, SEQs
17.	Define rheology	IL	BCQs, SEQs
18.	Discuss the relationship of shear rate with flow index	IL	SEQs
19.	Enlist the thermal properties characterizing dental materials	IL	BCQs, SEQs, Viva, Assign.
20.	Define adhesion , adhered and adhesive	IL	BCQs, SEQs, Viva
21.	Explain bonding of restorative materials through micromechanical retention, micromechanical retention and chemical adhesion	IL	BCQs, SEQs, OSPE, Viva, Assign,
22.	Correlate contact angle, wetting and surface tension	IL	BCQs, SEQs, OSPE
23.	Enlist factors which affect dimensional stability of dental materials	IL	SEQs, Assign, CQ
24.	Define hue, chroma and value	IL	BCQs, SEQs, OSPE, Assign, CQ
25.	Discuss corrosion and tarnish	IL	BCQs, SEQs, Viva,
26.	Discuss biological properties and health hazards of various materials	IL	SEQs, CQ
27.	Discuss chemical properties related to the chemical stability of materials	IL	BCQs, SEQs, CQ
28.	Enlist the types of dental gypsum products as identified by the ISO standard	IL	BCQs, SEQs, OSPE, Viva, Ppt, CQ. competition
29.	Discuss the ideal requirements for dental cast materials	IL	BCQs, SEQs, Viva,
30.	Differentiate between model and die	IL, SD	BCQs, SEQs, OSPE,
31.	Discuss the composition and formation of dental plaster and stone	IL	BCQs, SEQs, OSPE, Assign, Viva, PW
32.	Differentiate between the properties of dental plaster and stone	IL, SD	BCQs, SEQs, OSPE, , Viva,

			PW
33.	Enlist the types of dental gypsum products as identified by the ISO standard	IL	BCQs, SEQs, OSPE, Assign, Viva
34.	Discuss and demonstrate the manipulation of dental plaster and stone	IL, SD, VD	BCQs, Assign, Viva, PW
35.	Explain the setting reaction of dental gypsum products	IL	BCQs, SEQs, Assign, Viva, PW
36.	Enumerate the factors which affect setting time of dental plaster and stone	IL	BCQs, SEQs, Viva
37.	Discuss the advantages and disadvantages of gypsum to be used in making die and models	IL	BCQs, SEQs, Viva
38.	Enlist alternate materials for making dental casts	IL	SEQs, OSPE, Viva
39.	Discuss faults in casts	IL	BCQs, SEQs, Viva, Assign
40.	Highlight methods for disinfection of casts	IL	BCQs, SEQs ,OSPE
41.	handling of dental plaster and stone through video demonstration	VD	PW
42.	Demonstrate manipulation of dental plaster and stone in laboratory	SD	PW
43.	Fabricate a ¾ plaster slab in laboratory	SD	PW
44.	Effect of temperature of water on the setting reaction of gypsum	IL, SD	SEQs, Viva, PW
45.	Classify and identify the different types of dental waxes and discuss their clinical applications.	IL	BCQs, SEQs ,OSPE
46.	Discuss the composition of dental waxes	IL	BCQs, SEQs, Viva
47.	Discuss the general properties of dental waxes	IL	BCQs, SEQs, Viva
48.	Discuss the specific types, properties and uses of denture modeling wax	IL	BCQs, SEQs ,OSPE, Viva
49.	Discuss the specific types, properties and uses of inlay wax	IL,VD	BCQs, SEQs ,OSPE,
50.	Demonstrate manipulation of modeling wax in laboratory	SD	PW
51.	Outline the steps in making a cast restoration	PBL	BCQs, SEQs ,OSPE, PBL
52.	Discuss the procedure of investment for casting alloys	IL,VD	BCQs, SEQs ,OSPE, Assign,
53.	Discuss the requirements of investments for alloy casting procedures	IL	SEQs , Assign, Viva
54.	Enlist the three main groups of investment material	IL	SEQs,OSPE

55.	Discuss their composition, types, setting reaction, properties and uses	IL	BCQs, SEQs,Viva
56.	Discuss in detail the compensating expansion taking place in each of the investment materials and relate it to their clinical use	IL	BCQs, SEQs,OSPE
57.	Compare the properties of investment materials	IL	BCQs, SEQs
58.	State the types of polymerization reactions	IL	BCQs, SEQs, OSPE, Viva
59.	Discuss the steps taking place in each type of polymerization reaction	IL	SEQs, OSPE, Viva,
60.	Correlate the molecular weight and degree of chain branching with properties of the resulting polymer	IL	BCQs, SEQs, Viva, Assign
61.	Give examples of dental materials for each type of polymerisation	IL	SEQs, OSPE, Viva, Assign
62.	Discuss the physical changes occurring during polymerisation including the changes in phase ,temperature and dimension	IL	BCQs, SEQs, OSPE, Viva
63.	State and explain the factors which control the structure and properties of polymers	IL	BCQs, SEQs, Viva,
64.	Define glass transition temperature	IL	BCQs, Viva,
65.	Discuss the methods of fabricating polymers	IL	SEQs, Assign
66.	State the materials available for construction of denture base	IL	SEQs, OSPE, Viva
67.	Discuss the ideal requirements for denture base polymers	IL	SEQs , Viva, Assign
68.	Classify acrylic denture base materials according to the ISO standard	IL	SEQs, Viva
69.	Discuss the composition of acrylic denture base materials	IL	SEQs,OSPE,
70.	Discuss the manipulation/mixing of heat cure acrylic resin	IL, SD	PW
71.	Identify the transitional stages which occur after mixing heat cured acrylic resin	IL, SD	SEQs,OSPE, PW,
72.	Discuss dough moulding technique for making denture base	IL	BCQs, SEQs, Viva
73.	Differentiate between doughing time and working time	IL	SEQs, BCQ
74.	Discuss the curing cycles for heat cured acrylic resin	IL, SD	BCQs, SEQs, OSPE, Viva, PW
75.	State the possible reasons for warpage and its solution	IL	SEQs, Viva
76.	Give reasons for crazing in acrylic resin	IL	BCQs, SEQs, OSPE, Viva
77.	Discuss the different types of porosities which may occur in set acrylic resin and suggest ways to avoid their formation	IL	BCQs, SEQs, OSPE, Viva
78.	Differentiate between injection moulding and dough moulding/compression moulding technique	IL	SEQs, CQ, Assign

79.	Discuss the uses of different types of acrylic resin	IL, SD	SEQs, Viva
80.	Enlist and explain the properties of acrylic resin	IL	SEQs, OSPE, Viva, Assign
81.	Discuss the advantages of modified acrylic resins	IL	SEQs, BCQ, Assign
82.	State methods for disinfection of acrylic prosthesis	IL	SEQs, Viva
83.	Demonstrate the manipulation of heat cured acrylic resin	IL, VD	PW
84.	Fabricate heat-cured acrylic partial dentures	SD	PW
85.	Classify denture lining materials	IL	SEQs
86.	Discuss the types and composition of hard reline materials	IL	BCQs, SEQs, OSPE,
87.	Discuss the advantages and disadvantages of hard reline materials	IL	SEQs, Viva, Assign
88.	State the composition and requirements of tissue conditioners	IL	SEQs, OSPE
89.	Explain the manipulation of tissue conditioners	IL	SEQs, OSPE, Viva
90.	Correlate the properties of tissue conditioners with their use	PBL	PBL, SEQs
91.	State the criteria for using temporary soft lining materials	IL	SEQs, Assign
92.	Discuss the requirements for long term soft lining materials	IL	SEQs, Assign
93.	Enlist and compare the materials available as permanent soft liners	IL	SEQs, OSPE
94.	Discuss the harmful use of self-administered relining materials	IL	SEQs
95.	Discuss the requirements of artificial teeth	IL	CQ, Viva
96.	Enlist the materials available for making artificial teeth	IL	SEQs, Viva, Assign
97.	Discuss the properties of these materials	IL	SEQs, OSPE, CQ, Viva
98.	Discuss the advantages and disadvantages of acrylic and porcelain teeth	IL	BCQs, SEQs, OSPE, Quiz, Ppt, Viva
	PHARMACOLOGY		
99.	Describe the scope of pharmacology with a brief background of history, terminologies, rational use of drugs, pre-clinical and clinical trials of drug development.	IL	BCQs, OSPE, Viva
100.	Explain the routes of administration of drugs with their advantages and disadvantages	SGD, Lab Skills	BCQs, SEQs, OSPE, Assign, Viva
101.	Describe the principles of various pharmacokinetic parameters	IL, SGD, Lab Skills	BCQs, SEQs, OSPE, Assign, Viva

102.	Describe factors affecting the pharmacokinetic parameters	IL, SGD,	BCQs, SEQs, Viva
103.	Discuss the Drug -Drug interactions at pharmacokinetic level	IL,	BCQs, SEQs, Viva
104.	Describe the principles of various pharmacodynamics parameters	IL, SGD.	BCQs, SEQs, OSPE, Assign, Viva
105.	Describe factors affecting the pharmacodynamics parameters	IL, SGD.	BCQs, SEQs, Viva
106.	Describe various types of adverse drug reactions	IL, SGD.	BCQs, SEQs, Viva
107.	Discuss the drug – drug interactions at pharmacodynamics level plot the given values on the graph paper and calculate therapeutic index and therapeutic window from it	IL, SGD.	BCQs, SEQs, Viva
108.	Describe the pharmacokinetics and pharmacodynamics of glucocorticoids	IL	BCQs, SEQ, Viva
109.	Describe the pharmacokinetics and dynamics of NSAIDS	IL, SGD, PBL	BCQs, SEQs, Assign, Viva
110.	Describe the pharmacology of opioid analgesic drugs and their antagonists	IL, SGD.	BCQs, SEQs, Viva
111.	Describe the drug treatment of migraine	IL	BCQs, SEQs, Viva
112.	Describe the drug treatment of rheumatoid arthritis	IL	BCQs, SEQs, Viva
113.	Discuss the treatment of acute gout and chronic gout	IL	BCQs, SEQs, OSPE, Viva
114.	Describe the pharmacokinetics, clinical uses, contraindications, adverse effects And toxicity of cholinoceptor activators.	IL, SGD, PBL Lab Skills	BCQs, SEQs, OSPE, Assign, Viva
115.	Describe the mechanism of action, clinical uses, contraindications, adverse effects and toxicity of cholinoceptor blocking drugs	IL, SGD, Lab Skills	BCQs, SEQs, OSPE, Assign, Viva
116.	Describe the pharmacokinetics, clinical uses, contraindications, adverse effects and toxicity of adrenoceptor activators	IL, SGD, Lab Skills	BCQs, SEQs, OSPE, Assign, Viva
117.	Describe the pharmacology of autacoids	IL	BCQs, SEQs, Viva
118.	Describe the pharmacology of antiasthmatic and antitussive drugs	IL	BCQs, SEQs, Viva
119.	Describe the pharmacokinetics and pharmacodynamics of adrenoceptor blocking drugs	IL, SGD, Lab Skills	BCQs, SEQs, OSPE, Assign, Viva
120.	Identify the sources of drugs	Lab Skills	OSPE

121.	Define the basic pharmacological terminologies	Lab Skills	OSPE
122.	Identify the pharmaceutical preparations. (Part-1)	Lab Skills	OSPE
123.	Identify the pharmaceutical preparations. (Part-2) a. Identify the units of weights and measures belonging to different systems b. Interconvert the units of weights & measures	Lab Skills	OSPE
124.	Identify the different routes (I/V, I/M, S/C, I/P, I/D, topical) of drug administration in laboratory animals (mice, rat, rabbit, frog),and manikin (Skill Lab)	Lab Skills	OSPE
125.	(a) Prepare one percent stock solution of $KMnO_4$ (b) Find out the ingredients needed to prepare 100 ml of 0.01 % solution of MnO_4 from a stock solution of 1% strength	Lab Skills	OSPE
126.	Calculate the drip rate in adults and children	Lab Skills	OSPE
127.	Find out the amount of the ingredients needed to prepare 60ml of 5% dextrose in normal saline solution	Lab Skills	OSPE
128.	Calculate the dose of drugs in adults & children	Lab Skills	OSPE
129.	Study the given case-1 and discuss it in small group session	Lab Skills	OSPE
130.	Study the given case-2 and discuss it in small group session	Lab Skills	OSPE
	PATHOLOGY		
131.	Define: atrophy, hypertrophy, hyperplasia and metaplasia. Describe the pathogenesis and clinical significance of these adaptive responses.	IL	BCQ/SEQ
132.	Define cell injury.	IL	BCQ
133.	Describe the following mechanisms of cell injury: hypoxic, ischemic/reperfusion, chemical and free-radical cell injury.	IL	BCQ/SEQ
134.	Differentiate between reversible and irreversible cell injury on the basis of biochemical and structural changes.	SGD	SEQ/BCQ
135.	Describe the mechanisms and morphological types of necrosis	SGD	BCQ
136.	Describe the mechanisms and significance of apoptosis	IL	SEQ/BCQ
137.	Describe the taxonomic criteria used to place bacteria into related groups	IL	BCQ
138.	Define bacteria, viruses, fungi, parasites	IL	BCQ
139.	Classify medically important bacteria	IL	SEQ/BCQ
140.	Describe the etiology, pathogenesis and morphology of intracellular accumulations, lipids, proteins, glycogen and pigments	SGD	BCQ
141.	Describe the pathogenesis and clinical significance of pathologic calcifications: dystrophic and metastatic calcifications	SGD	BCQ
142.	Define virulent factors, endotoxin, exotoxin, capsule and pili	IL	BCQ/SEQ
143.	Describe the determinants of bacterial pathogenesis	IL	BCQ

144.	Discuss Koch's postulate	IL	BCQ
145.	Define acute inflammation and give examples of diseases resulting from acute inflammation	IL/PBL	BCQ
146.	Describe the mechanisms of vascular changes in acute inflammation	IL	SEQ/BCQ
147.	Describe the following cellular events in acute inflammation: margination, pavementing, adhesion, diapedesis, chemotaxis, recognition, opsonization, phagocytosis and degranulation.	IL	SEQ/BCQ
148.	Discuss the role of local and systemic chemical mediators in inflammation.	IL	BCQ
149.	Describe the different morphological patterns and outcomes of acute inflammation.	IL	SEQ/BCQ
150.	Describe chronic inflammation, its causes and morphological features.	IL	BCQ
151.	Describe the role of different cells in chronic inflammation.	IL	BCQ
152.	Discuss the pathogenesis and morphology of chronic granulomatous inflammation.	IL	BCQ
153.	Describe the systemic effects of inflammation	SGD	SEQ/BCQ
154.	Discuss the mechanisms of wound healing by primary and secondary intention.	IL/PBL	BCQ
155.	Discuss the local and systemic factors influencing wound healing.	IL	SEQ/BCQ
156.	Discuss the mechanism of action of different antimicrobial drugs.	SGD	BCQ/SEQ
157.	Describe the complications of cutaneous wound healing.		BCQ/SEQ
158.	Discuss the significance of different bacterial vaccines.	SGD	SEQ/BCQ
159.	Define disinfection and sterilization.	AS	BCQ
160.	Describe the different methods of sterilization and their benefits.	IL	BCQ
161.	Discuss different types of disinfectants.	IL	BCQ
162.	Describe different factors important for bacterial growth.	IL	BCQ
163.	Discuss the significance of normal human flora.	IL	BCQ
164.	Discuss the interpretation of different lab investigations.	AS/SGD	BCQ
165.	Hyperplasia (Prostate)	Lab Skills	OSCE/VIVA
166.	Atrophy (Uterus,kidney)	Lab Skills	OSCE/VIVA
167.	Hypertrophy (Heart)	Lab Skills	OSCE/VIVA
168.	Infarction (Bowel)	Lab Skills	OSCE/VIVA
169.	Caseation necrosis (Lymph node)	Lab Skills	OSCE/VIVA
170.	Gangrene (intestine)	Lab Skills	OSCE/VIVA
171.	Calcification (uterus)	Lab Skills	OSCE/VIVA

172.	Acute Inflammation (Appendix)	Lab Skills	OSCE/VIVA
173.	Chronic Inflammation (Gall Bladder)	Lab Skills	OSCE/VIVA
174.	Hyperplasia (prostate, endometrium	Lab Skills	OSCE/VIVA
175.	Hypertrophy (heart)	Lab Skills	OSCE/VIVA
176.	Metaplasia (oesophagus	Lab Skills	OSCE/VIVA
177.	Coagulative necrosis (kidney)	Lab Skills	OSCE/VIVA
178.	Liquefactive necrosis (brain)	Lab Skills	OSCE/VIVA
179.	Caseation necrosis (Lymph Node)	Lab Skills	OSCE/VIVA
180.	Fatty change (Liver)	Lab Skills	OSCE/VIVA
181.	Hemosiderosis (liver)	Lab Skills	OSCE/VIVA
182.	Calcification	Lab Skills	OSCE/VIVA
183.	Acute inflammation (appendix)	Lab Skills	OSCE/VIVA
184.	Chronic inflammation (Gall bladder)	Lab Skills	OSCE/VIVA
185.	Chronic granulomatous inflammation (Lymph Node, Intestine)	Lab Skills	OSCE/VIVA
186.	To study different parts of a compound microscope	Lab Skills	OSCE/VIVA
187.	To perform simple staining and study the morphology of bacteria	Lab Skills	OSCE/VIVA
188.	To perform simple staining ,Gram staining	Lab Skills	OSCE/VIVA
189.	To study various types of culture media	Lab Skills	OSCE/VIVA
190.	To perform streaking of microorganism on culture media	Lab Skills	OSCE/VIVA
191.	To perform and observe antimicrobial drug sensitivity	Lab Skills	OSCE/VIVA
	PRECLINICS-PROSTHODONTICS		
192.	Define appliance, prosthesis, restoration, denture, support, stability, retention, partial dentulism, edentulous, temporary prosthesis, abutment, undercut, guide planes, angle of cervical convergence, residual ridge, and denture foundation.	SGD	SEQ/BCQ
193.	Classify different dentate and edentate oral states.	SGD	SEQ/BCQ
194.	Apply Applegate's rule on different partially dentate states.	SGD	SEQ
195.	Enlist consequences of tooth loss.	SGD	SEQ
196.	Discuss the need of prosthesis.	SGD	SEQ
197.	Delineate the phases of treatment planning of a prosthodontics patient.	SGD	SEQ
198.	Identify different types of prosthesis.	SGD	OSPE
199.	Choose appropriate treatment modality (prosthesis) according to number of missing teeth with justification.	SGD	SEQ/BCQ/OSPE

200.	Select appropriate instrument for a given procedure.	SGD	OSPE
201.	Identify equipment used in prosthodontics.	SGD	OSPE
202.	Identify materials used in prosthodontics with its use.	SGD	OSPE
203.	Differentiate between different types of cast according to material used.	SGD	OSPE
204.	Define model and die.	SGD	SEQ/VIVA
205.	Classify casts.	SGD	SEQ/VIVA
206.	Define primary and secondary impression.	SGD	SEQ/VIVA
207.	Differentiate types of secondary impressions in regard to custom tray requirements and materials used	SGD	SEQ/BCQ/OSPE
208.	Enlist impression materials for different types of impressions.	SGD	SEQ
209.	Define overjet, overbite, buccal overlap, centric relation, centric occlusion, Maximum intercuspation, curve of Spee and curve of Monsoon.	SGD	SEQ/VIVA
210.	Enlist steps of examining an edentulous mouth.	CS	SEQ/VIVA
211.	Differentiate between natural teeth and artificial dentures.	SGD	SEQ/BCQ
212.	Enumerate surfaces of complete dentures.	PW	OSPE
213.	Sequence laboratory and clinical steps of complete denture fabrication.	PW	OSPE
214.	Produce properly contoured edentulous casts using silicone molds.	PW	OSPE/LB
215.	Identify the surfaces of the cast.	PW	OSPE
216.	Mark denture bearing area on the cast.	PW	OSPE
217.	Recognize anatomic landmarks and denture extensions/borders on the edentulous cast.	PW	OSPE
218.	Differentiate between custom tray and baseplate.	PW	OSPE
219.	Enlist different materials used for temporary and permanent baseplates with their properties	SGD	SEQ
220.	Identify common relief areas on edentulous maxilla and mandible.	PW	OSPE
221.	Enlist different methods of providing relief.	SGD	SEQ
222.	Provide relief before making a baseplate.	PW	OSPE/LB
223.	Fabricate permanent baseplates with heat cure acrylic resin.	PW	OSPE/LB
224.	Construct occlusal rims for tooth setup following proper guidelines.	PW	OSPE/LB
225.	Define articulation and articulators.	SGD	SEQ/VIVA
226.	Enlist types of articulators.	SGD	SEQ/VIVA
227.	Seal upper and lower occlusal rims in orthognathic relation.	PW	OSPE
228.	Articulate the upper and lower cast on a semiadjustable articulator.	PW	OSPE/LB

229.	Perform zeroing of a semi adjustable articulator	PW	OSPE
230.	Describe briefly different selection methods for choosing the shape, size and color of artificial teeth.	CS	SEQ
231.	Enlist types of artificial teeth.	SS	SEQ/VIVA
232.	Differentiate between porcelain and acrylic teeth.	SS	SEQ/BCQ/OSPE
233.	Elucidate the relationship of teeth to the casts with proposed guidelines for tooth setup.	PW	OSPE/SEQ/BCQ
234.	Orient the anterior upper teeth according to five planes in the occlusal rims.	PW	OSPE/LB
235.	Orient the anterior lower teeth according to five planes in occlusal rims.	PW	OSPE/LB

	MODULE-I		
	At the end of the module, students should be able To;		
	LEARNING OBJECTIVES	**MITS**	**ASSESSMENT TOOLS**
	ORAL PATHOLOGY		
1.	Describe the developmental disturbances in number and shape of teeth.	IL	BCQs/SEQs
2.	Enlist the syndromes associated with hypodontia.	SGD	BCQs
3.	Discuss briefly about hypohidrotic ectodermal dysplasia.	SGD	OSPE
4.	Define hyperdontia; discuss its various types and its implication on oral health.	IL	BCQs
5.	Compare the taurodont tooth with a normal tooth on a radiograph	PW	OSPE
6.	Describe the causes and classification of environmental enamel hypoplasia.	IL	BCQs
7.	Demonstrate the different steps involved in the preparation of slide.	PW	OSPE
8.	Recognize and interpret anatomical features on a panoramic radiograph.	PW	OSE
9.	Describe the developmental disturbances in structure of teeth.	IL/SGD	SEQs
10.	Identify the different types of intraoral x-rays and study OPG x-rays.	PW	OSPE
11.	Describe the causes and clinical features of pulpitis.	IL	BCQs/SEQs
12.	Discuss the histopathological features of pulpitis.	IL	BCQs/SEQs
13.	Describe the clinical and histological features of pulp polyp	IL	BCQs/SEQs/OSPE

14.	Discuss briefly about pulp calcification and pulp necrosis.	IL	BCQs
15.	Interpret the carious lesions on a periapical x-ray.	PW	OSPE
16.	Locate the normal anatomical landmarks on orthopentamogram x-ray.	PW	OSPE
17.	Describe the acute and chronic periapical periodontitis.	IL	BCQs/SEQs
18.	Describe the sequelae of pulpitis.	SGD	SEQs
19.	Define Dental caries.	IL	SEQs
20.	Describe the various theories of cariogenesis.	IL	BCQs/SEQs
21.	Explain the widely accepted theories of dental caries.	IL	SEQs
22.	Describe the role of microorganism in the etiology of dental caries	SGD	BCQs/SEQs
23.	Describe the clinical aspects of dental caries.	IL	SEQs/OSPE
24.	Discuss the contributing factors in dental caries.	SGD	BCQs/SEQs
25.	Explain the histopathology of enamel and dentin caries.	IL	SEQs**/**OSPE
26.	Describe the methods of caries prevention.	IL	SEQs
27.	Define the following terms: Incipient caries, rampant caries, nursing bottle caries, arrested caries.	IL/SGD	BCQs/SEQs
28.	Discuss the route of spread of periapical infections.	IL	SEQs
29.	Describe the etiology and clinical features of cellulitis.	IL	BCQs/SEQs
30.	Describe the clinical features and complications of Ludwig's angina.	IL	BCQs
31.	a. Perform Blood sugar test. b. Make a blood smear to examine the blood cells	PW	OSPE
32.	Learn the techniques of using Field's stain	PW	OSPE

Commencement of Module		Weekly Schedule of Module-I ORAL PATHOLOGY	
Activity	**Week**	**Lecture 1**	**Lecture 2**
Academic Session – BDS Third Professional	Week- 1	Anomalies of number of teeth **LO (1-5)**	Anomalies of Size and Shape of teeth I **LO (1)**
	Week- 2	Anomalies of Size and Shape of teeth II **LO (1)**	Anomalies of Structure of teeth **LO (6-9)**
	Week- 3	Amelogenesis imperfect **LO (10)**	Dentinogenesis Imperfecta Hypercementosis **LO (10)**
	Week- 4	Definition and Etiology of dental Caries **LO (19-22, 24)**	Pathology of dental caries **LO (23, 27)**
	Week- 5	Histopathology of enamel caries **LO (25)**	Histopathology of dentin caries **LO (25)**
	Week- 6	Prevention of dental caries **LO (26)**	Pulpitis (Clinical features, Aetiology and Histopathology) **LO (11-12, 18)**
	Week- 7	Pulp polyp, Pulp calcification & Necrosis **LO (13 - 14)**	Periapical Periodontitis (Acute and chronic) **LO (17)**
	Week- 8	Spread of oral infections 1 **LO (29-30)**	Spread of oral infections II **LO (29-30)**
	Week- 9	Revision	**CAT -2**
	Week- 10	**Guest Lecture**	Case-Based Presentation of Students
	Week-10	**THEORY AND VIVA EXAMINATION**	

Weekly schedule of Module I SCIENCE OF DENTAL MATERIALS			
WEEK NO.	**LECTURE 1**	**LECTURE 2**	**LECTURE 3**
Week – 1	Introduction to science of dental materials **(LO = 01-04)**	Introduction to science of dental materials **(LO = 05-08)**	Properties used to characterize materials **(LO = 09- 12)**
Week – 2	Properties used to characterize materials **(LO = 13- 15)**	Properties used to characterize materials **(LO = 16-18)**	Properties used to characterize materials **(LO = 19- 21)**
Week – 3	Properties used to characterize materials **(LO = 22-25)**	Properties used to characterize materials **(LO = 25-27)**	**TEST** **(LO = 01- 27)**
Week – 4	Gypsum Products **(LO = 27- 30)**	Gypsum Products **(LO = 31-35)**	Gypsum Products **(LO = 36-40)**
Week – 5	Gypsum Products **(LO = 41-44)**	Dental Waxes **(LO = 45- 47)**	Dental Waxes **(LO = 48-50)**
Week – 6	Investment Materials **(LO = 51-53)**	Investment Materials **(LO = 54-57)**	**TEST** **(LO = 27-57)**
Week – 7	Synthetic Polymers **(LO = 58-59)**	Synthetic Polymers **(LO = 60-61)**	Synthetic Polymer **(LO = 62)**
Week –8	Synthetic Polymers **(LO = 63)**	Synthetic Polymers **(LO = 64-65)**	Denture Base Polymers **(LO = 66- 67)**
Week -9	Denture base polymers **(LO = 68-72)**	Denture base polymers **(LO = 73-75)**	Denture base polymers **(LO = 76-79)**
Week -10	Denture base polymers **(LO = 80-84)**	Denture lining materials **(LO = 85- 87)**	Denture lining materials **(LO = 88-89)**
Week -11	Denture lining materials **(LO = 91-93)**	Artificial Teeth **(LO = 94 -96)**	Artificial Teeth **(LO = 97- 98)**
Week –12	Revision	Revision	Revision
Week-13	**THEORY EXAMINATION**		
Week 14	**VIVA EXAMINATION**		

WEEKLY SCHEDULE OF MODULE I PHARMACOLOGY			
Week Number	**Lecture-1**	**Lecture-2**	**Lecture-3**
Week- 1	Scope of pharmacology/ Rational use of drugs **99**	Preclinical and clinical trials-**99**	Routes of administration of drugs-**100**
Week- 2	Pharmacokinetic principles: Drug Absorption & Distribution-**101**	Drug Metabolism & Excretion-**101**	Pharmacodynamics Principles: Mechanism of action of drugs-**102-103**
Week- 3	Pharmacodynamics Principles: Drug Response-**104-105**	Adverse drug reactions-**106**	Pharmacokinetic drug-drug interactions-**107**
Week- 4	Pharmacodynamics drug-drug interactions-**108**	Nonsteroidal anti-inflammatory drugs-**109**	Nonsteroidal anti- inflammatory drugs-**109**
Week- 5	Opioid analgesic drugs-**110**	Opioid analgesic drugs-**110**	Drug treatment of migraine-**111**
Week- 6	**Class Test 99-111**	Histamine and Antihistamine-**118**	Drug treatment of Rheumatoid arthritis-**112**
Week- 7	Drug treatment of acute and chronic gout-**113**	Cholinoceptor activating drugs-1-**114**	Cholinoceptor activating drugs-2-**115**
Week- 8	Cholinoceptor blocking drugs-1-**115**	Cholinoceptor blocking drugs-2-**115**	Adrenoceptor activating drugs-1-**116**
Week- 9	Adrenoceptor activating drugs-2-**116**	Drug treatment of asthma-**118**	Adrenoceptor blocking drugs-1-**119**
Week- 10	Adrenoceptor blocking drugs-2-**119**	Revision-General pharmacology-**120-130**	Revision-General pharmacology
Week- 11	Revision-Cholinergic agonist/antagonist	Revision Adrenergic agonist/antagonist	Revision AnaIgesics
Week-12	REVISION	REVISION	REVISION
Week -13	**Theory Examination**		
Week -14	**Viva Examination**		

WEEKLY SCHEDULE OF MODULE I DEPARTMENT OF PATHOLOGY		
WEEK NO.	**LECTURE 1**	**LECTURE 2**
Week – 1	Adaptation 1 (LO= 131)	Bacteria compared with other microorganisms (LO=139)
Week – 2	Adaptation 2 (LO=)	Structure of Bacteria-I (L0=140)
Week – 3	Mechanism of cell injury (LO=132-135)	Structure of Bacteria-II (LO=137)
Week – 4	Apoptosis 1 (LO= 136)	Classification of Bacteria (LO=138)
Week – 5	Apoptosis 2(LO=)	Normal Flora of human body(LO=163)
Week – 6	Acute inflammation 1(LO=144-147)	Pathogenesis of Bacterial infection-I(LO=196)
Week – 7	Acute inflammation 2(LO=149)	Pathogenesis of Bacterial Infection-II(LO=152-)
Week –8	Chemical mediators of inflammation (LO= 148)	Laboratory Diagnosis(LO=217)
Week -9	Chronic inflammation (LO=152,184)	Antimicrobial Drugs (LO=186-191)
Week -10	Tissue repair and wound healing (LO=155-157)	Antimicrobial Vaccines (LO=158)
Week -11	Pathological aspects of repair (LO=)	Sterilization and Disinfection(LO=159-151)
Week –12	REVISION	REVISION
Week-13	**THEORY EXAMINATION**	
Week-14	**VIVA EXAMINATION**	

Commencement of Module IV		Weekly Schedule of Module I Prosthodontics	
Activity	**Week**	**Laboratory Session**	**Tutorial Session**
Pre- Clinical Academic Session – BDS Second Professional	1.	Lab – Identify materials and equipment	Introduction of Prosthodontics Prosthodontics Terminologies
	2.	Mold pouring	Classification of partially dentate arch
	3.	Applied Anatomical Land mark Baseplate wax up demonstration	Introduction to edentulous state- consequences of tooth loss
	4.	Practice session -Baseplate wax up	Treating Prosthodontics patients- Prosthodontics treatment modalities
	5.	Baseplate Curing	Anatomic Landmarks- 1
	6.	Baseplate Finishing	Anatomic Landmarks- 2
	7.	Occlusal rims - Demonstration	Introduction, components & steps of CD
	8.	Occlusal rims – Laboratory work	Impressions for complete & partially dentate state
	9.	Programming of semi-adjustable articulator Occlusal rims – Laboratory work	Casts & Dies
	10.	Upper anterior tooth setup- demonstration	Record bases & occlusion rims
	11.	Laboratory Work	Articulators and articulation
	12.	Lower anterior setup- demonstration	Revision/Class Test/ Laboratory work
	13.	**MODULE EXAMINATION**	
	14.		

MODULE-II

At the end of the module, students should be able to:

S.No	Objectives	Teaching strategy	Assessment tool
	ORAL PATHOLOGY		
1.	Enumerate the inflammatory, metabolic and endocrine disorders of bone.	IL	BCQs/SEQs
2.	Enumerate the developmental disorders of bone.	IL	BCQs/SEQs
3.	Explain types and clinical features of osteogenesis imperfecta.	IL/SGD	BCQs/SEQs/ OSPE
4.	Identify the clinical slide of osteogenesis imperfecta.	PW	OSPE
5.	Describe the clinical features of marble bone disease (osteopetrosis).	IL/SGD	BCQs/SEQs
6.	Differentiate between cleidocranial dysplasia and achondroplasia.	IL	BCQs/SEQs/ OSPE
7.	Classify the fibro-osseous lesions.	IL	BCQs/SEQs/ OSPE
8.	Differentiate between monostotic and polyostotic fibrous dysplasia.	SGD	OSPE
9.	Identify the clinical picture of cleidocranial dysplasia.	PW	OSPE
10.	Interpret the radiological features of fibrous dysplasia of maxilla on an OPG x-ray.	PW	OSPE
11.	Discuss the clinical features of cherubism.	SGD	BCQs/SEQs
12.	Discuss the radiographic features of cherubism	SGD	BCQs/SEQs
13.	Understand the mechanism of healing of an extraction socket.	SGD	BCQs
14.	Discuss briefly about dry socket.	SGD	BCQs
15.	Define osteomyelitis. Describe its classification.	IL	BCQs/SEQs
16.	Enumerate the metabolic and endocrine disorders of bone.	IL	BCQs/SEQs
17.	Classify the tumors of bone.	IL	BCQs/SEQs
18.	Recognize the clinical presentation of bony exostosis.	SGD	BCQs/SEQs
19.	Discuss the types of giant cell lesions.	IL	SEQs
20.	Discuss briefly the process of healing of extraction socket.	SGD	BCQs
21.	Define the following terms: Attrition, abrasion, erosion and abfraction.	IL	BCQs/SEQs/ OSPE
22.	Discus the causes of pathological attrition.	SGD	BCQs/OSPE
23.	Classify the types of abrasion of teeth.	SGD	BCQs/OSPE
24.	Describe the internal and external resorption of teeth.	SGD	SEQs

25.	Enlist the causes of discoloration of teeth	SGD	BCQs/SEQs
26.	Classify the infective lesions of oral mucosa (bacterial, viral and fungal infections).	IL	BCQs/SEQs/ OSPE
27.	Describe the clinical features and oral manifestations of tuberculosis.	IL	BCQs/SEQs
28.	Describe the etiology and clinical features of acute necrotizing ulcerative gingivitis.	IL	BCQs/SEQs
29.	Describe the types and oral manifestations of syphilis.	IL	BCQs/SEQs
30.	Differentiate between acquired and congenital syphilis.	SGD	BCQs/SEQs
31.	Discuss briefly about actinomycosis, leprosy and sarcoidosis.	IL	BCQs/SEQs
32.	Describe the clinical features of herpetic gingivostomatitis.	SGD	BCQs/SEQs
33.	Discuss the clinical features of herpes zoster.	IL	BCQs/SEQs
34.	Classify oral candidosis. Discuss the clinical features of thrush and angular cheilitis.	IL	BCQs/SEQs/ OSPE
35.	Enlist the factors predisposing to oral candida infection	SGD	SEQs
36.	Discuss the classification of oral candidosis	IL	SEQs
37.	Identify clinical images and discuss its etiology and clinical presentation (MRG,AC, GT, Thrush)	SGD/PW	SEQs/OSPE
38.	Enumerate the immune mediated oral diseases.	IL	BCQs/SEQs
39.	Identify the clinical pictures of vesiculobullous disease	PW	OSPE
40.	Discuss the types, etiopathogenesis, clinical and histological features of pemphigus.	IL	BCQs/SEQs
41.	Describe the clinical and histological features of mucous membrane pemphigoid.	IL	SEQs/OSPE
42.	Discuss the erythema multiforme.	IL	SEQs/OSPE

	MODULE II **At the end of the module, students should be able to:**		
	SCIENCE OF DENTAL MATERIALS	**MITS**	**ASSESSMENT TOOLS**
1.	Identify the process of casting as a means of shaping metal and alloys	IL	BCQs, SEQs,VivaOSPE, Assign
2.	Give examples of cast restorations and prosthesis	IL	BCQs, SEQs. OSPE, Assign
3.	State the components of an investment mould	IL	BCQs, SEQs, OSPE, Assign
4.	Discuss the different types of casting machines	IL	BCQs, SEQs, OSPE, quiz
5.	Enlist the most common faults which may occur in a casting	IL	SEQs
6.	Discuss reasons for faults in casting	PBL	BCQs, SEQs, OSPE, PBL
7.	Suggest ways to avoid such faults	IL	SEQs, OSPE, Assign

8.	Outline the clinical applications of metal and alloys in dentistry	IL	SEQs, Assign, Viva
9.	Discuss the shaping of metal and alloys through casting, cold working and amalgamation	IL	BCQs, SEQs, OSPE, Viva
10.	Appreciate the crystalline structure of metals	IL	SEQs, Viva, Assign
11.	Relate yield stress, dislocation and ductility/malleability	IL	BCQs, SEQs,
12.	Discuss quenching and coring	IL	BCQs, SEQs, Viva, Assign
13.	Explain cold working and its application in dentistry	IL	SEQs, OSPE, Viva.
14.	Discuss the structure and properties of alloys	IL	SEQs, OSPE, Viva.
15.	Explain cooling curves for metal and alloys	IL	BCQs, SEQs, OSPE.
16.	Discuss the phase diagrams of solid-solution alloy	IL	SEQs, OSPE
17.	Discuss eutectic phase diagrams	IL	SEQs, OSPE
18.	Discuss properties and use of a eutectic alloy	IL	BCQs, SEQs, Viva.
19.	Differentiate between noble and base metals	IL	SEQs, Viva
20.	Enlist the properties of pure gold	IL	SEQs, OSPE, Viva
21.	Discuss cold welding in relation to pure gold filling	IL, VD	BCQs, SEQs, Viva
22.	Discuss advantages and disadvantages of pure gold filling	IL	SEQs, Viva
23.	Discuss the composition, properties and clinical uses of different type of casting gold alloys	IL	SEQs, OSPE, Viva, Assign
24.	Discuss hardening heat treatment	IL	SEQs, Viva, Assign
25.	Differentiate between soldering and brazing	IL	BCQs, SEQs
26.	Discuss the use of noble alloys in metal-bonded ceramic restorations	IL	BCQs, SEQs
27.	Discuss the composition and properties of cobalt-chromium alloys and nickel chromium alloys	IL	BCQs, SEQs, Viva,
28.	Discuss the manipulation of base metal casting alloys highlighting the fusion temperatures, mode of melting, type of investment material used, and methods of trimming and polishing	IL	BCQs, SEQs, OSPE, Viva, Assign
29.	Discuss the process of electrolytic polishing	IL, VD	SEQs, Viva
30.	Compare and contrast the properties of base metal casting alloys and castinggold alloys	IL	BCQs, SEQs
31.	Correlate the clinical applications of base metal alloys with their properties	PBL	BCQs, SEQs, Viva, PBL
32.	Discuss the types of base metal casting alloys for fixed restorations according to ISO standard	IL	BCQs, SEQs, OSPE, Viva, Assign
33.	Discuss the biocompatibility of various constituents of base metal casting alloys	PBL	PBL, BCQs, SEQs
34.	Discuss formation of a wrought alloy	IL	BCQs, SEQs

35.	State the composition of Steel	IL	BCQs, SEQs
36.	Explain the iron-carbon phase diagram	IL	SEQs, Viva
37.	Identify the phases of cementite and ferrite and discuss their properties	IL	SEQs, OSPE, Assign
38.	Explain the terms: austenite, cementite, ferrite, pearlite, eutectoid alloy, martensite, hypereutectoid alloy and hypoeutectoid alloy	IL	BCQs, SEQs, Viva,
39.	Explain the hardening and tempering cycles of heat treatment done on steel	IL	SEQs, Assign
40.	Differentiate between steel and stainless steel	IL	BCQs, SEQs, OSPE, Viva, Assign
41.	Discuss properties and clinical uses of austenitic and martensitic stainless steel	IL	BCQs, SEQs, OSPE, Viva, Assign, Ppt, Quiz
42.	Discuss advantages and disadvantages of stainless steel as a denture base	IL	BCQs, SEQs, Viva
43.	Discuss the requirements of wire	IL	SEQs, OSPE, Viva
44.	Explain the use of various materials for making wires	IL	SEQs, Assign
45.	Develop skills at bending wire into alphabets and clasps	SD	PW
46.	State the composition of different types of dental ceramic	IL	SEQs, Assign
47.	State the uses of dental porcelain	IL	BCQs, SEQs, Viva
48.	Explain the manipulation of porcelain with respect to its compaction, firing and glazing	IL, VD	BCQs, SEQs, Assign
49.	Enlist the properties of porcelain	IL	SEQs, Viva, Assign
50.	Discuss aluminous porcelain	IL	BCQs, SEQs, Viva,
51.	Explain the formation of sintered alumina core ceramics	IL	SEQs, Viva, Assign
52.	Discuss injection molded and pressed ceramics	IL	SEQs, Viva, Assign
53.	Discuss cast glass and polycrystalline ceramics	IL	BCQs, SEQs, Assign
54.	Discuss the advantages of CAD-CAM restorations	IL, VD	BCQs, SEQs, OSPE, Viva
55.	Discuss porcelain veneers and alternate materials available for veneers	IL	BCQs, SEQs, OSPE, Viva, Assign
56.	Discuss porcelain fused to metal restorations highlighting the requirements for alloys available for porcelain bonding	PBL	BCQs, SEQs, PBL
57.	Compare the properties of different types of alloy used in PFM	IL	Viva, Assign
58.	Classify impression materials on the basis of viscosity and elastic properties	IL, SGD	BCQs, SEQs, OSPE, Viva, Assign, Quiz, Ppt
59.	Classify impression materials on the basis of viscosity and elastic properties	IL	SEQs, OSPE, Viva
60.	Discuss the ideal requirements of impression materials	IL	SEQs, OSPE, Viva, Assign, Quiz, Ppt
61.	Define the terms: elastic, non-elastic/rigid and viscoelastic	IL	SEQs, OSPE, Viva, CQ

62.	Discuss clinical considerations (choice of material, trays, tissue management, technique, cross infection control).	IL	SEQs, OSPE, Viva,
63.	Classify impression trays	IL, SD	BCQs, SEQs, Viva
64.	Discuss the use of tray adhesives	IL	BCQs, SEQs
65.	Discuss impression techniques.	IL, SD	BCQs, SEQs, OSPE, Viva, Assign, Quiz
66.	Discuss infection control	IL	SEQs, OSPE, Viva
67.	Classify non- elastic impression materials.	IL	BCQs, SEQs, Viva
68.	Discuss composition, manipulation, setting reaction, properties and uses of impression plaster, impression compound ,impression waxes and zinc oxide	IL, SD	BCQs, SEQs,Viva
69.	Classify elastic impression materials.	IL	BCQs, SEQs, OSPE
70.	Differentiate between sol and gel forms	IL	SEQs
71.	Discuss reversible hydrocolloids with respect to their composition, type's properties, handling and uses.	IL	BCQs, SEQs, OSPE, Viva, Assign, Quiz
72.	Discuss irreversible hydrocolloids with respect to their composition, properties, handling and uses	IL, SD	BCQs, SEQs, Viva, PW
73.	Discuss their advantages and disadvantages	IL	SEQs
74.	Define modified alginate	IL	SEQs, OSPE, Viva
75.	State methods for disinfection of alginate impression	IL	BCQs, SEQs
76.	Discuss the making of an alginate impression through video demonstration	IL, VD, SD	PW
77.	Enlist the types of synthetic elastomers	IL	SEQs, OSPE
78.	Classify synthetic elastomers according to consistency	IL	SEQs, OSPE, Viva
79.	Discuss their composition ,properties, handling, setting reaction and clinical uses	IL	BCQs, SEQs, Viva,
80.	Compare and contrast their properties, advantages and disadvantages.	IL	BCQs, SEQs, CQ
81.	State methods for disinfection of each type	IL	BCQs, SEQs, OSPE
82.	Discuss the process for a putty wash type impression through video demonstration	VD	PW
	PHARMACOLOGY		
83.	Describe the pharmacology of various types of diuretics	IL, SGD	BCQs, SEQs, Viva
84.	Describe the pharmacokinetics and pharmacodynamic of antihypertensive drugs	IL, SGD, PBL, Assign	BCQs, SEQs, Viva,
85.	Explain the common drug-drug interactions of antihypertensive agents	SGD	BCQs, SEQs, Viva
86.	Describe the drugs used in the treatment of heart failure	IL, SGD, Assign	BCQs, SEQs, Viva
87.	Describe the common types of atrial and ventricular arrhythmias	IL	BCQs, SEQs, Viva

88.	Describe the drugs used in various types of cardiac arrhythmias	IL	BCQs, SEQs, Viva
89.	Describe the pharmacology of vasodilator drugs with respect to angina pectoris	ILSGD	BCQs, SEQs, Viva
90.	Describe parenteral anticoagulant drugs	IL	BCQs, SEQs, Viva
91.	Describe oral anticoagulants	IL	BCQs, SEQs, Viva
92.	Describe thrombolytic and antiplatelet drugs	IL	BCQs, SEQs, Viva
93.	Explain the pharmacology of coagulants	IL	BCQs, SEQs, Viva
94.	Describe the pharmacodynamic and pharmacokinetics of drugs used in anemias	SGD	BCQs, SEQs, Viva
95.	Describe the pharmacology of antihyperlipidemic drugs	IL, SGD,PBL, Assign	BCQs, SEQs, Viva
96.	Classify penicillin's on the basis of their clinical spectrum	IL, SGD	BCQs, SEQs, Viva
97.	Compare the pharmacological properties of penicillin's	IL, SGD	BCQs, SEQs, Viva
98.	Describe the pharmacokinetics and pharmacodynamic of cephalosporin's	IL	BCQs, SEQs, Viva
99.	Explain the clinical uses and adverse effects of carbapanems&monobactams BCQs, SEQs, Viva	SGD	BCQs, SEQs, Viva
100.	Explain the mechanism of action, clinical uses and adverse effects of vancomycin	SGD	BCQs, SEQs, Viva
101.	Describe the pharmacokinetic properties, mechanism, clinical uses and adverse effects of tetracycline's	IL, SGD	BCQs, SEQs, Viva
102.	Describe the pharmacokinetic properties, mechanism, clinical uses and adverse effects of aminoglycosides	IL	BCQs, SEQs, Viva
103.	Describe the pharmacokinetic properties, mechanism, clinical uses and adverse effects of macrolides	IL	BCQs, SEQs, Viva
104.	Describe the pharmacokinetic properties, mechanism, clinical uses and adverse effects of chloramphenicol	IL	BCQs, SEQs, Viva
105.	Describe the pharmacokinetic properties, mechanism, clinical uses and adverse effects of clindamycin	IL	BCQs, SEQs, Viva
106.	Describe the pharmacokinetic and dynamic properties of sulfonamides	IL	BCQs, SEQs, Viva
107.	Describe the pharmacokinetic and dynamic properties of fluoroquinolones	IL	BCQs, SEQs, Viva
108.	Explain the first line drug therapy for tuberculosis	IL, SGD	BCQs, SEQs, Viva
109.	Explain the 2nd line drug therapy for tuberculosis	SGD	BCQs, SEQs, Viva
110.	Describe the mechanism of action, clinical uses and adverse effects of various types of antiviral drugs	IL	BCQs, SEQs, Viva
111.	Classify anticancer drugs based on cell cycle specificity	IL	BCQs, SEQs, Viva
112.	Describe mechanism of action and adverse effects of anticancer drugs	IL, SGD	BCQs, SEQs, Viva
113.	Describe mechanism of resistance to anticancer drugs	IL, SGD	BCQs, SEQs, Viva
114.	Describe pharmacology of emetics and antiemetic drugs	IL	BCQs, SEQs, Viva

115.	Describe the drug treatment of acid peptic disease	IL, SGD	BCQs, SEQs, Viva
116.	Describe the pharmacology of purgatives and anti-diarrheal drugs	IL	BCQs, SEQs, Viva
117.	Prepare dilutions from 1mg of the given drug having strength of 10^{-3} up to 10^{-8}	Lab Skills	OSPE
118.	Dilution	Lab Skills	OSPE
119.	Interpret the effect of antibiotic drugs on bacterial colonies	Lab Skills	OSPE
120.	Interpret the effects of given drugs on the eyes of rabbit	Lab Skills	OSPE
121.	Interpret the effects of agonist and antagonist drugs on the eyes of rabbit	Lab Skills	OSPE
122.	Identify the parts of kymograph and organ bath assembly	Lab Skills	OSPE
123.	Interpret the effects of different dilutions of a given drug on an isolated piece of rabbit intestine. (Drug-A)	Lab Skills	OSPE
124.	Interpret the effects of different dilutions of a given drug on an isolated piece of rabbit intestine. (Drug-B)	Lab Skills	OSPE
	PATHOLOGY		
125.	Describe pathophysiology of edema with special emphasis on CCF.	ILD/SGD	BCQ/SEQ
126.	Classify gram positive cocci	SGD	SEQ/BCQ
127.	Discuss the pathogenesis, clinical features and diagnosis of staphylococcal infections	ILD/SGD	BCQ
128.	Describe the pathogenesis ,clinical features and diagnosis of streptococcal infection	ILD/SGD	SEQ/BCQ
129.	Define thrombosis and discuss the pathogenesis of thrombosis	ILD/SGD	BCQ/SEQ/AS
130.	Describe the possible consequences of thrombosis and embolism.	ILD/SGD	BCQ
131.	Describe various types of emboli.	ILD/SGD	SEQ/BCQ
132.	Define spores, resistance and incubation	SGD	BCQ
133.	Classify gram positive bacilli as spore forming or non spore forming.	ILD/SGD	BCQ/SEQ
134.	Illustrate the different features of clostridium species.	ILD/SGD	OSCE
135.	Describe the pathogenesis, clinical features and diagnosis of diphtheria.	ILD/SGD	BCQ/AS/SEQ
136.	Classify gram negative rods and describe gram negative lactose fermenting rods	ILD/SGD	BCQ/AS
137.	Describe infarction with special reference to the factors that influence the development of an infarct.	ILD/SGD	BCQ/SEQ
138.	Describe the clinical feature, pathogenesis and diagnosis of infections by different species of *E. coli.*	ILD/SGD	BCQ
139.	Describe the pathogenesis of different types of shock with their causes.	ILD/SGD	OSCE
140.	Define different terms related to Neoplasia: dysplasia,	ILD/SGD	BCQ

	anaplasia, atypia.		
141.	Describe the nomenclature of tumors.	ILD/SGD	SEQ/BCQ
142.	Describe the pathogenesis, clinical manifestation and lab investigation of Helicobacter pylori.	ILD/SGD	BCQ
143.	State lab investigation and properties of salmonella.	ILD/SGD	SEQ/BCQ
144.	Compare the characteristics of benign and malignant tumors.	ILD/SGD	BCQ
145.	Recognize the infections cause by the Pseudomonas.	ILD/SGD	BCQ
146.	State gram negative cocci.	ILD/SGD	SEQ/BCQ
147.	Describe the role of physical, chemical and viral carcinogens in tumorigenesis.	ILD/SGD	BCQ/SEQ
148.	Describe the pathogenesis, clinical manifestation and diagnosis of Mycobacteria.	ILD/SGD/PBL	BCQ/SEQ
149.	Identify the basic structure of viruses and Classify the medically important viruses	ILD/SGD	BCQ
150.	Describe the grading and staging systems of tumors.	SGD	BCQ/AS
151.	Describe the structure, pathogenesis, diagnosis and immunization of influenza virus	ILD/SGD	BCQ
152.	Describe the host defenses against tumours.	ILD/SGD	BCQ/SEQ
153.	Describe the pathogenesis, clinical features and diagnosis of Viral Hepatitis.	ILD/SGD	BCQ/SEQ
154.	Distinguish between different type of Hepatitis: Hepatitis A, B, C and E	ILD/SGD	OSCE/BCQ
155.	Describe viral markers of hepatitis.	ILD/SGD	BCQ/SEQ
156.	Discuss the local and systemic effects of tumors.	ILD/SGD	SEQ/BCQ
157.	Describe the structure and clinical manifestations of human immunodeficiency virus	ILD/SGD	BCQ
158.	Discuss the laboratory diagnosis of tumors.	ILD/SGD	SEQ/BCQ
159.	Describe tumor markers and discuss the role in diagnosis of disease	ILD/SGD	BCQ
160.	Keloid	Lab Skills	OSCE/VIVA
161.	Leiomyoma	Lab Skills	OSCE/VIVA
162.	Follicular adenoma	Lab Skills	OSCE/VIVA
163.	Fibroadenoma (Breast)	Lab Skills	OSCE/VIVA
164.	Dermoid cyst	Lab Skills	OSCE/VIVA
165.	Carcinoma-uterus	Lab Skills	OSCE/VIVA
166.	Carcinoma-Breast	Lab Skills	OSCE/VIVA
167.	Keloid	Lab Skills	OSCE/VIVA
168.	Granulation tissue	Lab Skills	OSCE/VIVA

169.	Thrombus	Lab Skills	OSCE/VIVA
170.	Lieomyoma (uterus)	Lab Skills	OSCE/VIVA
171.	Fibroadenoma (breast	Lab Skills	OSCE/VIVA
172.	Follicular adenoma (thyroid	Lab Skills	OSCE/VIVA
173.	Leimyosarcoma (uterus)	Lab Skills	OSCE/VIVA
174.	Breast carcinoma	Lab Skills	OSCE/VIVA
175.	To study Staphylococci and laboratory investigations for their Identification	Lab Skills	OSCE/VIVA
176.	To study Streptococci and laboratory investigations for their Identification	Lab Skills	OSCE/VIVA
177.	To study Mycobacterium and laboratory investigations for its Identification	Lab Skills	OSCE/VIVA
178.	To study Salmonella and laboratory investigations for its identification	Lab Skills	OSCE/VIVA
179.	To study Escherichia coli and laboratory investigations its identification	Lab Skills	OSCE/VIVA
180.	To perform different biochemical reactions for identification of Microorganisms	Lab Skills	OSCE/VIVA
	PRECLINICS-PROSTHODONTICS		
181.	Orient the posterior teeth according to five planes in occlusal rims	PW	OSPE
182.	Define the compensating curves.	SGD	SEQ/VIVA
183.	Define balanced occlusion and articulation.	SGD	SEQ/VIVA
184.	Perform final esthetic wax up of complete denture.	PW	OSPE
185.	Achieve bilateral occlusal contacts in centric relation according to BULL's rule on the articulator.	PW	OSPE
186.	Identify the components of the flask.	PW	OSPE
187.	Invest removable partial and fixed prosthesis by soft plaster using open technique in a flask	PW	OSPE
188.	Enumerate the principles of flasking.	SGD	SEQ/BCQ
189.	Understand the use of separating media during investment procedure.	PW	SEQ/BCQ
190.	Perform dewaxing of the investment mould completely using curing pots.	PW	OSPE
191.	Apply cold mould seal without pooling of liquid in the investment mould.	PW	OSPE
192.	Identify the stages of heat cure acrylic resin setting.	PW	OSPE
193.	Pack the mould with acrylic resin at appropriate setting stage.	PW	OSPE
194.	Undertake three trial closures before curing commences using hydraulic and manual press	PW	OSPE

195.	Enlist the different curing cycles for heat cure acrylic resin.	SGD	SEQ/VIVA
196.	Cure the removable prosthesis using curing pots.	PW	OSPE
197.	Invest the prosthesis without its breakage.	PW	OSPE
198.	Finish and polish the prosthesis.	PW	OSPE
199.	Assort the finishing materials in sequence	PW	OSPE
200.	Sort the steps of finishing of acrylic prosthesis	PW	OSPE
201.	Elucidate the finishing and polishing materials for acrylic prosthesis.	SGD	SEQ/BCQ
202.	Balance occlusion using BULL's rule by using proper armamentarium and technique	PW	OSPE
203.	Justify the prescription of removable partial denture in a patient.	SGD	BCQ/VIVA
204.	Classify removable partial dentures according to support.	SGD	BCQ/VIVA
205.	Enumerate the types of removable partial dentures on the basis of material, uses and clinical requirements.	SGD	BCQ/VIVA
206.	Outline different components of removable partial dentures with their basic functions	SGD	BCQ/VIVA
207.	List the uses of interim removable partial dentures.	SGD	BCQ/VIVA
208.	Justify the prescription of interim removable partial dentures.	SGD	BCQ/VIVA
209.	Outline clinical and laboratory procedures for interim removable partial dentures.	SGD	BCQ/VIVA
210.	Outline clinical and laboratory steps of fabrication for cast partial dentures.	SGD	VIVA
211.	Identify different stages of laboratory procedures	PW	OSPE
212.	Sort laboratory procedures in the proper sequence	PW	OSPE
213.	Classify crowns.	SGD	SEQ/OSPE
214.	Select appropriate crown material and crown type for a given case.	SGD	OSPE
215.	Classify fixed partial dentures.	SGD	VIVA
216.	Identify components.	SGD	VIVA
217.	Select appropriate type of FPD for a given patient.	SGD	VIVA
218.	Apply material science in association to FPDs.	SGD	VIVA

Weekly Schedule of Module V Science of Dental Materials			
Week no.	**Lecture 1**	**Lecture 2**	**Lecture 3**
Week – 1	Metal and Alloys **(LO=)**	Metal and Alloys **(LO=)**	Metal and Alloys **(LO=)**
Week – 2	Gold and Alloys of Nobel metal **(LO=)**	Gold and Alloys of Nobel metal **(LO=)**	Gold and Alloys of Nobel metal **(LO=)**
Week – 3	Gold and Alloys of Nobel metal **(LO=)**	Base metal casting alloys **(LO=)**	Base metal casting alloys **(LO=)**
Week – 4	Steel and wrought alloys **(LO=)**	Casting **(LO=)**	Casting **(LO=)**
Week – 5	Requirements of impression materials **(LO=)**	Requirements of impression materials **(LO=)**	Non- Elastic impression materials **(LO=)**
Week – 6	Non- Elastic impression materials **(LO=)**	Non- Elastic impression materials **(LO=)**	**TEST** **(LO=)**
Week – 7	Elastic impression materials **(LO=)**	Elastic impression materials **(LO=)**	Elastic impression materials **(LO=)**
Week –8	Elastic impression materials **(LO=)**	Elastic impression materials **(LO=)**	Elastic impression materials **(LO=)**
Week -9	Synthetic Elastomers **(LO=)**	Synthetic Elastomers **(LO=)**	Synthetic Elastomers **(LO=)**
Week -10	Ceramics **(LO=)**	Ceramics **(LO=)**	Ceramics **(LO=)**
Week-11	**Theory Examination**		
Week-12	**Viva Examination**		

Commencement of Module		Weekly Schedule of Module ORAL PATHOLOGY	
Activity	**Week**	**Lecture 1**	**Lecture 2**
Academic Session – BDS Third Professional	Week- 1	Classify inflammatory, metabolic and endocrine disorders of bone and Genetic disorders of bone I **LO (1-6, 9,11-12)**	Genetic disorders of bone II **LO (9,11-12)**
	Week- 2	Fibrous Dysplasia **LO (7-8, 10)**	Metabolic & Inflammatory disorders of bone **LO (14-16)**
	Week- 3	Tumors of bone	Wound Healing **LO (13, 20)**
	Week- 4	**CAT**	Non-Bacterial loss of Tooth substance I **LO(21-22)**
	Week- 5	Non-Bacterial loss of Tooth substance II **LO (23-25)**	Classify infections of oral mucosa and Bacterial infections I **LO (26-28)**
	Week- 6	Bacterial infections II **LO(29-31)**	Viral infections **LO (32-33)**
	Week- 7	Fungal infections **LO(34-37)**	Immunology I **LO(39-40)**
	Week- 8	Immunology II **LO(41-42)**	**CAT**
	Week- 9	**CME on Ameloblastoma**	Revision
	Week- 10	Revision	Revision
	Week- 11	**THEORY AND VIVA EXAMINATION**	

WEEKLY SCHEDULE OF MODULE II DEPARTMENT OF PATHOLOGY		
WEEK NO.	**LECTURE 1**	**LECTURE 2**
Week – 1	Thrombosis(LO=)	Gram Positive cocci and Staphylococcus (LO=)
Week – 2	Thrombosis 2 (LO=)	Streptococcal Infections (LO=)
Week – 3	Embolism (LO=)	Spores, resistance and incubation; Clostridium Species (LO=)
Week – 4	Infarction (LO=)	Classification of spore forming and Non Spore Forming Bacteria; Diphtheria (LO=)
Week – 5	Shock (LO=)	Gram Neg Rods and Lactose fermenting Rods; Features and Pathogenesis E.Coli (LO=)
Week – 6	Nomenclature of neoplasia (LO=)	Salmonella (LO=)
Week – 7	Characteristics of benign and malignant Tumors (LO=)	Pseudomonas (LO=)
Week –8	Carcinogenesis(LO=)	Basic Structure and classification of medically important viruses (LO=)
Week -9	Tumor immunity(LO=)	Influenza Virus (LO=)
Week -10	Clinical features of tumor (LO=)	Viral Hepatitis (LO=)
Week -11	Tumor marker (LO=)	HIV (LO=)
Week –12	REVISION	REVISION
Week-13	**Theory Examination**	
Week-14	**Viva Examination**	

Commencement of Module V		Weekly Schedule of Module II Prosthodontics	
Activity	**Week**	**Laboratory Session**	**Tutorial Session**
Pre- Clinical Academic Session – BDS Second Professional	1.	Posterior Teeth maxillary setup- Demonstration	Introduction to basic concepts of occlusion
	2.	Laboratory work	Artificial teeth- types & selection guideline
	3.	Posterior Teeth mandibular setup- Demonstration	Relationship of teeth to cast
	4.	Laboratory work	Complete denture occlusion
	5.	Final wax up (Carving and Festooning)- Demonstration	Investment, packing and curing
	6.	Final waxup (Carving and Festooning)- Laboratory work	Finishing and Polishing Protocols
	7.	Investment, Packing and curing- Demonstration	Introduction to removable partial dentures- components
	8.	Investment, Packing and curing- Laboratory work	Interim removable partial dentures
	9.	Finishing and Polishing- Demonstration	Fabrication of cast partial dentures – Demonstration
	10.	Finishing and Polishing- Laboratory work	Introduction to Fixed partial dentures
	11.	High spots Grinding- Demonstration	Revision/ Class test
	12.	Laboratory work	Laboratory work
	13.	**MODULE EXAMINATION**	
	14.		

WEEKLY SCHEDULE OF MODULE II PHARMACOLOGY			
WEEK NUMBER	**LECTURE 1**	**LECTURE2**	**LECTURE 3**
Week- 1	Diuretics-	Diuretics-2	Antihypertensive drugs-1
Week- 2	Antihypertensive drugs-2	Drugs used in CCF	Antiarrythmic drugs-1
Week- 3	Antiarrythmic drugs-2	Antiarrythmic drugs-3	Antianginal drugs
Week- 4	Antihyperlipidemic **144**	Drugs used to treat anemia	Parenteral anticoagulants
Week- 5	Oral anticoagulants	Thrombolytic & Antiplatelet	Coagulants
Week- 6	CLASS TEST	Penicillins	Cephalosporin
Week- 7	Tetracyclines	Aminoglycosides	Macrolides
Week- 8	Chloramphenicol	Clindamycin	sulfonamides
Week- 9	Fluoroquinolones	Antituberculous drugs (1^{st} Line)	Antituberculous drugs (1^{st} Line)
Week- 10	Anticancer-1	Anticancer-2	Emetics and Antiemetics
Week- 11	Drug treatment of peptic ulcer	Antidiarrheal drugs and purgatives	Antiviral drugs
Week-12	REVISION CVS Drugs	REVISION Chemotherapy	REVISION
Week-13	Theory Examination		
Week -14	Viva Examination		

MODULE-III

S. No	Learning Objectives At the end of the session, students will be able to;	Teaching strategy	Assessment tool
	ORAL PATHOLOGY		
1.	Classify the cyst of jaws.	IL	BCQs/SEQs
2.	Understand the mechanism of radicular cyst formation.	SGD	SEQs
3.	Describe the clinical and histopathological features of odontogenic cysts.	IL	BCQs/SEQs/OSPE
4.	Compare and contrast clinical, histological and radiological features of dentigerous cysts and odontogenic keratocyst.	SGD	BCQs/SEQs/OSPE
5.	Discuss odontogenic developmental cysts in detail.	SGD	BCQs/SEQs
6.	Describe the features of naevoid basal cell carcinoma syndrome (NBCCS).	SGD	BCQs/OSPE
7.	Give an account of non-odontogenic epithelial cysts.	IL	BCQs/SEQs
8.	Understand the clinical and histological features of soft tissue cysts (skin, mucous membrane and glandular).	IL	BCQs/SEQs/OSPE
9.	Discuss in detail the non-epithelial cysts of jaws.	IL	BCQs/SEQs
10.	Classify odontogenic and non-odontogenic tumors of jaws.	IL	BCQs/SEQs
11.	Describe the clinical, radiological and histological features of Ameloblastoma.	IL	BCQs/SEQs
12.	Discuss clinical, radiological and histological features of calcifying epithelial odontogenic tumor.	SGD	BCQs/SEQs
13.	Define odontomes and differentiate between Compound and Complex odontomes.	SGD	OSPE
14.	Discuss mesenchymal tumors	IL	BCQs/SEQs
15.	Enlist and differentiate between the premalignant lesions & conditions of oral cavity.	SGD	BCQs/SEQS/OSPE
16.	Discuss etiopathogenesis, histological and clinical features of oral submucous fibrosis.	IL/SGD	BCQs/SEQs/OSPE
17.	Describe etiopathogenesis, types, and clinical features of oral lichen planus.	IL	BCQs/SEQs/OSPE
18.	Define and recall the key features of epithelial dysplasia.	SGD	SEQs
19.	Describe etiology, types, and clinical features of leukoplakia.	IL	BCQs/SEQs/OSPE
20.	Discuss etiology and clinical features of oral squamous cell carcinoma	SGD	BCQs/SEQs
21.	Discuss the infective, obstructive and traumatic disorders of major salivary glands.	IL/SGD	BCQs/SEQs/OSPE
22.	Discuss necrotizing sialometaplasia and sjögren syndrome in detail.	IL/SGD	BCQs/SEQs
23.	Classify the tumors of salivary glands.	IL	BCQs/SEQs

24.	Define xerostomia and enlist its causes.	IL	BCQs/SEQs
25.	Describe the clinical and histological features of pleomorphic adenoma, warthin's tumour and mucoepidermoid carcinoma.	IL	BCQs/SEQs/OSPE
26.	Identify the Stafne bone defect on a radiograph	PW	OSPE
27.	Identify the clinical images of precancerous lesions & conditions	PW	OSPE

MODULE III

At the end of the Module, Students should be able to:

	SCIENCE OF DENTAL MATERIALS	**MIT**	**ASSESSMENT TOOLS**
1.	Differentiate between direct and indirect restorations and give examples	IL	BCQs, SEQs,Viva OSPE
2.	Enumerate the requirements of direct filling materials	IL	SEQs
3.	Discuss composition of dental amalgam	IL	BCQs, SEQs, Viva
4.	Classify dental amalgam on basis of copper content, zinc content, shape of the alloy particle, number of alloy metals, and size of alloy	IL	BCQs, SEQs, OSPE, CQ
5.	Discuss manufacture of alloy powder	IL	SEQs, Assign
6.	Differentiate between amalgamation and trituration	IL	BCQs, SEQs, OSPE, Assign
7.	Explain the setting reaction of amalgam (ϒ phases).	IL	BCQs, SEQs, Assign, Viva
8.	Enlist the properties of amalgam.	PBL	BCQs, SEQs, Viva, PBL
9.	Define creep, tarnish and corrosion	PBL	SEQs, OSPE, PBL, Viva
10.	Discuss clinical handling of dental amalgam	IL	BCQs, SEQs, OSPE, Viva
11.	Discuss its manipulative variables including selection of materials, proportioning and dispensing, trituration , mulling , condensation, shaping and finishing	IL, VD	BCQs, SEQs, OSPE, Viva
12.	Discuss zinc free alloys	IL	SEQs, Viva
13.	Outline uses of dental amalgam	PBL	BCQs, SEQs, OSPE, Viva, PBL
14.	Compare dental amalgam with composite restorative materials	IL	BCQs, SEQs, Viva
15.	Discuss 'amalgam controversy'	IL	SEQs

16.	Discuss the previous use of silicate and acrylic resin as permanent filling materials	IL	BCQs, SEQs, Viva
17.	State the classification of composite resin according to the type of monomer, filler size and content, modes of activation and viscosity	IL	BCQs, SEQs, Viva
18.	State the composition, properties and use of self-cured composite	IL	BCQs, SEQs
19.	State the composition, properties and use of light activated composite resin	IL	BCQs, SEQs, Viva, Assign
20.	Discuss the different light systems used for activation of composite resin	IL	SEQs
21.	Discuss the various types of composites based on filler content and size	IL	SEQs, OSPE
22.	Discuss the effect of filler size and content on properties of composite	IL	BCQs, SEQs, OSPE, Viva.
23.	Discuss the clinical application of various types of composite resin	IL	BCQs, SEQs, OSPE, Viva.
24.	Explain the properties of resin based composites including biocompatibility, setting characteristics, polymerization shrinkage ,thermal properties, mechanical properties, surface hardness ,appearance, adhesion/bonding	PBL	BCQs, SEQs, OSPE, Viva, PBL, Assign
25.	Discuss factors affecting depth of cure	IL	BCQs, SEQs, Viva
26.	Discuss compensation for polymerisation shrinkage	IL	BCQs, SEQs, OSPE, Viva
27.	Describe C-factor	IL	BCQs, SEQs, PBL, Viva
28.	Discuss fiber reinforcement of composite structures and their use	IL	BCQs, SEQs, Viva.
29.	Differentiate between finishing and polishing	IL	BCQs
30.	Discuss the benefits of finishing and polishing	IL	BCQs, SEQs
31.	Discuss instruments used for finishing and polishing of composite restorations Enlist types of abrasives	IL	BCQs, SEQs, OSPE, Viva.
32.	Discuss immediate and delayed finishing	IL	BCQs, SEQs
33.	Discuss variables which may affect the finishing and polishing of composite restoration	IL	BCQs, SEQs, Viva
34.	Understand manipulation of light-cured composites through a video demonstration	VD	PW
35.	Briefly discuss acid etch systems.	IL	BCQs, SEQs, OSPE, Viva, Assign
36.	Describe enamel etching.	IL	BCQs, SEQs, OSPE, Viva
37.	Explain applications of acid etch technique.	IL	SEQs, OSPE, Viva.
38.	Explain dentine bonding.	IL	BCQs, SEQs,

			OSPE, Viva.
39.	Explain hybrid layer.	IL	BCQs, SEQs, Viva.
40.	Define smear layer.	IL	SEQs, Viva.
41.	Understand chemical structure of enamel and dentine.	IL	BCQs, SEQs, Viva
42.	Differentiate between primer and bonding agent.	IL	BCQs, SEQs, OSPE
43.	Discuss the generations of bonding systems	IL	BCQs, SEQs, Viva
44.	Compare and contrast total etch method and self-etching primer method	IL	BCQs, SEQs
45.	Discuss dry and wet bonding	IL	BCQs, SEQs, OSPE
46.	Understand and discuss bonding to alloys, amalgam and ceramics.	IL	BCQs, SEQs
47.	Briefly discuss bond strength resin with enamel and dentine	IL	BCQs, SEQs, Viva.
48.	Enlist the composition of conventional glass ionomer restorative material	IL	BCQs, SEQs
49.	Discuss its the setting reaction ,properties and uses	IL	BCQs, SEQs, Viva
50.	Discuss Cermets.	IL	BCQs, SEQs, Viva
51.	Discuss the sandwich technique and its applications.	IL	BCQs, SEQs, Viva
52.	Discuss ART	IL	BCQs, SEQs, Viva
53.	Compare glass ionomers with composite restorative materials	IL	BCQs, SEQs, Viva
54.	Discuss resin modified glass ionomers.	IL	BCQs, SEQs
55.	Enlist its composition and properties.	IL	SEQs, CQ
56.	Outline their clinical applications and handling	IL, VD	BCQs, SEQs
57.	Discuss giomers and compomers	IL	BCQs, SEQs, CQ, Viva
58.	Compare and contrast conventional glass ionomers with resin modified	IL	SEQs, OSPE, Viva
59.	Explain the need for temporization	IL	BCQs, SEQs
60.	Enlist the requirements for temporary crown and bridge resins	IL	SEQs, Viva
61.	Discuss the types, composition and properties of temporary crown and bridge resins	IL	BCQs, SEQs, Viva.
62.	Explain direct and indirect technique for making temporary crown and bridge	IL	SEQs, OSPE, Viva.

63.	State the uses of dental cements and give examples	IL	BCQs, SEQs, OSPE, Viva.
64.	Differentiate between a liner and base	IL	BCQs, SEQs, OSPE, Viva.
65.	Discuss the requirements of cavity liner/base	IL	BCQs, SEQs, OSPE, Viva.
66.	Discuss the requirements of luting cement	IL	BCQs, SEQs, OSPE, Viva.
67.	State the requirements of endodontic cements	IL	BCQs, SEQs, Viva
68.	State the requirements of orthodontic cements	IL	BCQs, SEQs, OSPE, Viva.
69.	Enlist cements based on phosphoric acid.	IL	SEQs
70.	Enlist the composition ,properties and uses of zinc phosphate cements	IL	BCQs, SEQs, Viva
71.	Discuss silicophosphate cements.	IL	SEQs, Viva.
72.	Discuss copper cements	IL	BCQs, SEQs
73.	Enlist cements based on organometallic chelate compounds.	IL	SEQs, Viva.
74.	Classify zinc oxide eugenol cements.	IL	SEQs, OSPE
75.	Enlist the composition, properties and uses zinc oxide eugenol cements.	IL	BCQs, SEQs
76.	Discuss ortho-ethoxybenzoic acid (EBA) cements.	IL	BCQs, SEQs
77.	Enlist the composition, properties and uses of calcium hydroxide cements	IL	BCQs, SEQs, Viva
78.	Explain pulp capping	PBL	BCQs, SEQs, OSPE, Viva, PBL
79.	Discuss the composition, properties and uses of polycarboxylate cements	IL	SEQs, Viva
80.	Discuss the composition, properties and uses of glass ionomer cements	IL	BCQs, SEQs, OSPE, Viva
81.	Discuss the composition, properties and uses of resin modified glass ionomer cement	IL	BCQs, SEQs, OSPE, Viva
82.	Compare and contrast dental cements belonging to different groups	IL	BCQs, SEQs
83.	State the objectives of endodontics	IL, SGD	BCQs, SEQs, OSPE, Viva.
84.	List the different materials used during endodontic treatment	IL, SGD	BCQs, SEQs, OSPE, Viva.
85.	State ideal requirements for lubricants and irrigants and give examples	IL, SGD	BCQs, SEQs, OSPE, Viva.
86.	Discuss intracanal medicaments	IL, SGD	BCQs, SEQs, OSPE, Viva.

87.	Discuss sealants and their properties	IL	CQs, OSPE
88.	Discuss bulk filling materials in endodontic treatment	IL	CQs, OSPE, Viva
89.	Classify dental implants	IL	BCQs, OSPE, Viva
90.	Enlist materials for dental implants	IL	BCQs, OSPE, Viva
91.	State uses of dental implants	IL	BCQs, OSPE, Viva.
92.	Discuss advantages and disadvantages of dental implants	IL	OSPE, Viva.
93.	Explain ossteointegration	IL	OSPE.
94.	Discuss biocompatibility of dental implants	IL	OSPE.
	PHARMACOLOGY		
95.	Describe the drug treatment of ameobiasis and giardiasis	IL	BCQs, SEQs, Viva
96.	Describe the drug treatment of plasmodium infections	IL	BCQs, SEQs, Viva
97.	Describe the pharmacokinetics of benzodiazepines	IL, SGD, PBL,	BCQs, SEQs, Viva
98.	Describe the mechanism of action, clinical uses and adverse effects of benzodiazepines	IL, SGD, Assign	BCQs, SEQs, Viva
99.	Describe the pharmacokinetics of barbiturates	IL	BCQs, SEQs, Viva
100.	Describe the mechanism of action, clinical uses and adverse effects of barbiturates	IL	BCQs, SEQs, Viva
101.	Describe the mechanism and adverse effects of various groups of anti-seizure drugs	IL	BCQs, SEQs, Viva
102.	Describe the mechanism of action of general anaesthetic agents	IL, SGD	BCQs, SEQs, Viva
103.	Describe merits, demerits and adverse effects of intravenous and inhalational anesthetic agents	IL, SGD	BCQs, SEQs, Viva
104.	Describe the pharmacology of local anesthetic drugs	IL, SGD, Assign	BCQs, SEQs, Viva
105.	Describe the mechanism, uses and adverse effects of skeletal muscle relaxants	IL	BCQs, SEQs, Viva
106.	Describe the drug treatment of Parkinsonism	IL	BCQs, SEQs, Viva
107.	Describe mechanism, uses and adverse effects of antipsychotic drugs and lithium	IL	BCQs, SEQs, Viva
108.	Describe the various antidepressant drug groups according to their mechanism of action	IL	BCQs, SEQs, Viva

109.	Describe the pharmacology of alcohol	IL	BCQs, SEQs, Viva
110.	Describe the mechanism of action, uses and adverse effects of CNS stimulants	IL	BCQs, SEQs, Viva
111.	Describe the pharmacology of anti-thyroid drugs	IL	BCQs, SEQs, Viva
112.	Describe the mechanism of action and adverse effects of female sex hormones	IL	BCQs, SEQs, Viva
113.	Describe the clinical uses of female sex hormones	IL	BCQs, SEQs, Viva
114.	Explain the mechanism of action, clinical uses and adverse effects of male sex hormones	IL	BCQs, SEQs, Viva
115.	Describe the clinical uses of anti-androgens	IL	BCQs, SEQs, Viva
116.	Describe the parenteral drug treatment of diabetes mellitus	IL, SGD, Assign	BCQs, SEQs, Viva
117.	Describe the oral drug treatment of diabetes mellitus	IL, SGD, PBL, Assign	BCQs, SEQs, Viva
118.	Describe the pharmacology of parathyroid hormone	IL	BCQs, SEQs, Viva
119.	Describe the pharmacology of antifungal drugs	IL, SGD	BCQs, SEQs,Viva
	PATHOLOGY		
120.	Describe the pathogenesis ,clinical features and diagnosis of herpes viruses infections	ILD	BCQ
121.	Describe the immune response and its various types with examples.	ILD	BCQ/SEQ
122.	Describe cells of immune system.	ILD	BCQ/SEQ
123.	Describe the properties of different types of antibodies.	SGD	SEQ/BCQ
124.	Define Major Histocompatibility Complex (MHC) and discuss its significance in the immune response and graft rejection	SGD	BCQ/SEQ
125.	Discuss the mechanisms for activation and regulation of the complement system	SGD	SEQ/BCQ
126.	Describe hypersensitivity reactionstype I, type II, type III, and type IV with Relevant examples	ILD/SGD	BCQ/SEQ
127.	Memorize the pathogenesis, clinical finding and investigation of dengue fever.	ILD	BCQ/SEQ
128.	Define Tolerance and describe various mechanisms involved in the development of immune tolerance.	IL	SEQ/BCQ
129.	Define autoimmunity and discuss the mechanisms involved in the development of autoimmune diseases.	IL	BCQ/SEQ
130.	Explain the morphology, general characteristic and classification of medically important fungi.	IL	BCQ

131.	Classify the immunodeficiency disorders on the basis of deficiency of major Immune components	IL	SEQ
132.	Describe the patterns of inheritance of single gene disorders: autosomal dominant, autosomal recessive, X-linked, Y- linked	IL	BCQ/SEQ/OSCE
133.	Describe the pathogenesis and clinical features of infections cause by Candida albicans.	IL	BCQ/SEQ
134.	Describe the patterns of inheritance of single gene disorders with atypical patterns of inheritance, i.e. Mitochondrial disorders, Triplet repeat mutations and Genomic imprinting	IL	BCQ/SEQ/AS
135.	Describe the patterns of inheritance of cytogenetic disorders involving autosomes and sex chromosomes.	IL	BCQ/SEQ
136.	Reproduce the lifecycle of Entamoebahistolytica.	SGD	BCQ/SEQ
137.	Reproduce the life cycle of plasmodium and identify the medically important stages.	IL	BCQ/SEQ
138.	Describe the clinical features, diagnosis and treatment of Plasmodium infection	IL	BCQ/SEQ
139.	Identify the morphological features of Ascarislumbricoides and discuss its life cycle	IL	OSCE/BCQ/SEQ
140.	Describe the etiology, pathogenesis and morphological features of leukoplakia,erythroplakia and submucous fibrosis (SMF).	IL	BCQ/SEQ
141.	Discuss the risk factors, pathogenesis, morphological characteristics, grading and staging of carcinoma of oral cavity	SGD	SEQ/BCQ
142.	List the causes of salivary gland swellings.	SGD	BCQ/AS
143.	Describe the clinical and morphological features of pleomorphic adenoma.	SGD	SEQ/BCQ
144.	Describe the clinical features and immunization of Measles.	SGD	BCQ
145.	Discuss important features of Mumps virus.	IL	BCQ
146.	Describe different species of Leishmania and diseases caused by them.	IL	SEQ/BCQ
147.	Outline the treatment of Leishmaniasis.	IL	BCQ
148.	Describe the principles and applications of Molecular analysis, i.e. PCR and FISH.	IL	BCQ/SEQ
149.	Lipoma	Lab Skills	OSCE/VIVA
150.	Squamous cell carcinoma- Larynx	Lab Skills	OSCE/VIVA
151.	Carcinoma-lung	Lab Skills	OSCE/VIVA
152.	Carcinoma-stomach	Lab Skills	OSCE/VIVA
153.	Ductal carcinoma of breast	Lab Skills	OSCE/VIVA
154.	Squamous cell carcinoma	Lab Skills	OSCE/VIVA

155.	Basal cell carcinoma	Lab Skills	OSCE/VIVA
156.	Malignant melanoma	Lab Skills	OSCE/VIVA
157.	Lipoma	Lab Skills	OSCE/VIVA
158.	Liposarcoma	Lab Skills	OSCE/VIVA
159.	Adenoma	Lab Skills	OSCE/VIVA
160.	Adenocarcinoma	Lab Skills	OSCE/VIVA
161.	To isolate and observe candida.	Lab Skills	OSCE/VIVA
162.	To study hepatitis virus and laboratory investigation of hepatitis virus.	Lab Skills	OSCE/VIVA
163.	To observe different stages of plasmodium microscopically.	Lab Skills	OSCE/VIVA
164.	To study the interpretation of different Lab investigations.	Lab Skills	OSCE/VIVA
165.	To study different biohazards in Lab.	Lab Skills	OSCE/VIVA
	PRE-CLINICS- OPERATIVE DENTISTRY		
166.	Introduction of Conservative/Operative Dentistry	IL	BCQs (one best)
167.	List the aims of Conservative/Operative Dentistry	IL	BCQs/SEQs
168.	Repeat Nomenclature of dentition	IL/SGD	BCQs/SEQs
169.	Illustrate Tooth Numbering systems, ADA, Zsigmondy- Palmer, and FDI systems	IL/SGDD	BCQs/SEQs
170.	Define Dental caries	IL/SGDD	OSCE
171.	Review G.V. Black classification of dental caries	IL/SGD	OSCE
172.	Describe Graham Mount classification of dental caries	IL	BCQs/SEQs/OSCE
173.	Differentiate between G.V. Black & Graham Mount classification of Dental caries	IL/SGD	BCQs/OSCE
174.	Know the parts of dental unit	Skill Lab	BCQs/ OSCE
175.	Operate dental unit in phantom lab	Skill Lab	OSCE
176.	Demonstrate about positioning the patients and the dentist in operatory	Skill Lab	BCQs/SEQs
177.	Identify hand instruments	SGD/Skill Lab	OSCE
178.	Recognize the design of hand instruments	SGD/Skill Lab	BCQs/OSCE
179.	Apply different grips to hold hand instruments	SGD/Skill Lab	OSCE
180.	Identify rotary instruments	SGD/Skill Lab	BCQs

181.	Demonstrate tooth preparation with rotary instruments	Skill Lab	BCQs/OSCE
182.	Express various steps in Class 1 cavity preparation	Skill Lab	OSCE
183.	Plan Class 1 cavity on plaster models/ acrylic teeth in phantom lab	Skill Lab	OSCE
184.	Discuss different steps in Class V cavity preparation	Skill Lab	OSCE
185.	Prepare Class V cavity on plaster models/ acrylic teeth in phantom lab	Skill Lab	BCQs/OSCE
186.	Memorize parts of matrix band retainer	SGD/Skill Lab	OSCE
187.	Apply matrix band Retainer & wedge	SGD/Skill Lab	BCQs/ OSCE
188.	Explain cavity liners and bases	IL/SGD	BCQs/ SEQs
189.	Manipulate lining material/filling materials	SGD/Skill Lab	OSCE
190.	Demonstrate placement of lining on acrylic tooth	Skill Lab	OSCE
191.	Express filling of Amalgam in Class I tooth cavities	Skill Lab	OSCE
192.	Perform finishing and polishing of amalgam restoration	Skill Lab	BCQs
193.	Illustrate steps of Class II Slot preparation	SGD/Skill Lab	BCQs/SEQs
194.	Prepare Class II Slot cavity on plaster models/ acrylic teeth in phantom lab	SGD/Skill Lab	BCQs
195.	Restore Class II Slot preparation with amalgam	SGD/Skill Lab	BCQs/SEQs
196.	Discuss steps of Class II MO/DO/ MOD cavity design	SGD/Skill Lab	OSCE
197.	Execute Class II MO/DO cavity design on plaster models/ acrylic teeth in phantom lab.	Skill Lab	BCQs/SEQs/OSCE
198.	Perform Class II MOD cavity design on plaster models/ acrylic teeth in phantom lab.	Skill Lab	BCQs/SEQs/OSCE
199.	Demonstrate restoration of Class II MO/DO/MOD preparation with amalgam	SGD/Skill Lab	BCQs/SEQs
200.	Discuss steps of Class III cavity preparation	SGD/Skill Lab	BCQs /OSCE
201.	Prepare Class III cavity on plaster models/ acrylic teeth in phantom lab.	Skill Lab	OSCE
202.	Explain purpose of Acid Etching of Enamel/Dentin	IL/SGD	BCQs /SEQs
203.	Discuss bonding to enamel and dentine	IL/SGD	BCQs /SEQs
204.	Explain Composite as a restorative material	SGD	BCQs /SEQs
205.	Propose steps of Class 1V cavity preparation	SGD/Skill Lab	BCQs/SEQs/OSCE
206.	Prepare Class IV cavity design on plaster models /acrylic teeth in phantom	Skill Lab	OSCE

	lab		
207.	Apply Etchant on the tooth cavities	SGD	BCQs /SEQs
208.	Use bonding agent on the tooth cavities	SGD	BCQs /SEQs
209.	Demonstrate how composite is placed in Class III/IV tooth cavities	Skill Lab	OSCE
210.	Perform the finishing and polishing of composite restoration	Skill Lab	OSCE

Commencement of Module		**Weekly Schedule of Module III** **ORAL PATHOLOGY**	
Activity	**Week**	**Lecture 1**	**Lecture 2**
Academic Session – BDS Second Professional	Week- 1	Classification of Cyst of Jaws Dentigerous Cyst **LO (1, 4)**	Radicular Cyst **LO (2)**
	Week- 2	Odontogenic Keratocyst tumor **LO (4, 6)**	Odontogeniccyst of jaws **LO (3)**
	Week- 3	Non-Odontogenic cyst of jaws **LO (7)**	False Cyst and soft tissue cyst of Jaws **LO (9- 10)**
	Week- 4	**CAT -3**	Pre-cancerous Lesions and Conditions I **LO(15)**
	Week- 5	Pre-cancerous Lesions and Conditions II **LO (16- 17)**	Pre-cancerous Lesions and Conditions III **LO (18- 20, 27)**
	Week- 6	Classify Odontogenic and Non – Odontogenic tumors and Odontogenic Epithelial tumors I **LO (10- 11)**	Odontogenic Epithelial tumors **LO (11-12)**
	Week- 7	Mesenchymal tumors **LO (14)**	Odontomes **LO (13)**
	Week- 8	Infective, obstructive, traumatic diseases of salivary glands I **LO (21)**	Infective, obstructive, traumatic diseases of salivary glands II **LO (21)**
	Week- 9	Sjogren syndrome **LO (22, 24)**	Benign & Malignant tumors of salivary glands I **LO (23, 25)**
	Week- 10	Benign & Malignant tumors of salivary glands II **LO (25-26)**	**CAT -4**
	Week-11	**THEORY AND VIVA EXAMINATION**	

WEEKLY SCHEDULE OF MODULE III SCIENCE OF DENTAL MATERIALS			
WEEK NO.	**LECTURE 1**	**LECTURE 2**	**LECTURE 3**
Week – 1	Requirements of direct filling materials**(LO=)**	Requirements of direct filling materials **(LO=)**	Dental Amalgam **(LO=)**
Week – 2	Dental Amalgam **(LO=)**	Dental Amalgam **(LO=)**	Dental Amalgam **(LO=)**
Week – 3	Resin based filling materials **(LO=)**	Resin based filling materials **(LO=)**	Resin based filling materials **(LO=)**
Week – 4	Adhesive restorative materials **(LO=)**	Adhesive restorative materials **(LO=)**	Adhesive restorative materials **(LO=)**
Week – 5	GIC **(LO=)**	GIC **(LO=)**	GIC **(LO=)**
Week – 6	Resin- modified GIC **(LO=)**	Resin- modified GIC **(LO=)**	Resin- modified GIC **(LO=)**
Week – 7	Temporary crown and bridge **(LO=)**	Temporary crown and bridge **(LO=)**	TEST
Week –8	Requirements of dental cement **(LO=)**	Requirements of dental cement **(LO=)**	TEST
Week -9	Cements based on phosphoric acid **(LO=)**	Cements based on phosphoric acid **(LO=)**	Cements based on organometallic chelate compounds **(LO=)**
Week -10	Cements based on organometallic chelate compounds **(LO=)**	Polycarboxylate cements **(LO=)**	Polycarboxylate cements **(LO=)**
Week -11	Endodontics **(LO=)**	Endodontics **(LO=)**	Revision
Week-12	**THEORY EXAMINATION**		
Week-13	**VIVA EXAMINATION**		

WEEKLY SCHEDULE OF MODULE III PHARMACOLOGY			
WEEK NO.	**LECTURE 1**	**LECTURE 2**	**LECTURE 3**
Week – 1	Antifungal drugs	Drug treatment of ameobiasis & giardiasis	Drug treatment of plasmodium infections
Week – 2	Benzodiazipines	Barbiturates	Antiseizure drugs-1
Week – 3	Antiseizure drugs-2	General anesthetic agents-1	General anesthetic agents-2
Week – 4	Local anesthetics-1	Local anesthetics-2	Skeletal muscle relaxants
Week – 5	Drug treatment of parkinsonism	Antipsychotic drugs	Antidepressant drugs
Week – 6	Class test	Alcohol	CNS stimulants
Week – 7	Antithyroid drugs	Female sex hormones-1	Female sex hormones-2
Week –8	Parenteral drug treatment of diabetes mellitus	Oral drug treatment of diabetes mellitus	Oral drug treatment of diabetes mellitus
Week -9	Drug treatment of ameobiasis& giardiasis Drug treatment of plasmodium infections	Revision- CNS	Revision-ENDO
Week -10	Revision-CNS	Revision-CNS	Revision-ENDO
Week –11	THEORY EXAMINATION		
Week-12	VIVA EXAMINATION		

WEEKLY SCHEDULE OF MODULE III DEPARTMENT OF PATHOLOGY		
WEEK NO.	**LECTURE 1**	**LECTURE 2**
Week – 1	Immune response(LO=	HPV (herpes)(LO=)
Week – 2	Cells of immune system(LO=)	Introduction to Mycology(LO=)
Week – 3	Hypersensitivity reactions type I &II(LO=)	Candida Albicans(LO=)
Week – 4	Hyper sensitivity reactions type –III & IV(LO=)	Entamoaeba Hystolitica(LO=)
Week – 5	Immune tolerance(LO=)	Plasmodium (LO=)
Week – 6	Auto immune disorders(LO-)	Ascaris lumbricoides (LO=)
Week – 7	Primary immune deficiency disorders(LO=)	Mumps and Measles(LO=)
Week –8	Secondary immune deficiency disorders(LO=)	Leishmaniasis-I (LO=)
Week -9	Single gene disorders-I(LO=)	Leishmaniasis-II (LO=)
Week -10	Single gene disorder –II(LO=)	Other Protozoa of medical Importance (LO=)
Week -11	Single gene disorders with atypical pattern of inheritance(LO=)	Other Fungi of Medical importance (LO=)
Week –12	REVISION	REVISION
Week –13	THEORY EXAMINATION	
Week-14	VIVA EXAMINATION	

Pre- Clinical Academic Session – BDS Second Professional		
Commencement of Module III Operative Dentistry		
Week	**Laboratory Session (Group A & B)**	**Tutorial Session**
1.	Introduction & Aims of Operative Dentistry Know the part of dental unit & position of dentist in Operatory	Nomenclature of dentition Definition & classification of dental caries
2.	Dental instruments	Graham Mount classification of dental caries
3.	Tooth preparation of Class I Cavity with rotary instruments	Demonstration of matrix band
4.	Demonstration on Class V cavity preparation	Practice of matrix band
5.	Demonstration of amalgam filling on phantom tooth	Cavity liners and bases
6.	Practice of cavity preparation Class (I & V)	Steps of class II slot preparation
7.	Demonstration of Class II MO/DO/MOD cavity	Discuss steps of Class III cavity preparation
8.	Demonstration of Class III cavity preparation	Discuss etching & bonding of enamel and dentine
9.	Practice of cavity preparation Class II slot, MO/DO)	Restorative materials
10.	Discuss steps of Class IV cavity preparation	Demonstration of Class IV cavity preparation
11.	Demonstration of application of etchant, bond and composite placement in Class III & IV cavities	Practice of cavity preparation of Class III
12.	Practice of cavity preparation of Class IV	Practice of cavity preparation Class IV
13.	**Module Examination Theory**	
14.	**Practical OSPE /Viva**	

6.6: 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. 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.	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	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. 4. Pickardards Manual of Operative Dentistry by EAM Kidd. 5. Fundamentals of Operative Dentistry by Schwartz 6. Dental Restorative Materials – Craig 7. Textbook of Operative Dentistry by Vimal K Sikri

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

6.3: INTRODUCTION TO CURRICULAR FRAMEWORK OF THIRD YEAR BDS

INTRODUCTION TO INTEGRATED CURRICULAR FRAMEWORK				
Paper-I	**Paper-II**			
Module-I	**Module-II**	**Module-III**	**Module-IV**	**Module-V**
Cariology & Removal Prosthesis+ Research	**Oral disease, Exodontia, Pain Management & Anxiety Control (OMFS+ Oral Medicine & Diagnosis**	**Periodontics (Gingiva & Periodontal Disease) + Behavioral Sciences**	**Community Dentistry & Public Health Services**	**Oral Radiology & Dental Informatics**
07 Weeks	**07 Weeks**	**07 Weeks**	**07 Weeks**	**07 Weeks**
General Medicine & General Surgery				

Clinical Dental Sciences-I
Pre-Clinical Dental Sciences-I
32 Weeks (on rotations basis group wise)
Clinical Sciences of Operative Dentistry-I, Biomaterials and Pre-clinical Sciences of Removable Prosthodontics-I, Introduction to Dental Care and Professionalism-I (on rotation basis) and Research Methodology-I and Dental Informatics-I

TABLE OF SPECIFICATION OF ORAL PATHOLOGY

S. No.	Topics	BCQ's	SEQ's
1	Principal and investigation of diagnosis	1	0
2	Disorders of 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 tumor and tumor 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**

TABLE OF SPECIFICATION		
PERIODONTOLOGY		
TOPICS	**BCQs**	**SEQs**
Cross contamination and cross infection control protocol		1
The Anatomy, structure and functions of The Periodontal Tissues/The normal periodontium	1	
Oral Bio film and Calculus	1	1
Periodontal microorganism		
Pathogenesis of Plaque associated Periodontal disease		
Etiology and susceptibility in Periodontal Disease -Local risk factors.	1	1
Etiology and susceptibility in Periodontal Disease -Systemic risk factors for periodontal diseases		
Instruments use in periodontal therapy-classification	1	
Instruments use in periodontal therapy-handling, grasping, finger rests, maintenance	1	
Chair position, patient and dentist position-ergonomics	1	
Identification and diagnosis of periodontal diseases in general dental practice-Basic Periodontal Examination (BPE)	1	
Record of periodontal Examination/periodontal charting		
Radiographic aids in the diagnosis of periodontal disease	1	
Initial Periodontal Therapy/non surgical periodontal therapy in general dental practice-Oral hygiene Motivations for plaque control and periodontal care	1	1
Initial Periodontal Therapy Mechanical and chemical Supra gingival plaque control,		
Sonic and ultrasonic scaling technique and methods	1	
Subgingival scaling, root planning and curettage		
Local delivery antibiotics	1	

Systemic Chemotherapeutic agents		
Maintenance in Periodontal therapy.		
Gingivitis – Clinical features	1	1
Acute gingival infections	1	
Desquamative gingivitis		
Gingival enlargement	1	
Gingival recession	1	
Gingival diseases in childhood	1	
The periodontal pocket		
Radiographic Examination of Bone loss ,pattern of Bone loss and Periodontal pockets	1	
Chronic Periodontitis		
Aggressive Periodontitis	1	
Necrotizing Periodontal disease	1	
Periodontal abscess	1	
Halitosis/Breath Malodor causes and management	1	
periodontal diseases in female patient	1	
Restorative and periodontal interrelationship	1	
Endodontics and Periodontics interrelationship	1	
Orthodontics and Periodontics interrelationship	1	
Periodontal disease as a risk for systemic disease	1	
Periodontal treatment of medically compromised patients		
Treatment of periodontal emergencies		
General principle of periodontal surgery		1
Periodontal Pocket irradication/periodontal flap technique for pocket therapy	1	

Periodontal surgical therapy-periodontal flap surgery	1	
Periodontal surgical therapy- Periodontal surgical technique(gingival curettage, gingivectomy)		
Periodontal dressing	1	
Treatment of Gingival enlargement	1	
Periodontal plastic and aesthetic surgery/Muco-gingival Therapy/ -introduction		1
Periodontal plastic and aesthetic surgery- therapy to correct marginal tissue recession –flap procedures		
Periodontal plastic and aesthetic surgery- therapy to correct marginal tissue recession – Grafts		
Periodontal plastic and aesthetic surgery- Therapy to Correct Excessive Gingival Display -Surgical crown lenghthening		
Periodontal plastic and aesthetic surgery- Frenectomy and Frenotomy	1	1
Periodontal Regenerative and Reconstructive Therapy- Introduction	1	
Periodontal Regenerative and Reconstructive Therapy-Flap Techniques		
Periodontal Regenerative and Reconstructive Therapy Ridge Augmentation Procedures	1	
Treatment of Furcation Involved teeth	1	
Supportive periodontal therapy/Maintenance in periodontal surgical therapy	1	
Trauma from occlusion/periodontal response to external forces		
Periodontal splinting		
TOTAL	35	08

Incharge
Department Periodontology
Institute of Dentistry, LUMHS

6.3: CURRICULUM OUTLINES OF THIRD YEAR BDS

GENERAL MEDICINE

INTRODUCTION TO GENERAL MEDICINE: PRINCIPLES OF HISTORY, EXAMINATION,INVESTIGATION & DIAGNOSIS

S:NO	TOPIC	LEARNING OBJECTIVES
1.	**Introduction To General Medicine**	• Discuss the scope of general medicine. • Identify goals of studying general medicine. • Discuss the importance of a doctor and patient relation. • Explain the importance of Ethics when managing patients

2.	**Clinical teachings- History, examination, investigationsand diagnosis**	• Take dental history of a patient presenting to general medicine ward/clinic.
		• Interpret various signs and their clinical correlation whenperforming a general physical examination:
		  • Pallor;
		  • Cyanosis;
		  • Jaundice;
		  • Clubbing;
		  • Thyroid;
		  • Lymph nodes;
		  • Dehydration;
		  • Edema;
		  • Pulse, B.P Temp, R/R.

GASTRO-INTESTINAL & LIVER DISEASES		

1.	**Liver Diseases**	➢ Discuss the etiology, clinical features, types, differential diagnosis, investigations, diagnosis, management and complications of the following GI/Liver diseases:
		  ➢ GERD;
		  ➢ Gastritis/Peptic Ulcer;
		  ➢ Gastroenteritis;
		  ➢ Mal-Absorption;
		  ➢ IBS/IBD;
		  ➢ Hepatitis (Acute/Chronic);
		  ➢ CLD and Hepatocellular Carcinoma**.**

2.	**Clinical teachings- History and Examination of GI/ LiverDisease**	➢ Take a comprehensive history for a patient presenting to the general medicine clinics with complaints of GI/Liver disease. Perform clinical examination of patient presenting to the generalmedicine clinics with complaints of GI/Liver disease: 1. Inspection; 2. Palpation; 3. Percussion; 4. Auscultation

	CARDIOVASCULAR DISEASES	
1.	**CardiovascularDiseases**	➢ Discuss the etiology, clinical features, types, differentialdiagnosis, investigations, diagnosis, management and complications of the following cardiovascular diseases: ➢ Ischemic Heart Diseases (Angina/MI) ➢ CHF ➢ Rheumatic Fever ➢ Infective Endocarditis ➢ Hypertension ➢ Valvular Heart Diseases (MS/MR/AS/AR) ➢ Congenital Heart Diseases (VSD/TOF)
2.	**Clinical Teachings-History takingin CVS**	• Take a comprehensive history for a patient presenting to the general medicine clinics with complaints of cardiovascular disease pain and symptoms: ➢ Chest pain; ➢ Dyspnea; ➢ Syncope.
	RESPIRATORY DISEASES	
1.	**RespiratoryDiseases**	➢ Discuss the etiology, clinical features, types, differential diagnosis,investigations, diagnosis, management and complications of the following respiratory diseases: ➢ TB; ➢ COPD; ➢ Pneumonia; ➢ Asthma; ➢ Bronchogenic Carcinoma; ➢ Bronchiectasis; ➢ Pneumothorax/Pleural effusion.
2.	**Clinical Teachings-History taking and clinical examination inRespiratory disease**	➢ Take a comprehensive history for a patient presenting to the general medicine clinics with complaints of respiratory disease painand symptoms: ➢ Cough; ➢ Chest pain; ➢ Wheezing; ➢ Haemoptysis. • Perform clinical examination (front and back of chest) of patient presenting to the general medicine clinics with complaints of respiratory disease: ➢ Inspection; ➢ Palpation; ➢ Percussion; ➢ Auscultation.

		• Interpret findings seen on chest x-rays for Pneumothorax/ pleural effusion.
NEUROLOGICAL DISEASES		
1.	**Neurological diseases**	➢ Discuss the etiology, clinical features, types, differential diagnosis, investigations, diagnosis, management and complications of the followingneurological diseases ➢ Facial Pain/Palsy; ➢ Headache; ➢ Stroke; ➢ Epilepsy; ➢ Parkinsons; ➢ Meningitis
2.	**Clinical Teachings- History taking and clinical examination in Neurological disease**	• Take a comprehensive history for a patient presenting to the generalmedicine clinics with complaints of neurological disease pain and symptoms: ➢ Headache; ➢ Facial pain; ➢ Dizziness; ➢ Coma; ➢ Amnesia.
		• Assess higher mental functions of patients presenting to the generalmedicine clinics: ➢ Level of consciousness; ➢ Behavior; ➢ Speech; ➢ Memory. • Perform examination of: ➢ Cranial nerves; ➢ Motor system and reflexes; ➢ Sensory system Crude touch, pain and temperature; ➢ Fine touch, pressure, vibration, joint position; ➢ Two-point localization and two-point discrimination Cerebellem
KIDNEY AND URINARY TRACT		
1.	**Diseases of Kidney and Urinary Tract**	• Discuss the etiology, clinical features, types, differential diagnosis, investigations, diagnosis, management and complications of the following diseases of kidney and urinary tract: ➢ Acute and Chronic Renal Failure; ➢ Nephrotic and Nephritic Syndrome; ➢ UTI; ➢ Electrolytes Imbalances.
ENDOCRINE SYSTEM		

1.	**Diseases of Endocrine System:**	• Discuss the etiology, clinical features, types, differential diagnosis, investigations, diagnosis, management and complications of the followingdiseases ➢ Pituitary Diseases; ➢ -Thyroid Disorders; ➢ -Parathyroid Disorders; ➢ -Adrenal Disorders; ➢ -Diabetes Mellitus; ➢ -Vitamin Deficiencies (Vit. B, C, D).
	INFECTIOUS DISEASE	
1.	**InfectiousDiseases**	• Discuss the sources, etiology, clinical features, types, differential diagnosis, investigations, diagnosis, managementand complications of the following Infectious diseases: ➢ Tetanus; ➢ Malaria; ➢ Viral Fevers (Dengue, Chikungynea); ➢ HIV/Mumps; ➢ Sepsis; ➢ Diphtheria; ➢ Hospital Acquired Infections (Hepatitis, Pneumonia,Candidiasis).
	BLOOD	
1.	**Blood Disorders**	• Discuss the sources, etiology, clinical features, types, differential diagnosis, investigations, diagnosis, management and complicationsof the following blood disorders: ➢ Anemia; ➢ Leukemia; ➢ Lymphoma; ➢ Thrombocytopenia; ➢ Bleeding disorders/Anti-coagulants; ➢ Blood products and transfusions; ➢ Shock (anaphylactic, cardiogenic, hypovolemic). • Discuss the following: Blood products and transfusion; • Anticoagulant and antithrombotic therapy; • Haematopoietic stem cell transplant
	RHEUMATOLOGICAL AND BONE DISEASES	
1.	**Diseases of joints and bones**	• Discuss the sources, etiology, clinical features, types, differentialdiagnosis, investigations, diagnosis, management and complications of the following diseases of joints and bones: ➢ SLE; ➢ RA;

		➢ Sero-negative Arthropathy; ➢ Osteoporosis/ Osteomalacia; ➢ Sjogren's syndrome.

GENERAL SURGERY

PRINCIPLES OF SURGERY

S/No.	Topic	Learning Objectives
1.	**Physiological response to Surgical Traumaand homeostasis**	• Discuss the classical concepts of homeostasis and thephysiochemical and biochemical changes associated with it. • Enlist: ➢ Mediators of metabolic response to injury; ➢ Avoidable factors that compound the metabolicresponse to injury. • Describe changes in body composition. • Describe optimal perioperative care.
2.	**Wound and itsRepair**	• Describe the normal healing response. • Discuss management of wound. • List disorders of healing. • Categorize variety of scars and their treatment
3.	**Pathophysiologyand Management of Shock**	• Discuss the pathophysiology and patterns of shock. • Prioritize the sequence of resuscitation. • Discuss the use of blood and blood products in shock.Describe risks of blood transfusion.
4.	**Investigation and treatment of infection and parasitic infestation of surgical**	• Classify infections. • List the determining factors for development of infection. • Discuss the local and systemic manifestation, sign and symptoms of bacterial and parasitic infections • Describe the principles of antimicrobial treatment. • Justify the choice of antibiotics and prophylaxis in various infections.
5.	**Haemorrhage, Blood Transfusion andtheir implications**	• Define: ➢ Haemorrhage; ➢ Blood transfusion. • Discuss the types and pathophysiology of Haemorrhage. • List various blood and blood products used for transfusion. • Describe the preparation of blood products and theprocedure for transfusion.

6.	**Management of Acutely injured and critically ill patients**	• Define: ➢ Trauma; ➢ Aspiration pneumonia; ➢ Embolic phenomenon. • Describe types of injuries • Discuss: ➢ Primary and secondary survey; ➢ Resuscitation.
7.	**Principles in management of common Skin and Soft Tissue problems**	• Discuss the sign and symptoms of acutely injured andcritically ill patients. • Diagnose acutely injured and critically ill patients basedon history and clinical examination and investigations. • Formulate treatment and prevention plan for acutely injured and critically ill patients. • Define: ➢ Ulcers; ➢ Abscess; ➢ Sinus; ➢ Fistula; ➢ Swelling. ➢ Embedded foreign bodies and Minor injuries • Discuss types, sign and symptoms and pathophysiologyof common skin and soft tissue problems. • List investigations. • Diagnose common skin and soft tissue problems basedon history and clinical examination and investigations. • Justify management of common skin and soft tissue problem by antibiotics, surgery or a combination of both
8.	**Principles of Anaesthesia**	• Define Anaesthesia. • Classify various types of anaesthesia. • Discuss the mechanism and stages of different anesthesia. • Manage patients that are scheduled for general anesthesia including considerations for pre-operative fasting and airway assessment.
9.	**Nutrition of surgical patients**	• Discuss pre-operative and post-operative malnutrition.Describe balance of electrolytes. • Evaluate the nutritional status of surgical patients.Manage the nutritional status of surgical patients
EMERGENCIES		
1.	**Poly trauma with airway difficulty and circulatory instability**	• Discuss initial evaluation and intervention of patients with polytrauma and airway difficulty. • Discuss steps of intubation of trauma patient. • Describe simple airway strategy

2.	**UncontrolledExternal Hemorrhage**	• Define uncontrolled external hemorrhage. • Discuss types of uncontrolled external hemorrhage. • Describe primary and secondary survey. • Manage patients with uncontrolled external hemorrhage
3.	**Patient in Hypovolemic or Septicemic Shock**	• Define: ➢ Hypovolemic; ➢ Septicaemic Shock. • Classify hypovolemic and septicaemic shock. • Differentiate between hypovolemic and septicemic shockbased on pathogenesis and signs and symptoms. • Discuss management of hypovolemic and septicemicshock.
4	Tension Pneumothorax	• Define Tension Pneumothorax. • Discuss pathophysiology, signs and symptoms andtreatment of Tension Pneumothorax
5.	**Cardiac Tamponade**	• Define Cardiac Tamponade. • Discuss pathophysiology, signs and symptoms andtreatment of cardiac tamponade
6.	**Unconscious patient due toHead Injury**	• Discuss signs, symptoms and management ofunconscious patient due to head injury.
7.	**Gas Gangreneand Tetanus**	• Define: Gas Gangrene;Tetanus. • Discuss types of Gas Gangrene and Tetanus. Differentiate gas gangrene and tetanus based on signand symptoms and treatment.
8.	**Burns**	• Discuss depth of burn, quantity of fluid to be given,techniques and pathophysiology of burn. • Manage patients presenting to the department withburns.
	HEAD & NECK	
1.	Development abnormalities ofpalate, lip	• Discuss types and features of development abnormalities of palate and lip. • Manage developmental abnormalities of palate and lip
2	Principles of management ofHead Injuries and its complications	• List types of head injuries. • Manage patients presenting to the hospital with headinjuries. • Discuss complications of patients presenting with headinjuries
3	Diseases of Salivary glands(Inflammation, Calculus, Tumors)	• Describe various diseases and abnormalities of salivaryglands. • Discuss clinical features and management of variousdiseases and abnormalities of salivary glands

4.	Neck lumpsincluding LymphaticsThyroid, Parathyroid	• Discuss clinical features, abnormalities and managementof neck lumps including: ➢ Lymphatics; ➢ Thyroid ➢ Parathyroid
	GASTRO-INTESTINAL TRACT	
1	Conditions Causing Acute Abdomen	• Discuss causes, clinical features and management ofconditions causing acute abdomen.
2	Abdominal Wall lHernia	• Discuss clinical presentation and management of patients with abdominal wall hernia
LIVER		
1	Obstructive Jaundice	• Discuss clinical features and management of ObstructiveJaundice
2	Hydated cyst	• Discuss clinical features and management of Hydated cyst.
	GALL BLADDER	
1	**Acute and chronic Cholecystitis**	• Discuss types, clinical features and management ofacute and chronic cholecystitis
2	**Cholelithiasis and its Complications**	• Discuss clinical features, management andcomplications of Cholelithiasis
	SKIN AND SOFT TISSUE	
1	**Common benign and malignant skin lesions**	• Discuss causes, clinical features and management ofcommon benign and malignant skin lesions
2	**Infections**	• Discuss clinical features and management of: ➢ Wounds; ➢ Ulcers; ➢ Abscesses; ➢ Sinuses; ➢ Fistulae.
3	**Soft Tissue Lumps**	• Discuss clinical features and management of Soft TissueLumps.
	VASCULAR AND NERVE DISORDERS	
1	**Arterial Disorders (Aneurysm and Gangrene**	• Discuss causes, clinical features and management ofAneurysm and Gangrene
2	**Varicosities**	• Discuss causes, clinical features and management ofVaricosities
3	**Deep Venous Thrombosis**	• Discuss causes, sign and symptoms and managementof Deep venous thrombosis
4	**Peripheral nerve Injuries**	• Discuss causes, clinical features and management ofPeripheral nerve Injuries

	ORAL MEDICINE PRINCIPLES OF INVESTIGATION & DIAGNOSIS	
S. No	**Topic**	**Learning Objectives**
1	**History Taking**	• Record a comprehensive history. • Discuss the significance of each component of history, e.g. importance of recording the presenting complaint inthe patient's own words, impact of an underlying dental condition on the patients' oral health management
2	**Investigations**	• Perform General Physical, Extraoral and Intraoral examination: ➢ TMJ and muscles of mastication; ➢ Cervical lymph nodes; • Cranial nerve examination, with emphasis on CN- Vand VII. • Interpret findings seen on the following investigations: ➢ Haematological; ➢ Radiological; ➢ Histological; Specialized imaging, e.g ➢ Sialography, ➢ CT scan, ➢ MRI, Radioisotope scan; ➢ Molecular biology; ➢ Culture and sensitivity testing, Serology, PCR; ➢ Immunohistochemistry.
3	**Diagnosis**	• Formulate differential diagnoses for common oral pathologies on the basis of ➢ Site of lesion; ➢ Type/physical characteristics of the lesion
4	**Treatment planning**	• Formulate treatment plans for common oral and maxillofacial pathologies presenting to the dental OPD.
	Oral Infections	
1	**Bacterial Infections**	• Describe the signs, symptoms and clinical features ofbacterial infections of the oro-facial region: ➢ Odontogenic infections ➢ Cellulitis ➢ Ludwig's angina; ➢ Actinomycosis; ➢ Syphilis. • List the investigations required to reach a diagnosis Manage patients presenting with bacterial infections tothe dental OPD. • Justify the choice of antibiotic use in treating bacterial infections. • List down reasons for failure of antibiotic therapy
2	**Viral Infections**	• Discuss signs, symptoms and clinical features of viralinfections of oro-facial region: ➢ Herpes simplex virus;

		➢ Varicella zoster virus; ➢ Coxsackie virus; ➢ Epstein Barr virus; ➢ Cytomegalovirus; ➢ Human immunodeficiency virus. • Manage patients presenting with viral infections to thedental OPD. • Justify the choice of antiviral therapy.
3	**Fungal Infections**	• Classify fungal infections. • Manage patients presenting with fungal infections to thedental OPD. • Discuss reasons for failure of antifungal therapy • Discuss the signs, symptoms and clinical features offungal • List investigations required for diagnosis infections of the oro-facial region
	ORAL ULCERATIVE LESION	
1	**Classification**	• Classify oral ulcerative lesions on the basis of etiology
2	**Non- vesiculobullous conditions**	• Discuss the clinical features of the non-vesiculobullousconditions affecting the oral cavity. • List the investigations available for diagnosis of non-vesiculobullous conditions. • List the common pharmacological treatment options formanagement of non-vesiculobullous conditions
3	**Vesiculo- bullous ulcers conditions**	• Discuss the clinical features of vesiculo-bullous conditionsaffecting the oral cavity. • List investigations available for diagnosis of vesiculo-bullous conditions. • Discuss the common pharmacological treatment optionsfor management of vesiculo-bullous conditions.
	ORAL SOFT TISSUE LESIONS	
1	**White Lesions**	• Classify white lesions of the oral cavity. • Differentiate white lesions on the basis of their etiology,history and clinical features. • Discuss management options of persistent, unresolvingwhite lesions.
2	**Red Lesions**	• Classify red lesions of the oral cavity. • Differentiate red lesions on the basis of their etiology,history and clinical features. • Discuss management options of persistent, unresolving red lesions.
3	**Pigmented Lesions**	• Classify pigmented lesions of the oral cavity. • Differentiate between malignant melanoma and other pigmented lesions of the oral cavity. • Discuss management of malignant melanoma
4	Premalignant lesions and conditions	• Differentiate between premalignant lesions and conditions. • Discuss management of dysplastic lesions. • List risk factors for malignant changes in oralpremalignant lesions/conditions.

	FACIAL PAIN	
1	**Facial Pain**	• Describe causes of Oro-facial Pain. • Differentiate amongvarious presentations of facial pain based on the historyand clinical examination. • Describe clinical features, diagnosis and management of:Trigeminal neuralgia; • Atypical facial pain; Burning mouth syndrome.
2	**Facial Palsy**	• List causes of facial palsy. • Diagnose Bell's palsy in patients presenting to the dentalclinic. • Manage patients presenting to the dental clinic with facialpalsy.
	SALIVARY GLAND DISORDERS	
1	**Salivary Flow Obstruction**	• Classify salivary flow obstruction on the basis ofaetiology.
2	**Infections (Sialadenitis)**	• Describe the clinical features of bacteria land viral sialadenitis. • Manage patients presenting to the dental OPD with sialadenitis
	TEMPOROMANDIBULAR JOINT DISORDER	
1	Evaluation	• Discuss common signs and symptoms associated withTMJ disorders. • Discuss current investigations available for the evaluationof TMJ disorders, e.g. arthrography, CT scan, MRI.
2	Treatment	• List common pharmacological treatment options, occupational therapy, prosthetic splint therapy, alternativedental therapy for pain.
	SYSTEMIC DISORDERS	
1	**Cardiovascular Diseases**	• Discuss clinical considerations for dental management of patients: with cardiovascular diseases;on warfarin therapy; on anti-platelet medication. • Describe current guidelines for antibiotic prophylaxis forinfective endocarditis. • Discuss oral manifestations of antihypertensivemedication
2	**Respiratory Diseases**	• Discuss the management of an asthmatic and chronicobstructive pulmonary disease patient. • Discuss clinical features, investigations and treatment ofSarcoidosis
3	**Gastrointestinal Diseases**	• Discuss oral manifestations of GI diseases: ➢ Crohn's disease; ➢ Ulcerative colitis; ➢ Orofacial granulomatosis; ➢ Coeliac disease; ➢ Hepatitis B and C. • Discuss considerations for dental management of a patient with inflammatory bowel disease, Hepatitis B and C.
4	**Renal Diseases**	• Discuss oral manifestations of renal diseases. • Discuss considerations for dental management of apatient with chronic renal disease.

5	**Haematological Diseases**	• Discuss oral manifestations of haematological diseases: ➢ Anaemia; ➢ Leukaemia; ➢ Lymphoma. • Discuss considerations for dental management of apatient with haematological disease.
6	**Haemorrhagic Diseases**	• Discuss oral manifestations of haemorrhagic diseases: Purpura; von Willebrand's disease; Haemophilia. • Discuss considerations for dental management of apatient with haemorrhagic disease.
	MEDICAL ASPECTS OF ORAL SURGERY	
1	**Management of Medically Compromised Patients**	• Diagnose dental problems in medically compromised patient • How to obtain informed written consent • Discuss dental management of patients with compromising medical condition • Management of pregnant patient in dentistry
	PRINCIPLES OF ORAL SURGERY	
1	**Sterilization**	• Aseptic techniques and universal precautions • Techniques of instrument sterilization and disinfection • Maintenance of sterility • Operating disinfection • Surgical staff preparation. • Explain post-surgical asepsis
2	**Incision, Flap Design and tissue handling**	• Discuss and demonstrate incisions and flap design • Prevention of flap necrosis, flap dehiscence and flap tearing
3	**Post-Operative care, Hemostasis, nutrition and prevention of infection**	• Discuss haemostasis and means of promoting wound haemostasis • Explain decontamination and debridement, edema control • Patient general health and nutrition
4	**Wound Healing**	• Discuss causes of tissue damage • Discuss wound repair and epithelialization • Explain stages of wound healing • Discuss surgical significance of wound healing concepts • Facial neuropathy of traumatic origin • Classification of nerve injury and discuss nerve healing.
	EXODONTIA	
1	**Principles of use of instruments**	• Explain uses of various instruments used in oral surgery for exodontia purpose • Discuss the instrument tray system
2	**No- Surgical Extraction**	• Discuss indications and contraindications for removal of teeth • Discuss mechanical principles involved in tooth extraction • Principles of forceps use • Discuss specific techniques for removal of each tooth • Post extraction care of tooth socket

		• Discuss the potential side effects
	Surgical Extraction	• Principles of flap design, development and management • Design parameters of soft tissue flap • Types of mucoperiosteal flap • Principles of suturing • Indications, principles and techniques of surgical extraction • Technique for open extraction of single and multirooted teeth • Removal of small root tip and fragment • Discuss policy for leaving root fragments • Sequence of multiple extractions
	BASICS OF PAIN AND ANXIETY CONTROL	
	Module Outcome	• The goal of the pain and anxiety control module is to help dentistry students learn how to administer and utilise local anaesthetics. • Knowing the pharmacology, neurophysiology, neurochemistry, and anatomy of administering local anaesthetics. • Aware and skilled in assessing the patient's physical and mental health before administering local anaesthetic, sedation, or having dental treatment. Knowledgeable about the difficulties, side effects, and treatment of those issues related to sedatives and local anaesthetic drugs.
	Course Competencies	**Critical Thinking:** • Apply biomedical science knowledge in the delivery of patient care. **Communication and Interpersonal Skills** • Apply the fundamental principles of behavioural sciences using patient-centered approaches for promoting, improving and maintaining oral health. **Assessment, Diagnosis, and Treatment** • Patient Assessment, Diagnosis, Treatment Planning and Informed Consent: • Provide oral health care within the scope of general dentistry to include patient assessment, diagnosis, comprehensive treatment planning, prognosis, and informed consent. **Establishment and Maintenance of Oral Health** • Provide oral health care within the scope of general dentistry to include local anesthesia and pain and anxiety control, including consideration of the impact of prescribing practices and substance use disorder.
S.NO	**TOPICS**	**LEARNING OBJECTIVES**
	Scope of Pain And Anxiety Control	• Discuss the differences between the types of sedation / anesthesia • Discuss the pros and cons of each method of sedation /

1		anesthesia • Describe the risks and benefits of each method of sedation / anesthesia • Summarize the requirements of state law regarding the administration of local anesthesia, sedation and general anesthesia • Discuss the legal ramifications of administration of local anesthesia, sedation and general anesthesia
2	**Neurophysiology of anxiety / pain conduction / pain control**	• Discuss the desirable properties of local anesthetics • Discuss the fundamentals of impulse generation and transmission • Discuss the mode and site of action of local anesthetics • Discuss the active forms of local anesthetics • Discuss the kinetics of local anesthetic onset and duration of action.
3	**Pharmacology of local anesthetics / vasoconstrictors**	• Discuss the pharmacokinetics of local anesthetics, including uptake, distribution, metabolism, and excretion • Discuss the systemic actions of local anesthetics on the following: a. Central nervous system b. Cardiovascular system c. Respiratory system d. Other miscellaneous actions • Describe the indications for using a vasoconstrictor in a local anesthetic solution. Consider the following: a. Mechanism of action b. Metabolism c. Maximum dosage d. Toxic effects e. Contraindications • Discuss the following information for lidocaine, mepivacaine and bupivacaine: a. Type of anesthetic, ester or amide b. Brand name(s) c. Onset and duration of action d. Metabolism, including uptake, redistribution, inactivation, and excretion e. Common concentrations used in dentistry Maximum dosage • Explain the two general categories of topical anesthetics • Discuss benzocaine, lidocaine, and tetracaine topical anesthetics • Calculate the amount of anesthetic and vasoconstrictor contained in the various types of anesthetic solutions
	CLINICAL APPLICATION OF LOCAL ANESTHESIA IN DENTISTRY	
1	**Armamentarium**	• Identify the components of the breech-loading aspirating syringes, needles, and carpules. • Discuss the problems that can occur with the syringes, needles

		and carpules • Discuss the component chemicals contained within the cartridge and their function • Explain when local anesthetic is no longer safe to administer.
2	**Anatomic considerations, clinical application and supplemental injection techniques**	• Discuss the following types of administration of local anesthetics: a. Maxillary anesthesia b. Mandibular anesthesia c. Gow-Gates d. Akinosi Vazirani e. PDL Injection f. Interosseous g. Controlled delivery devices
3	**Local and systemic complications**	• Discuss the causes, problems, prevention and management of the following local complications: a. Needle breakage b. Pain on injection c. Persistent anesthesia: paresthesia d. Trismus e. Hematoma f. Infection g. Tissue sloughing h. Lip chewing i. Facial nerve paralysis • Discuss the causes, problems, prevention and management of the following systemic complications: a. Local anesthetic overdose b. Epinephrine overdose c. Allergy d. Idiosyncratic reaction e. Side effects
	SEDATION IN DENTISTRY	
1	**Pharmacology of Sedative Agents – PO, IM, IV**	• Discuss the risks, benefits and complications associated with each route of sedation • Discuss the pharmacological properties, therapeutic effects and side effects of the each of the following sedative agents: • a. Benzodiazepines • b. Narcotics • c. Barbiturates • d. Chloral hydrate • e. Phenothiazines • f. Phenergan
	Nitrous Oxide/Oxygen Sedation	• Discuss the pharmacology of nitrous oxide / oxygen sedation • Discuss the equipment safety features • Discuss patient preparation • Discuss the clinical effects

		• Discuss the potential side effects
	• **EVALUATION**	
	Basic Injection Techniques	Students must bring their own dental charts/medical history, stethoscopes, safety glasses, a sterilized syringe and dental mirror for their assigned lab. Anesthetics, topical, needles and the required supplies will be provided. Students must make an appropriate chart entry.
	Review	Injection Videos in the document section, prior to your lab session • Chapters 5-15, Malamed (Local Anesthesia) (Armamentarium, Anatomy technique to supplement videos) • Chapters 2, 3, 5, 6 Malamed (Medical Emergencies) (Basic Emergency Information)
	Demonstrate the following injection techniques	• Anterior Superior Alveolar Nerve Injection • Middle Superior Alveolar Nerve Injection • Posterior Superior Alveolar Nerve Injection • Greater palatine injection • Inferior alveolar nerve block • Lingual nerve injection • Long buccal nerve injection • Mental foramen injection, mandibular anterior infiltration

PERIODONTOLOGY	
Learning Outcomes	• Students must acquire the knowledge of oral hygiene promotion, disease prevention and management of periodontal problems. • Students should become proficient in basic clinical skills of history taking, clinical examination, data interpretation and basic clinical treatment of periodontal problems. • Student must develop sympathetic attitude towards patients and take care of patient safety. • Students should develop a desire for self-learning and become lifelong learners. • Able to visualize the impact of disease on the community as a whole and able to study pathogenesis of specific disease and to plan prevention of those. • Students should adopt good clinical practices with knowledge of preventive, standardized care and management of common periodontal problems.

	• Students are equipped with knowledge and confidence to play a role of facilitator, supervisor and organizer in a primary health care program.

LEARNING OBJECTIVES		
Knowledge and Cognition	**Skills**	**Attributes**
• Student should be able to give description of common periodontal problems and diseases at different ages. • Student should show an understanding of national strategies aimed for health promotion, disease prevention and community management of periodontal disease. • Student should show understanding of importance of oral hygiene on systemic health, oral health and oral manifestation of systemic disease. • Student should show an understanding of interaction between genetic and environmental factors in the genesis of periodontal disease. • Student should be able to describe oral health care of periodontium when suffering from periodontal disease along with etiological factors causing it.	Students should be able to: • Obtain a proper clinical history from patient. • Perform adequate clinical examination of patient. • Interpret clinical and laboratory investigation. • Arrive at provisional/ definitive diagnosis regarding periodontal problems. • Advice proper oral hygiene maintenance measures for healthy periodontium. • Perform essential clinical procedures to treat periodontal disease.	To develop the right attitude to acquire knowledge and the willingness to learn newer concept; also seek opinion from a dental specialist when required.

LEARNING OBJECTIVES DURING CLINICAL POSTINGS

During Clinical posting and at the end of academic year, students must have thorough knowledge of:

- Infection control
- Periodontal instrumentation
- Chair position, Patient position, History taking 20 cases
- Principle of instrumentation; maintenance of instruments
- Tissue-gingiva, periodontal ligament, cementum, alveolar bone.
- Plaque control-both mechanical and chemical
- Motivation of patients-oral hygiene instructions
- Common soft and hard tissues in disease and health
- Pathologies related to Gingiva, Periodontal ligament, Cementum and Alveolar Bone.
- Be capable to establish differential diagnosis for common hard and soft periodontal tissues.
- Examination of Patients with Periodontal disease and emphasis should be given towards:
    - Gingival texture and consistency
    - Gingival bleeding
    - Gingival swelling (hyperplasia)
    - Gingival recession/Muco-gingival defects
    - Gingival pigmentation and ulceration
    - Epidemiological evaluation/Examination methods/Index system:
        - Plaque Index
        - Oral hygiene Index
            - Debris index
            - Calculus index
        - Sulcus bleeding index
        - Gingival index
        - Mucogingival index
        - Periodontal index
        - Community Periodontal Index and Treatment Needs (CPITN)
        - Tooth mobility Grade 1,2,3 Method
- Perio Pockets Type: Gingival/Suprabone/Infrabone
- Probing methods
- Dental Plaque and calculus recognition
- Dental Radiographic analysis of bone loss and patterns of bone destruction
  Purposes/General Aspects/ClinicalvsRadiographic Information
- Perio disease recognition and diagnosis
- Plaque induced
- Non-plaque induced

- Conditions
- Risk Factor
- Smoking
- Importance of Supragingival plaque removal
- Importance of Instruction/motivation
- Self-performed plaque control:
    - Brushing
    - Interdental cleaning
    - Adjunctive aids
    - Side effects
- Chemical Supragingival and Subgingival plaque control:
    - Local: Vehicle for the delivery of chemical agent and drugs
    - Systemic: Toxicology, Safety and side effects
- Non-surgical therapy:
    - Detection and removal of dental calculus, halitosis control
    - Methods used for Non-surgical root surface debridement
    - Hand instruments, Sonic and ultrasonic scalar, manual and ultrasonic instrumentation
    - Implication of furcation involvement
    - Pain and discomfort following non-surgical therapy
    - Re-evaluation, Prediction of outcome and evaluation of treatment
- Surgical therapy:
    - Introduction
    - Periodontal surgical procedures
    - Techniques in Periodontal pocket surgical therapy
    - Gingivectomy procedures
    - General guidelines for Periodontal Surgery/Instrument
    - Indications, Contraindications, Objectives, Local anesthesia in periodontal surgery
- Suturing techniques:
    - Periodontal dressings
    - Postoperative pain control
    - Post-surgical care
- Diagnosis /classification of periodontal disease
- Determination of prognosis and treatment plan
- Radiographic interpretation and lab diagnosis
- Principle of periodontal surgery
- Occlusion-correction & management.
- Splinting techniques
- Treatment of dental hypersensitivity
- Implants-basics
- GCF and Saliva

- Plaque and calculus
- Basic Periodontal Examination
- Lab investigations
- Systemic disease:
  - Diagnosis of Gingivitis, Periodontitis (Acute, Chronic)
  - Clinical features of Acute, Chronic
- Treatment planning protocolof patient with periodontal disease and Oral manifestation of Periodontal diseases:
  - Screening for Periodontal disease
- Initial Periodontal therapy (Infection control)
- Oral hygiene motivation
  - Counseling in Periodontal Care
  - Giving advise
- Mechanical Supra-gingival plaque control including Curettage/Root planning
- Surgical therapy all above
- Gingivectomy Procedures
- Flap procedures
- Regenerative procedures (Guided Tissue Regeneration/Guided Bone Regeneration)
- Osseous surgery
- Selection of surgical technique
- Outcomes of surgical periodontal therapy
- Healing following surgical pocket therapy
- Clinical outcome of surgical access therapy in comparison to non-surgical therapy
- Treatment of Furcation involved teeth
- Treatment of Endodontic and Periodontic lesions
- Muco-gingival therapy
- Dental Implant maintenance
- Diagnosis and management of Peri-implant disease
- Antibiotics in Periodontal therapy
- Regenerative Periodontal therapy (Barrier materials)

ASSESSMENT		
Knowledge and Cognition	**Skills**	**Attributes**
Case Discussion/PBL Session/Clinical Rotation test:	Case Discussion/PBL Session/Clinical Rotation test:	Case Discussion/PBL Session/Clinical Rotation test:
*OSCE: Objective Structured Clinical Examination	*OSCE: Objective Structured Clinical Examination	*OSCE: Objective Structured Clinical Examination
	OSPE: Objective Structured	

	Performance Evaluation	

PRACT.#	SCHEDULE OF SKILLS AND PROCEDURES	FACILITATORS
	Following Skills & Procedures Performed by the Students under Supervision	Faculty of Periodontology
1	Cross Infection control protocol	
2	History Taking	
3	Basic Periodontal Examination (BPE)	
4	Periodontal Charting	
5	Instruments, Equipment and their uses	
6	Chair Position, Patients Position, Instruments grasping and Finger Rests	
7	Clinical features, Diagnosis of Gingivitis. (All types and classifications), emphasis should towards • Gingival texture &consistency • Gingival bleeding • Gingival swelling(hyperplasia)	
	• Gingival recession / Muco gingival Defects • Gingival pigmentation and ulceration	
8	Examination of Patients with Periodontal Disease- recognition and diagnosis	
9	Identification of types of Periodontal Pockets Gingival / Supra Bone / Infra Bone	
10	Periodontal Probing methods	
11	Dental Plaque and calculus recognition	
12	Dental Radiographic examination Purposes / General Aspects / Clinical VS – Radiographic information	
13	Recognition of systemic risk factors causing periodontal diseases.	

14	Epidemiological evaluation / Examination methods / Index system
	/ Grading/Scoring
	• Plaque Index
	• Oral Hygiene Index
	  • Debris Index
	  • Calculus Index
	• Sulcus bleeding Index
	• Gingival Index
	• Mucogingival Index /gingival recession index
	• Periodontal Index
	• Tooth mobility grading
	• Furcation involvement grading	

15	Initial Periodontal Therapy (Plaque Control) Oral Hygiene motivations • Counseling in Periodontal Care • Giving instructions and advise Self performed plaque control techniques and methods • Brushing techniques • Inter dental Cleaning aids and techniques • Adjunctive aids Side effects of each techniques and methods	
16	Chemical Supra gingival plaque control Local : Vehicle for the delivery of chemical agent Systemic: Toxicology, Safety and side effects	
17	Non-Surgical Periodontal Therapy: • Hand scaling • Sonic and Ultra sonic scaling • Non-surgical root surface debridement and root planning • Management of Pain and discomfort following Non-surgical Therapy • Re-evaluation, Prediction of outcome and evaluation of treatment • Halitosis/breath Malodor control	
18	General guide lines for Periodontal Surgery / Instrument	
19	Local anesthesia in periodontal surgery – Techniques	
20	Suturing	
21	Periodontal Dressings	
22	Assessment of Clinical/radiographic outcome of surgical therapy in comparison to Non-surgical therapy	

	For the Following Procedures Students' Status will Remain as Observer	
23	Techniques in Periodontal pocket Surgery - Gingivectomy, Gingivoplasty	
24	Surgical Treatment of Furcation involved teeth	
25	Surgical management of Endodontics and Periodontics lesions	
26	Muco gingival Therapy- surgical management of gingival recession	
27	Treatment of Peri-Implant Lesions	
28	Regenerative periodontal therapy (Barrier materials)	

CURRICULUM LEARNING OUTCOMES, OBJECTIVES, ASSESSMENTS TOOLS
DEPARTMENT OF PERIODONTOLOGY

S #	TOPICS	Learning Outcomes	Learning Objectives	Assessment tools
1	Cross contamination and cross infection control protocol	-Understand the concept of cross contamination. - Identify common sources and pathways of cross contamination. - Acquire knowledge of effective cleaning, disinfection, and sterilization procedures.	- Describe appropriate control measures to prevent cross contamination in healthcare - Describe infection control protocols to ensure a safe and hygienic environment.	SEQs
2	The Anatomy, structure and functions of The Periodontal Tissues/ The normal periodontium	-Outline the main components of the periodontium. - Recognize the functional roles of each part of the periodontium in supporting tooth stability and overall oral health.	- Identify the key components; the gingiva, periodontal ligament, cementum, and alveolar bone. - Understand the structural and functional roles of each element within	BCQs

		-Recognize the structural changes in periodontal tissues associated with different stages of periodontal disease. - Outline the knowledge of periodontal anatomy to assess oral health and contribute to treatment planning in a dental or clinical setting.	the periodontium; GCF, Saliva, Blood supply, nerve supply, lymphatic drainage. - Describe the anatomical distinctions between healthy periodontal tissues and those affected by periodontal disease, age changes in periodontium. - Describe the application of knowledge of periodontal anatomy to oral health assessments and treatment planning.	
3	The Anatomy, structure and functions of The Periodontal Tissues/ The normal periodontium	Mentioned above	Mentioned above	
4	Oral Bio film and Calculus	- Describe the stages of dental calculus development and the consequences of its accumulation. - Outline the knowledge of oral biofilm and calculus in disease prevention strategies.	- Recognize the formation and composition of oral biofilm and its role in dental diseases. - Factors influencing biofilm formation and its relationship to oral health.	BCQs SEQs
5	Periodontal microorganism	- Outline the major microorganisms in periodontal diseases	-Identify key periodontal microorganisms,	BCQs SEQs

		and host inflammatory response after bacterial interactions. - Outline the mechanisms by which periodontal microorganisms can evade host defenses and cause tissue destruction.	their colonies and role in the pathogenesis of periodontal diseases. - Describe how these microorganisms contribute to the pathogenesis of periodontal diseases and the mechanisms involved. - Describe host response against bacterial invasion. - Describe the application of knowledge of periodontal microorganisms to develop effective treatment and prevention strategies for periodontal diseases.	
6	Pathogenesis of Plaque associated Periodontal disease	- Identify and describe the key factors contributing to the pathogenesis of periodontal diseases, including microbial involvement and host response.	- Explain the sequential stages of plaque-associated periodontal disease, from initial inflammation to advanced tissue destruction. - Describes the knowledge and skills to develop effective preventive and treatment strategies for plaque-associated	BCQs SEQs

			periodontal diseases, thereby promoting better oral health.	
7	Etiology and susceptibility in Periodontal Disease -Local risk factors.	-To assess an individual's susceptibility to periodontal disease based on local risk factors, and understand how these factors influence periodontal health.	- Identify local risk factors that contribute to the development and progression of periodontal disease, including factors related to dental anatomy, oral hygiene, and lifestyle habits. - Outline the knowledge and skills to recommend appropriate preventive and therapeutic measures to manage local risk factors in order to improve periodontal health and prevent disease progression	BCQs SEQs
8	Systemic risk factors for periodontal diseases	- Recognize the complex interactions between systemic	-Describe various systemic risk factors, such as diabetes,	BCQs SEQs

		health and periodontal conditions, including the bidirectional relationships and potential mechanisms involved.	cardiovascular disease, and immunological conditions, and their influence on the development and progression of periodontal diseases.	
9	Instruments use in periodontal therapy-classification	-Classify and categorization of instruments used in periodontal therapy, including hand instruments, ultrasonic devices, and rotary instruments. -	- Identify the specific functions and applications of different periodontal instruments, such as scalers, curettes, and periodontal probes. - Develop the ability to select appropriate instruments based on the patient's periodontal condition and treatment goals.	BCQs OSPE/OSCE
10	Instruments use in periodontal therapy-handling, grasping, finger rests, maintenance	- Enlist the ability to effectively grasp and handle periodontal instruments, ensuring precise control and minimal patient discomfort during treatment. - Knowledge and skills in maintaining periodontal instruments, including sharpening, sterilization, and routine care to	-Describe various finger rest techniques and their applications, allowing for steady hand support and improved instrument maneuverability in different treatment scenarios. - Describe the protocols for instrument sterilization and	BCQs

		prolong their lifespan and maintain optimal performance.	infection control to ensure the safety of both patients and dental healthcare providers during periodontal therapy procedures.	
11	Chair position, patient and dentist position- ergonomics	- Recognize proper patient positioning in the dental chair for efficient examination and treatment, while considering patient comfort and safety. -Recognize how effective chair, patient, and dentist positioning can contribute to the efficiency of dental procedures and the delivery of high-quality patient care.	- Describe how to adjust and maintain the dental chair for the comfort of both patients and dental professionals, reducing the risk of musculoskeletal strain and discomfort.	BCQs
12	Identification and diagnosis of periodontal diseases in general dental practice- Basic Periodontal Examination (BPE)	- Classify the severity of periodontal diseases based on BPE scores and assess the appropriate treatment approach.	- Identify the signs and symptoms of periodontal diseases, including gingivitis and periodontitis, using BPE and other diagnostic tools. - Determine patients comprehensive treatment plans, integrating BPE findings with other clinical assessments.	BCQs
13	Record of periodontal Examination/periodontal charting	- Developing the ability to accurately and	- Describe how to make periodontal diagnoses based on	BCQs OSPE/OSCE

		comprehensively chart periodontal conditions, including pocket depths, clinical attachment levels, bleeding points, and other relevant data. - Understand the importance of periodontal charting for tracking disease progression and evaluating the effectiveness of periodontal therapy over time.	charting findings, distinguishing between various stages and types of periodontal diseases. - How to utilize periodontal charting data to formulate evidence-based treatment plans that address individual patient needs and the severity of periodontal conditions.	
14	Radiographic aids in the diagnosis of periodontal disease	-Develop the skill to accurately interpret dental radiographs, including intraoral and panoramic images, for the diagnosis of periodontal conditions. - Utilize radiographic findings to support treatment planning decisions, including the choice of surgical procedures and therapeutic interventions in periodontal therapy.	- How to use radiographic aids to assess bone loss, furcation involvement, and other periodontal disease indicators in a patient's oral health. - Identify radiographic anomalies and pathologies associated with periodontal diseases.	BCQs
15	Initial Periodontal Therapy/non-surgical periodontal therapy in general dental practice-Oral hygiene Motivations for	- Develop skills in employing strategies to encourage patients to adhere to plaque control measures and	- Teach patients how to perform proper toothbrushing, flossing, and other oral	BCQs SEQs

	plaquecontrol and periodontal care.	engage in periodontal care. - Understand the role of oral hygiene motivation in promoting overall periodontal health and contribute to long-term disease management and prevention.	hygiene techniques to maintain periodontal health.	
16	Initial Periodontal Therapy Mechanical and chemical Supragingival plaque control.	-Develop proficiency in the mechanical removal of supragingival plaque using instruments such as toothbrushes and dental scalers. - Understand the use of chemical agents, such as mouthwash and antimicrobial rinses, in supragingival plaque control and their role in oral hygiene.	- Identify the impact of mechanical and chemical plaque control on supragingival health, leading to improved overall oral hygiene and periodontal wellbeing. - How to educate patients on the proper use of mechanical and chemical plaque control methods to maintain oral health.	BCQs SEQs
17	Sonic and ultrasonic scaling technique and methods	-Develop proficiency in operating and handling sonic and ultrasonic devices used in dental scaling procedures.	- How to use sonic and ultrasonic scalers to efficiently and effectively remove calculus deposits and biofilm from tooth surfaces and below the gumline.	BCQs

19	Subgingival scaling, root planning and curettage	-Develop proficiency in subgingival scaling techniques, which involve the removal of calculus and biofilm from below the gumline. - Perform root planing effectively, smoothing root surfaces to promote reattachment of periodontal tissues and prevent disease progression.	- How to sequence subgingival scaling, root planning, and curettage procedures within comprehensive periodontal therapy treatment plans.	BCQs
20	Local delivery antibiotics	- Recognize effective methods of delivering antibiotics to targeted periodontal sites, such as subgingival pockets, to enhance their therapeutic efficacy.	- Identify the specific indications for local delivery antibiotics and recognize contraindications, ensuring safe and appropriate treatment decisions. - How to Integrate local delivery antibiotics into comprehensive periodontal therapy plans to improve clinical outcomes and manage disease progression.	BCQs
21	Systemic Chemotherapeutic agents	-Recognize the specific indications for systemic chemotherapeutic agents in periodontal therapy and understand contraindications to their use.	- How to integrate systemic chemotherapeutic agents into comprehensive periodontal treatment plans, considering individual patient	BCQs

			needs and disease severity.	
22	Maintenance in Periodontal therapy	- Understand the importance of regular professional monitoring, including periodontal assessments and dental cleanings, to evaluate the effectiveness of treatment and detect early signs of disease recurrence. - Develop the ability to educate patients about proper oral hygiene practices and their crucial role in maintaining periodontal health.	- How to develop and implement effective maintenance protocols to support long-term periodontal health and prevent disease recurrence.	BCQs
23	Gingivitis – Clinical features	-Develop the ability to recognize and diagnose gingivitis based on clinical features, including visual assessment and patient symptoms.	- Identify the typical signs and symptoms of gingivitis, such as redness, swelling, bleeding, and changes in gingival texture.	BCQs SEQs OSPE/OSCE
24	Acute gingival infections	-Develop the ability to identify and diagnose acute gingival infections based on clinical features, patient history, and symptoms. - Understand the microbial and viral etiology of acute	- Identify and differentiate various types of acute gingival infections, including abscesses, ulcers, and herpetic lesions. - How to clinically diagnose and assess acute gingival infections, including	BCQs OSPE/OSCE

		gingival infections and the pathogenesis that leads to their development.	evaluating clinical signs and symptoms.	
25	Deseqamative gingivitis	- Comprehensive understanding of the underlying causes and contributing factors of desquamative gingivitis, such as autoimmune disorders and mucocutaneous diseases. - Develop the ability to identify desquamative gingivitis and differentiate it from other oral conditions, based on clinical presentation and patient history.	- How to distinguish between the various mucocutaneous disorders that can manifest as desquamative gingivitis, ensuring accurate diagnosis. - Understand the treatment options and management strategies available for desquamative gingivitis, including topical and systemic therapies to alleviate symptoms and control disease progression.	
26	Gingival enlargement	- Understand the underlying causes and contributing factors of gingival enlargement, such as medication-related factors, systemic diseases, and local irritants.	- Identify and classify various types of gingival enlargement, including inflammatory, drug-induced, and hereditary forms, based on clinical and histological features. - How to differentiate between different forms of gingival enlargement,	BCQs OSPE/OSCE

			ensuring accurate diagnosis and appropriate treatment planning.	
27	Gingival recession	- Understand the underlying causes and risk factors associated with gingival recession, such as periodontal disease, aggressive toothbrushing, and anatomical factors.	- Identify and diagnose gingival recession based on clinical examination, including assessment of recession depth and contributing factors. - Knowledge about treatment options and management techniques for gingival recession, including surgical procedures and non-surgical approaches like oral hygiene instruction.	BCQs
28	Gingival diseases in childhood	- Understand the underlying causes and risk factors associated with gingival diseases in children, such as poor oral hygiene, systemic conditions, and medication-related factors.	- Identify and diagnose gingival diseases specific to childhood, including conditions like gingivitis, eruption gingivitis, and congenital gingival disorders. - Knwledge about the treatment options and management strategies for gingival diseases in childhood, including behavior management and age-appropriate	BCQs

			interventions.	
29	The periodontal pocket	-Diagnostic techniques, including probing and radiographic assessment, to evaluate periodontal pockets and their impact on periodontal health. - Understand the causes and progression of periodontal pockets, including the role of bacterial biofilm and host response in their development.	- identify periodontal pockets, measure pocket depths accurately, and classify them based on severity. - Treatment options and management strategies for periodontal pockets, including non-surgical and surgical approaches, to promote pocket reduction and periodontal health.	OSPE/OSCE
30	Radiographic Examination of Bone loss, pattern of Bone loss and Periodontal pockets	- Interpret dental radiographs to identify and quantify bone loss, periodontal pockets, and the pattern of bone loss in periodontal disease.	- Identify different patterns of bone loss, such as horizontal, vertical, and furcation involvement, and understand their significance in periodontal diagnosis and treatment planning. - Ability to integrate radiographic findings with clinical data to provide a comprehensive periodontal diagnosis and treatment plan.	BCQs OSPE/OSCE
31	Chronic Periodontitis	- Understand the underlying causes and the progressive	- How to diagnose chronic periodontitis and classify it based	BCQs OSPE/OSCE

		nature of chronic periodontitis, including the roles of microbial biofilm and host response.	on clinical and radiographic criteria. - Knowledge of maintenance protocols and preventive measures to ensure long-term periodontal health and prevent disease recurrence. - Treatment modalities and strategies for managing chronic periodontitis, including non-surgical and surgical interventions.	
32	Aggressive Periodontitis	- Understand the specific etiological factors and risk factors associated with aggressive periodontitis, including microbial and genetic influences.	- How to diagnose aggressive periodontitis, differentiate it from other forms of periodontal disease, and classify it based on clinical and radiographic criteria. - Long-term management and maintenance protocols to ensure the stability of periodontal health and minimize disease recurrence.	BCQs OSPE/OSCE
34	Necrotizing Periodontal disease	- Understand the specific etiological factors and contributing factors associated with necrotizing	- How to diagnose and recognize necrotizing periodontal diseases based on clinical presentation,	BCQs

		periodontal diseases, including microbial agents, systemic conditions, and lifestyle factors.	symptoms, and risk factors. - Treatment approaches and interventions for managing necrotizing periodontal diseases, including debridement, systemic antibiotics, and supportive care.	
35	Periodontal abscess	- Understand the specific etiological factors and risk factors associated with periodontal abscesses, including microbial pathogens and local irritants.	- How to diagnose and identify periodontal abscesses based on clinical signs and symptoms, such as localized pain, swelling, and purulent discharge. - Treatment strategies and management approaches for periodontal abscesses, including drainage, debridement, and antibiotic therapy when necessary.	BCQs
36	Halitosis/Breath Malodor causes and management	- Understand the various causes of halitosis, including oral and systemic factors, and learn how to diagnose the specific etiology in individual patients.	- Describe the effective oral hygiene practices and treatment approaches for managing halitosis, including proper toothbrushing, tongue cleaning, and antimicrobial rinses.	BCQs

37	Periodontal diseases in female patient	- Outline gender-specific risk factors that may predispose female patients to periodontal diseases, including hormonal changes and pregnancy, and their impact on oral health.	- Female patients on oral hygiene practices, nutrition, and lifestyle choices that promote healthy gums and overall well-being throughout various life stages. -How to manage periodontal treatment plans to address the unique needs and challenges faced by female patients, taking into account their reproductive and hormonal status..	BCQs
38	**EVALUATION/CLASS TEST**			
39	Restorative and periodontal interrelationship	- Develop an understanding of the complex interrelationship between restorative dentistry and periodontal health, including how restorative procedures can impact periodontal tissues.	- How to assess and manage the risks associated with restorative treatments on periodontal health, considering factors such as occlusion, margin placement, and material selection.	BCQs
40	Endodontics and Periodontics interrelationship	- Develop a comprehensive understanding of the interrelationship between endodontics and	- How to to diagnose and assess cases involving both endodontic and periodontal issues and develop	BCQs OSPE/OSCE

		periodontics, including how endodontic and periodontal conditions can impact each other.	treatment plans that address both aspects effectively.	
41	Orthodontics and periodontics interrelationship	- Develop an understanding of the interrelationship between orthodontics and periodontics, including how orthodontic treatments can impact periodontal health. - Understand techniques and strategies to minimize complications and adverse effects on periodontal tissues during orthodontic procedures.	- How to assess and evaluate the risks associated with orthodontic treatments on periodontal health, including factors like tooth movement and occlusion changes. - Describes ollaborative treatment planning that integrates orthodontic and periodontal considerations to achieve the best possible outcomes for patients.	BCQs
42	Periodontal disease as a risk for systemic disease	-Deep understanding of the bidirectional relationship between periodontal disease and systemic conditions, including the mechanisms through which periodontal health can impact overall health.	- Identify systemic diseases and conditions that are influenced by periodontal disease, such as cardiovascular disease, diabetes, and respiratory conditions. - Skills in assessing and managing the risk of systemic diseases associated	BCQs

			with periodontal disease, including patient evaluation and preventive measures.	
43	Periodontal treatment of medically compromised patients	- Develop the ability to assess and understand the medical conditions and medications that may impact periodontal health and treatment.	- How to periodontal treatment plans to accommodate the specific needs and limitations of medically compromised patients. - Potential effects of medications on periodontal health and learn how to manage side effects and complications.	BCQs
44	Treatment of periodontal emergencies	- Develop the ability to promptly recognize and diagnose periodontal emergencies, such as acute periodontal abscesses or traumatic injuries to the periodontium. - Understand the potential risks and complications associated with periodontal emergencies, including the spread of infection and tooth mobility, and learn to mitigate these risks.	- How to provide immediate management and relief of pain or discomfort in cases of periodontal emergencies through procedures like drainage, debridement, and antibiotic therapy.	BCQs

45	General principle of periodontal surgery	- Develop proficiency in the fundamental surgical protocols, indications, contraindications and techniques used in periodontal surgery, including flap design, tissue manipulation, and suturing.	- How to conduct thorough patient assessments, including the evaluation of periodontal health, risk factors, and the selection of appropriate surgical procedures.	SEQs
46	Periodontal Pocket irradication /periodontal flap technique for pocket therapy	- Develop proficiency in designing and elevating periodontal flaps to access and visualize the root surfaces and periodontal pockets for effective therapy.	- How to perform thorough root debridement and root surface smoothing as part of pocket therapy to remove microbial biofilm and calculus deposits. - Which techniques for reducing pocket depth and achieving complete pocket closure through flap surgery, enhancing periodontal health.	BCQs
47	Periodontal surgical therapy-periodontal flap surgery	- Develop proficiency in designing and elevating periodontal flaps to provide access to the root surfaces and periodontal pockets for thorough therapy.	- How to perform effective root surface debridement, including the removal of microbial biofilm and calculus deposits, to promote periodontal health. - Techniques for reducing pocket depth and achieving	BCQs

			complete pocket closure through flap surgery, optimizing periodontal outcomes.	
48	Periodontal surgical technique- (gingival curettage, gingivectomy)	- Develop proficiency in performing gingival curettage to remove inflamed and necrotic tissues, facilitating improved periodontal health. - Understand the indications for and appropriate case selection criteria for gingival curettage and gingivectomy procedures.	- How to execute gingivectomy procedures to remove excess or diseased gingival tissue, optimizing esthetics and periodontal health. - Planning and execution of periodontal surgical techniques, including incision design, tissue removal, and suturing.	
49	Periodontal dressing	- Comprehensive understanding of periodontal dressings, their purposes, and the different types available for clinical use.	- How to properly apply periodontal dressings to protect surgical sites, control bleeding, and promote wound healing. - Describe the role of periodontal dressings in postoperative care, including patient comfort and promoting a healthy healing environment.	BCQs
50	Treatment of Gingival enlargement	- Classify various types of gingival enlargement,	- Differentiate gingival enlargement from other	BCQs

		including inflammatory, drug-induced, and hereditary forms, based on clinical and histological features. - Understand the underlying causes and risk factors associated with gingival enlargement, such as medication-related factors, systemic diseases, and local irritants.	conditions that may present with similar clinical features, ensuring accurate diagnosis and treatment planning. - Treatment options and management techniques for gingival enlargement, including periodontal surgery, medication adjustments, and oral hygiene education.	
51	Periodontal plastic and aesthetic surgery / Muco-gingival Therapy/ - introduction	- Understanding of the aesthetic concerns and patient expectations related to the appearance of the periodontium. -Knowledge of the surgical techniques and procedures used in muco-gingival therapy to improve the appearance and symmetry of the gingiva.	- How to conduct a comprehensive diagnostic assessment of the periodontium to identify areas in need of muco-gingival therapy. - Identify various treatment options available for enhancing the aesthetics of the periodontium, including soft tissue grafting and gingival recontouring.	SEQs OSPE/OSCE
52	Therapy to correct marginal tissue recession – flap procedures	- Understand the surgical techniques for achieving root coverage incases of marginal tissue recession, including connective tissue	- How todiagnose and select cases for flap procedures to correct marginal tissue recession, considering factors like recession	**SEQs**

		grafts and free gingival grafts.	depth,attachment loss, and esthetic concerns. - How to design and elevate flaps to access the recession defects, allowing for effective root coverage and soft tissue enhancement.	
53	Surgical treatment of gingival recession-pedicle flap and free gingival grafts	- Able to differentiate between pedicle flap and free gingival graft techniques. - Understand the indications, contraindications, and clinical outcomes of pedicle flap and free gingival graft procedures.	- Explain the principles and techniques of pedicle flap and free gingival graft surgeries.	SEQs
54	Surgical crown lengthening	- Develop the ability to diagnose excessive gingival display (gummy smile) and select appropriate cases for surgical crown lengthening, considering esthetic and functional factors. - Understand techniques for	- How to plan and execute surgical crown lengthening procedures, including the design of incisions, flap elevation, and bone recontouring.	SEQs

		managing both soft and hard tissues during crown lengthening, ensuring an esthetically pleasing outcome and adequate tooth structure exposure.		
55	Frenectomy and Frenotomy	- Develop the ability to evaluate the anatomy and attachment of oral frenula, including maxillary labial frenum and lingual frenulum.	- How to identify cases requiring frenectomy or frenotomy and understand the indications for these procedures. - surgical techniques and instruments used in frenectomy and frenotomy procedures, including incision design and tissue resection.	BCQs SEQs
56	Introduction to Periodontal Regenerative and Reconstructive Therapy	- Understanding of the principles of periodontal regeneration and reconstructive therapy to restore lost periodontal structures.	- How to conduct a comprehensive diagnostic assessment to identify cases where periodontal regeneration or reconstruction is indicated. - Identify the various treatment options available for periodontal regeneration and reconstruction, including guided	BCQs

			tissue regeneration and bone grafting.	
57	Periodontal Regenerative and Reconstructive Therapy – types of graft material	- Able to identify and differentiate between various types of graft materials used in periodontal therapy. - Understand the indications, contraindications, and clinical outcomes associated with different graft materials.	- Describe the types of graft materials used in periodontal regenerative and reconstructive therapy, including autografts, allografts, xenografts, and alloplasts.	BCQs OSPE/OSCE
58	Flap Techniques for Periodontal Regenerative and Reconstructive Therapy	- Understand the principles and goals of flap techniques in periodontal regenerative and reconstructive therapy. -Able to differentiate between various flap techniques used in periodontal surgery.	- Identify and explain the different types of flap techniques, including modified Widman flap, envelope flap, and papilla preservation flap.	BCQs
59	Treatment of Furcation Involved teeth	- Develop the ability to assess and classify furcation involvement in multi-rooted teeth, considering factors like location and severity.	- Describe the surgical techniques and instruments used to access and treat furcation-involved areas, including root resection, furcation plasty, and guided tissue regeneration. - How to develop treatment plans for furcation-involved teeth, considering	BCQs OSPE/OSCE

			factors like tooth anatomy, defect morphology, and systemic health.	
60	Trauma from occlusion/periodontal response to external forces	- Understanding of trauma from occlusion and its potential impact on periodontal health, including the etiology and mechanisms involved.	- How to conduct clinical assessments to identify signs and symptoms of trauma from occlusion, such as tooth mobility, fremitus, and occlusal interferences.	BCQs
61	Periodontal splinting	- Cases and indications for periodontal splinting, considering factors like tooth mobility, periodontal support, and patient needs	- Describe various techniques and materials used in periodontal splinting, including flexible splints, rigid splints, and wire splints.	BCQs
62	**Discussion & Revision of whole course**			
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64	**Weekly Class Test**			
65 66	**Clinical Practical Test** **Viva** **Weekly online test**			

SURGERY PLANNER			
Week number/ Dates	**Friday 10.00-11.30am- Prof. Syed Razi Muhammad/ Dr. Jamshed Bashir**	**Friday 11.30-2pm- Surgical Ward Dr. Jamshed Bashir (Gp. A)/ B)**	**Friday 2:30pm to 4:00 Pm Small group/PBL**
1	Introduction		
2 (16-Feb-2024)	Thyroid anatomy/Investigations	History taking	
3 (23-Feb-2024)	Non Toxic goite	History taking	
4 (01-March-2024)	Toxic goitre	General Physical Exam	
5 (8 -March 2024)	Thyroid tumours	General Physical Exam	
6 (15-March-2024)	Gas gangrene	Exam of swelling	
7 (22-March-2024)	Tuberculosis	Exam of Thyroid	
8 (29-March-2024)	Tetanus	Exam of Parotid	
9(05-April-2024)	Abscess	Exam of cervical LN	
10(19-April-2024)	Ulcer/Benign lesion of oral cavity	Exam of Ulcer/Sinus/wound	
11(26-April-2024)	CA tongue	Exam of Neck	
12(3-May-2024)	Daycare surgery	X-Rays/Basic Surgical Investigations	
13(10-May-2024)	Branchial Cyst	Sutures	
14(17-May-2024)	Tracheostomy	Basic Surgical Instruments	
15(24-May-2024)	Metabolic response to injury	Workshop basic procedures (IV line, NG tube, Endotracheal tube, Urethral Catheter)	
16(31-May-2024)	Anatomy of oral cavity	Review and Feedback	
17(07-June-2024)	Orophatyngeal cancer		
18(14-June-2024)	Biopsy		
19(21-June-2024)	Trauma to face/mouth		
20(28-June-2024)	Nutrition		
21(05-July-2024)	Introduction to plastic/reconstructive		

	surgery		
22(12-July-2024)	Cleft lip Palate		
23(19-July-2024)	Skin tumours		
24(26-July-2024)	Hypertrophic scars/Keloids		
25(2-Aug-2024)	Shock, types & Management		
26(9-Aug-2024)	Ca tongue		
27(16-Aug-2024)	Goitre		
28(23-Aug-2024)	Thyroid Tumoyrs		
29(30-Aug-2024)	Neck swellings		
30(13-Sep-2024)	Surgical Ethics		

	MODULE-I		
	At the end of the module, students should be able to;		
	LEARNING OBJECTIVES	**MITS**	**ASSESSMENT TOOLS**
	PERIODONTOLOGY		
33.	Describe the anatomy of healthy periodontium	IL/SGD	SEQs/OSCE/CP
34.	Describe the clinical features of healthy gingiva.	IL/SGD	SEQs/OSCE/CP
35.	Enlist and describe different types of gingiva.	IL/CR	BCQs/CP
36.	Describe the correlation of clinical & Microscopic features of gingiva.	IL/CR	BCQs/CP
37.	Explain the blood, lymphatic & nerve supply of Periodontium.	IL/CR	BCQs/CP
38.	Describe various types of fibers and cellular element of periodontal ligaments and their functions.	IL/CR	SEQs/CP
39.	Describe the anatomy and physiology of alveolar process.	IL	SEQs/CP
40.	Describe fenestration and dehiscence.	IL/CR	BCQs/CP
41.	Understand, describe & distinguish between Plaque index, gingival index and Community periodontal index for treatment need (CPITN).	IL/CR	BCQs/CP
42.	Understand the role of epidemiology in providing etiology & its relationship in making diagnosis.	IL/CR	SEQs/CP
43.	Define dental Plaque.	IL	BCQs/CP
44.	Discuss the types of dental plaque.	IL/SGD/CR	BCQs/SEQs/OSCE/CP
45.	Describe the stages involved in formation of dental plaque.	IL	BCQs/SEQs/CP
46.	Explain the structure & composition of Plaque.	IL/CR	SEQs/CP
47.	Discuss the physiological properties of Dental Plaque.	IL/CR	BCQs/CP
48.	Define dental calculus.	IL	BCQs/CP
49.	Describe the formation of dental calculus.	IL/SGD	BCQs/OSCE/CP
50.	Discuss the types of calculus.	IL	BCQs/SEQs/CP
51.	Describe the composition of dental calculus.	IL	BCQs/SEQs/CP
52.	Discuss the role of microorganisms in mineralization of calculus.	IL/CR	BCQs/SEQs/CP
53.	Discuss the role of dental calculus & other predisposing factors in the etiology of dental Diseases.	IL	SEQs/CP
54.	Discuss supra gingival & sub gingival calculus and their effects on periodontal tissues.	IL	SEQs/CP
55.	Enlists and describe the intraoral surfaces for bacterial adhesion.	IL	SEQs/CP

56.	Describe the principles of bacterial transmission, translocation and cross-infection associated with Periodontal Diseases.	IL/SGD/CR	BCQs/CP
57.	Discuss the association of plaque microorganisms with periodontal diseases.	IL	BCQs/CP
58.	Discuss the microbial specificity of periodontal diseases.	IL	BCQs/CP
59.	Describe the criteria for Identification of Periodontal pathogens (Koch's postulates).	IL/CR	BCQs/CP
60.	Identify the key characteristics of specific periopathogens.	IL	BCQs/SEQs/CP
61.	Describe and understand the microbial shift during periodontal disease.	IL	BCQs/SEQs/CP
62.	Describe the histological features of initial, early, established and advanced lesions of gingivitis.	IL	SEQs/CP
63.	Discuss the correlation of clinical and histopathological features of periodontal pocket.	IL/SGD	SEQs/CP
64.	Discuss the role of saliva in host defense.	IL/CR	SEQs/CP
65.	Discuss the role of sulcular fluid in healthy and diseased periodontal tissues.	IL/SGD/CR	BCQs/SEQs
66.	Describe the Inflammatory cell response in periodontal diseases.	IL/CR	BCQs
67.	Understand the correlation of gingival manifestations in immune mediated disorders	IL/CR	BCQs
	ORAL MEDICINE		
68.	Take relevant history	IL/ CR	OSPE
69.	Perform Extra-oral and Intra-oral examination.	IL/ CR	OSPE
70.	Know and interpret basic investigations required for making diagnosis (Hematology, Radiology, Histopathology and biochemistry).	IL	BCQs/ SEQs/ OSCE
71.	Know the indication of special investigations in relation to various diseases/conditions	IL/ CBL	BCQs/ Viva
72.	List the differential diagnosis for common diseases manifested in oral & maxillofacial region.	IL/CBL	SEQs/ Viva
73.	Formulate treatment plan and give various treatment options to patient.	IL/ CBL	CP
74.	State the role of immunity for maintenance of adequate oral health.	IL	SEQs
75.	List medical conditions that compromise host defense mechanism.	IL/ SGD	BCQs/ OSCE
76.	Sketch the management of oral pathological conditions in immune-compromised patients.	IL/ SGD	BCQs/SEQs
77.	List and describe management of various oral diseases associated with Diabetes Mellitus.	IL/ SGD	SEQs/ OSCE/ Viva
78.	List and describe management of various oral diseases associated with HIV infections.	IL/ SGD	BCQs/SEQs
79.	List the causes of infections in oro-facial region.	IL/ SGD	BCQs/SEQs

80.	Recall the causative agent and classification for syphilitic infections.	IL/ SGD	BCQs/SEQs
81.	Describe the etiology, clinical presentation of primary, secondary and tertiary syphilis.	IL/ SGD	SEQs/OSCE/ Viva
82.	Recall and interpret the investigations involved in diagnosis of syphilitic infections.	IL/ CBL	SEQs/OSCE/ Viva
83.	Describe the management of syphilitic infection	IL/CBL	SEQs/ Viva
84.	Identify and describe the clinical features of oral tuberculous ulceration.	IL/ SGD	SEQs/ Viva
85.	Enumerate various special investigations involved in making diagnosis of tuberculous ulcer.	IL/ SGD	OSCE/ Viva
86.	Describe the management of patient with oral tuberculous ulcer	IL/CBL/ SGD	SEQs/ OSCE/ Viva
87.	Describe the causes, Clinical features, diagnostic aids and management of various viral infections of Oro-facial region.	IL/CBL/ SGD	SEQs/ Viva
88.	Describe the clinical features, diagnosis and management of herpes simplex infection	IL/CBL/ SGD	SEQs / OSCE/ Viva
89.	Describe the clinical features, diagnosis and management of herpes zoster infection.	IL/CBL/ SGD	SEQs / Viva
90.	Describe the classification of oral candidal infection.	IL	SEQs / OSCE/ Viva
91.	Identify the predisposing factors of oral candidiasis.	IL	SEQs / OSCE/ Viva
92.	Describe the clinical features and management of acute hyperplastic candidiasis.	IL/ SGD	BCQs/SEQs
93.	Diagnose and discuss etiological factors, clinical features and management of angular stomatitis.	IL/ SGD	BCQs/SEQs
	OPERATIVE DENTISTRY		
94.	Revise the definition of dental caries	IL	VIVA
95.	Enlist the Etiology of dental caries	IL	BCQs/SEQs
96.	Review the pathogenesis of dental caries	IL	BCQs/SEQs
97.	Suggest the steps for prevention of dental caries	IL	BCQs/SEQs
98.	Identify restorative instruments	CR/SGD	OSCE
99.	Describe use of every restorative instrument	CR/SGD	OSCE
100.	Apply different grips to hold hand instruments	CR/SGD	OSCE
101.	Demonstrate the positioning of patient and dentist in operatory field	CR/SGD	OSCE
102.	Perform Clinical Examination & Diagnosis of Dental Caries	CR/SGD	BCQs/ OSCE
103.	Know the importance of Radiographs in Operative	CR/SGD	OSCE
104.	Perform Class 1 cavity preparation on patient tooth	CR/SGD	OSCE

105.	Demonstrate placement of lining in Class I cavity on patient tooth	CR/SGD	OSCE
106.	Perform filling & finishing of Amalgam in Class I cavities	CR/SGD	OSCE
107.	Execute placement of fissure sealant	CR	OSCE
108.	Execute Class V cavity preparation and its restoration on patient tooth	CR	OSCE
109.	Conduct clinical Examination and Diagnosis of Erosion, Attrition, Abrasion	IL/CR	BCQs/SEQs
110.	Perform clinical Examination and Diagnosis of cracked tooth	IL/CR	BCQs/SEQs/OSCE
111.	Prepare Class II slot cavity on patient tooth	CR/SGD	OSCE
112.	Perform Class III cavity and its restoration on patient tooth	CR	OSCE
113.	Know parts of matrix band retainer	Skill Lab	OSCE
114.	Practice of application of matrix band retainer with band & wedge in phantom lab	Skill Lab	OSCE
115.	Describe tooth colored restorative materials	IL/SGD	BCQs
116.	Review dental amalgam as a restorative material	SGD	BCQs
117.	Know parts of rubber dam system	SGD	BCQs
118.	Discuss advantages of rubber dam application	CR/SGD	OSCE
119.	Practice rubber dam application in phantom lab	Skill LAB	OSCE
120.	Recognize the causes of Restorative failure and postoperative problems	IL/SGD	BCQs/SEQs /VIVA
121.	Apply the methods of sterilization and cross infection control in Operative dentistry	IL/CR/SGD	BCQs/SEQs /VIVA
122.	Identify Endodontic instruments	CR	OSCE
123.	Introduce the basic principles of root canal therapy (technical aspects)	IL	BCQs/SEQs
124.	Observe steps involved in root canal treatment	CR/SGD	OSCE/VIVA
125.	Employ aesthetic considerations in diagnosis and treatment planning	IL	BCQs/SEQs/ OSCE
126.	Introduce the use of lasers in dentistry	IL	BCQs
	GENERAL MEDICINE		
127.	Discuss the approach to a patient with chest pain & describe the investigations, management and complications of ischemic heart disease including acute coronary syndrome and myocardial infarction.	IL	BCQs/SEQs/OSCE
128.	Discuss the pathophysiology, clinical manifestations and management of different types of heart failure.	IL	BCQs/SEQs/OSCE
129.	Diagnose the of normal ECG, arrhythmias & MI	IL/SGD	BCQs/SEQs/OSCE

130.	Discuss the approach to a patient with primary and secondary hypertension with its investigations & management.	IL	BCQs/SEQs/OSCE
131.	Discuss and describe the Valvular Heart Diseases & its management.	IL	BCQs/SEQs/OSCE
132.	Describe the usual presentations of rheumatic fever and infective endocarditis	IL/ SGD	BCQs/SEQs/OSCE
133.	Describe in detail the pathogenesis, clinical features, evaluation and treatment plan for asthma.	IL	BCQs/SEQs/OSCE
134.	Discuss in detail the pathogenesis, clinical features, evaluation and treatment plan for COPD.	IL	BCQs/SEQs/OSCE
135.	Define TYPE 1 And TYPE 2 respiratory failure and understand the causes.	IL	BCQs/SEQs/OSCE
136.	Assess the benefits and hazards of long term oxygen therapy.	IL	BCQs/SEQs/OSCE
137.	Differentiate between community acquired and hospital acquired pneumonia, assessment of severity and its management.	IL	BCQs/SEQs/OSCE
138.	Discuss the clinical manifestations, evaluation and investigation of pulmonary thromboembolism.	IL	BCQs/SEQs/OSCE
139.	Discuss the pathogenesis, etiology, clinical picture and management of Pleural effusion and pneumothorax	IL	BCQs/SEQs/OSCE
140.	Describe in detail the etiology, pathogenesis, clinical features, diagnostic tests, and treatment of Tuberculosis.	IL/SGD	BCQs/SEQs/OSCE
141.	Describe the etiology, pathogenesis, clinical features, diagnostic tests, and treatment of Nephritic syndrome	IL	BCQs/SEQs/OSCE
142.	Discuss the etiology, pathogenesis, clinical features, diagnostic tests, and treatment of acute renal failure	IL	BCQs/SEQs/OSCE
143.	Define Urinary tract infections along with their evaluation and treatment	IL	BCQs/SEQs/OSCE
144.	Discuss the etiology, pathogenesis, clinical features, diagnostic tests, and treatment of chronic renal failure	IL	BCQs/SEQs/OSCE
145.	Describe the clinical features, diagnostic tests, and treatment of post streptococcal glomerulonephritis	IL	BCQs/SEQs/OSCE
146.	Understands the relationship between the various clinical presentations of intrinsic renal disease and their underlying cause.	IL/ SGD	BCQs/SEQs/OSCE
147.	Describe the etiology, pathogenesis, clinical features, diagnostic tests, and treatment of Nephrotic syndrome	IL	BCQs/SEQs/OSCE
148.	Discuss the evaluation and treatment of folic acid, Vitamin A, B1, B2 and B12 deficiency	IL	BCQs/SEQs/OSCE
149.	Understand the basis of metabolic acidosis and lactic acidosis.	IL	BCQs/SEQs/OSCE
150.	Discuss the approach and management of dehydration and shock.	IL	BCQs/SEQs/OS

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151.	Discuss the approach to diagnose and manage electrolyte imbalance.	IL/ SGD	BCQs/SEQs/OSCE
	GENERAL SURGERY		
152.	Demonstrate the responses to homeostasis & metabolic changes in response to Trauma and stress	IL	BCQs/SEQs
153.	Describe Pathophysiology of shock ,types & management	IL	BCQs/SEQs/OSCE
154.	Describe the management of hemorrhage, blood transfusion indication reaction and management.	IL/SGD	BCQs/SEQs/OSCE
155.	Understand and Describe the Sterilization, asepsis techniques of sterilization & Sterilization of OT, prevention of infection in OT and the preventive measures for doctors.	IL/CR	BCQs/SEQs
156.	Discuss wounds types & management	IL/CR	BCQs/SEQs
157.	Diagnose surgical infections and their management	IL/CR	BCQs/SEQs/OSCE
158.	Describe the management of Chronic infection, Leprosy & TB	IL	BCQs/SEQs
159.	Demonstrate and define Abscess, Sinus fistula, subcutaneous swellings, ulcer types, cellulitis etc.	IL/SGD/CR	BCQs/SEQs/OSCE
160.	Describe the problems of fluid electrolyte disturbances and the correction	IL/CR	BCQs/SEQs
161.	Understand and discuss the Acid Base disturbances	IL/CR/PW	BCQs/SEQs/OSCE
162.	Describe the Types of nutrition, values of various fluids, complications	IL/CR	BCQs/SEQs/OSCE
163.	Discuss the priniples of management of preop, post op cases	IL/CR/PW	BCQs/SEQs/OSCE
164.	Describe various types of anesthesia and complications and peroperative care of patient.	IL/CR/PW	BCQs/SEQs
165.	Diagnose & describes the skin & subcutaneous lesions.	IL/CR/PW/SGD	BCQs/SEQs/OSCE
166.	Describes the diseases involving the salivary glands	IL/CR/PW/	BCQs/SEQs/OSCE
167.	Describe the common benign Breast diseases and describe the malignant lesions their diagnosis, risk factors and principles of management	IL/CR	BCQs/SEQs

Commencement of Module		Weekly Schedule of Module PERIODONTOLOGY
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Knowledge Of Healthy Periodontium **LO (33-40)**
	Week- 2	Epidemiology of Periodontal diseases **LO (41-42)**
	Week- 3	Dental Plaque **LO (43-47)**
	Week- 4	Dental Calculus **LO (48-54)**
	Week- 5	Microbiology Of Plaque Associated Periodontal Disease **LO (55-61)**
	Week- 6	Histopathogenesis Of Plaque Associated Periodontal Disease **LO (62-63)**
	Week- 7	Host Response In Periodontal Disease **LO (64-67)**
	Week- 8	Revision Of Module 7 topics
	Week- 9	Presentations
	Week-10	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module ORAL MEDICINE
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	History and examination **LO (68-69)**
	Week- 2	Investigations and X-Rays **LO (70-73)**
	Week- 3	Immunity **LO (74-76)**
	Week- 4	Role of immunity in oral health **LO (74-75)**
	Week- 5	Management of immune-compromised patients **LO (76-78)**
	Week- 6	Bacterial infection **LO (79-86)**
	Week- 7	Fungal infection **LO (90- 93)**
	Week- 8	Viral infection **LO (87-89)**
	Week- 9	CAT and Feed Back
	Week-10	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module OPERATIVE DENTISTRY	
Activity	**Week**	**Interactive Lectures (Groups A,B,C,D)**	**Clinical Rotation in OPD/SGD/Skill Lab (Groups A,B,C,D)**
Academic Session – BDS Third Professional	Week- 1	Definition & Etiology of Dental caries. **LO (94-95)**	Orientation to the Operative OPD Identify restorative instruments Demonstrate about positioning the patients and Dentist in OPD. **LO (98-101)**
	Week- 2	Pathogenesis of Dental caries Prevention of Dental caries **LO (96-97)**	Understanding of Radiographs Application of matrix band retainer, band & wedge on phantom teeth in skill lab **LO (103,113-114)**
	Week- 3	Examination and Diagnosis of Dental Caries **LO (102)**	Revision of the principles of cavity design of Class I, V & its restoration on patient tooth in OPD **LO (104 -108)**
	Week- 4	Examination and Diagnosis of Erosion, Attrition, Abrasion **LO (109)**	Preparation & restoration of Class II slot, III, cavities on patients teeth in OPD **LO (111-112)**
	Week- 5	Examination and Diagnosis of cracked tooth **LO (110)**	Application of Rubber dam on phantom teeth in skill lab **LO (117-119)**
	Week- 6	Selection of restorative materials (Dental amalgam, tooth colored materials) **LO (115-116)**	Demonstration of Endodontic Instruments **LO (122)**
	Week- 7	Causes of restorative failure & Postoperative problems **LO (120)**	Demonstration for root canal procedure on extracted tooth **LO (124)**
	Week- 8	Understand the methods of isolation, control of the operating field **LO (121)**	Poster /Presentation/Quiz competition **Clinical OPD test (OSCE)**
	Week- 9	Discuss steps of root canal procedure **LO (123)**	
	Week- 10	Discuss esthetic considerations in diagnosis and treatment planning **LO (125)**	
	Week- 11	Use of lasers in dentistry **LO (126)**	
	Week- 12	Revision	
	Week- 13 and 14	***Theory & Practical/viva Exam***	

Commencement of Module		Weekly Schedule of Module GENERAL MEDICINE
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Acute coronary syndrome and angina (Investigations, Management and Complications) **LO** (**127**) Pneumonia (Clinical features, Assessment of severity and its Management). **LO (137)**
	Week- 2	Asthma (Pathogenesis, Clinical features, Evaluation and Treatment plan) **LO (133)**
	Week- 3	Hypertension (Risks, Investigations & Management). **LO (130)** Tuberculosis (Etiology, Pathogenesis, Clinical features, Diagnostic tests, and Treatment). **LO (140)**
	Week- 4	Normal ECG, arrhythmias & MI. **LO (129)** COPD (Pathogenesis, Clinical features, Evaluation and Treatment plan) **LO (134, 136)**
	Week- 5	Acute coronary syndrome (Investigations, Management and Complications). **LO (127)**
	Week- 6	Valvular Heart Diseases (Clinical features & its Management). **LO (131)** Pleural effusion (Pathogenesis, Etiology, Clinical picture and Management). **LO (139)**
	Week- 7	Rheumatic fever and RHD (Etiology, Risk factors, Clinical features, Treatment and Complications). **LO (132)** Pneumothorax (Pathogenesis, Etiology, Clinical picture and Management). **LO (139)**
	Week- 8	Restrictive lung diseases (Types, Clinical features and Management). **LO (135)**
	Week- 9	Rheumatoid arthritis (Clinical features, Investigations and Treatment). **LO (141,143)** Infective endocarditis (Etiology, Clinical features, Investigations and Treament). **LO (132)**
	Week- 10	Osteoarthritis (Etiology, Clinical features, Investigations and Management). **LO (148)** Systemic Lupus Erythematosus (Clinical features, Investigations, Diagnostic criteria and Management). **LO (144)**
	Week-11	Seronegative arthritis (Types, Clinical features, Investigations and Management). **LO (142)** Osteoporosis (Clinical features, Investigations, Prevention and Management). **LO (146)**
	Week-12	Systemic sclerosis and CREST (Clinical features, Investigations and Treatment). **LO (145)** Heart failure (Pathophysiology, Clinical manifestations and Management). **LO (128)**
	Week-13 and 14	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module GENERAL SURGERY
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Metabolic response to trauma. **LO (152)**
	Week- 2	Shock, Types and their management. **LO (153)** Hemorrhage, types and management, Blood transfusion, indications, risks, complications, Blood Products. How to write transfusion notes. **LO (154)**
	Week- 3	Sterilization, asepsis, techniques of sterilization**.** OT Protocols & prevention of infection in Operation Theater. **LO (155)**
	Week- 4	Wounds types, factors affecting wound healing. Acute wounds, chronic wounds, scar and contractures. **LO (156)** Surgical infection, classification, SIRS & MODS, Role of Antibiotics. **LO (157)**
	Week- 5	Chronic infections & leprosy & tuberculosis. **LO (158)**
	Week- 6	Abscess, sinus, fistula, subcutaneous swellings, ulcer types, cellulitis etc. **LO (159)** Acid base, fluid electrolyte balance. **LO (160-161)**
	Week- 7	Surgical nutrition, calculation and products use. **LO (162)**
	Week- 8	General Anesthesia, Drugs and gases used and their complications. Spinal anesthesia, Local anesthesia, uses & complications. **LO (164)**
	Week- 9	Pain control methods, chronic pain, caused by malignancy. **LO (163)**
	Week- 10	Preop care with high risk cases, post op care & management. **LO (163)** Benign & malignant lesions of skin and skin vascular lesions. Abscess, sinus, fistula, subcutaneous swellings, ulcer types, cellulitis etc. **LO (165)**
	Week-11	Salivary glands lesions. **LO (166)**
	Week-12	Breast Benign diseases. **LO (167)** Breast cancer & diagnostic methods used to detect malignancy. **LO (167)**
	Week-13 and 14	**THEORY AND VIVA EXAMINATION**

MODULE			
S. No	**Learning Objectives**	**Teaching strategy**	**Assessment tool**
PERIODONTOLOGY			
28.	Define periodontal disease.	CR	BCQs/SEQs
29.	Describe and understand the classification system of periodontal diseases.	CR	BCQs/SEQs
30.	Discuss the need for classification.	CR	BCQs/SEQs
31.	Enlist and discuss Dental plaque induced gingival diseases	CR	BCQs/SEQs /CP
32.	Define desquamative gingivitis.	IL/CR	BCQs/SEQs/ OSCE/CP
33.	Discuss the systematic approach for diagnosis of desquamative gingivitis.	SGD	BCQs/SEQs/CP
34.	Enlist the diseases that can be clinically presented as desquamative gingivitis.	SGD/CR	BCQs/SEQs/CP
35.	Define periodontal pockets	IL/SGD	BCQs/SEQs /OSCE/ CP
36.	Enlist the classification of periodontal pockets.	IL	BCQs/SEQs /OSCE/ CP
37.	Describe the procedure of determining the pocket depth.	IL/CR	BCQs/SEQs/CP
38.	Describe and differentiate true and false pockets.	IL/CR	BCQs/SEQs/CP
39.	Enumerate the clinical features of periodontal pockets.	IL/CR	BCQs/SEQs/OSCE/ CP
40.	Explain the pathogenesis of periodontal diseases.	IL	BCQs/SEQs/OSCE/ CP
41.	Discuss the histopathology of periodontal pockets with emphasis on changes in the soft tissue and hard tissue wall.	IL/CR	BCQs/SEQs/CP
42.	Discuss healing of periodontal pockets.	IL	BCQs/SEQs/CP
43.	Discuss the contents of periodontal pockets.	CR	BCQs/SEQs/OSCE/ CP
44.	Define and distinguish between supra bony and infra bony pockets.	SGD	BCQs/SEQs/OSCE/ CP
45.	Describe the pattern of bone Loss in periodontal disease.	SGD/CR	BCQs/SEQs/OSCE/ CP
46.	Define and discuss periodontal cyst.	CR	BCQs/SEQs/OSCE/ CP

47.	Discuss benign and malignant tumours of gingiva.	CR	BCQs/SEQs/OSCE/ CP
48.	Discuss etiology, clinical features and management of Fibrous epulis, Fibroma, Papilloma	SGD/CR	BCQs/SEQs/OSCE/ CP
49.	Discuss etiology, clinical features and management of Central giant cell granuloma	SGD/CR	BCQs/SEQs/OSCE/ CP
50.	Discuss etiology, clinical features and management of Peripheral giant cell granuloma	SGD/CR	BCQs/SEQs/OSCE/ CP
51.	Discuss etiology, clinical features and management of Leukoplakia	SGD/CR	BCQs/SEQs/OSCE/ CP
52.	Discuss etiology, clinical features and management of Gingival cyst	SGD/CR	BCQs/SEQs/OSCE/ CP
53.	Discuss etiology, clinical features and management of Squamous cell carcinoma	SGD/CR	BCQs/SEQs/OSCE/ CP
54.	Discuss etiology, clinical features and management of Malignant melanoma	SGD/CR	BCQs/SEQs/OSCE/ CP
55.	Discuss false enlargements of gingival tissues.	IL	BCQs/SEQs/OSCE/ CP
56.	Define abscess.	IL/CR	BCQs/SEQs/OSCE/ CP
57.	Discuss classification of abscess.	SGD	BCQs/SEQs/CP
58.	Define periodontal abscess.	IL/SGD/CR	BCQs/SEQs/OSCE/CP
59.	Define pericoronal abscess.	SGD	BCQs/SEQs/OSCE/ CP
60.	Discuss the difference between Acute and chronic periodontal abscess.	SGD/CR	BCQs/SEQs/CP
61.	Enlist the clinical features of acute and chronic periodontal abscess.	IL/CR	BCQs/SEQs/CP
62.	Describe radiographical signs of periodontal abscess.	IL/CR	BCQs/SEQs/OSCE/ CP
63.	Discuss treatment options for periodontal abscess.	CR	BCQs/SEQs/OSCE/ CP
64.	Describe the indications for antibiotic therapy in patients with acute periodontal abscess.	CR	BCQs/SEQs/OSCE/ CP
	ORAL MEDICINE		
65.	List and differentiate normal oral mucosal variants from pathological lesions.	IL/ SGD	SEQs
66.	Classify Red and White lesions	IL/SGD	SEQs/OSCE
67.	Enumerate the causes of red and white lesions of oral mucosa.	IL/ SGD	BCQs/SEQs/ OSCE
68.	Define and classify the types of leukoplakia.	IL	BCQs/SEQs/OSCE
69.	Describe management for leukoplakia.	IL/ CBL	SEQs

70.	Discuss clinical features and management of Erythroplakia.	IL/CBL	BCQs/SEQs
71.	Discuss the clinical features of Oral Submucous Fibrosis	IL	SEQs
72.	Classify Oral ulcers	IL/ CR	SEQs/Viva
73.	List etiological factors for recurrent Aphthous ulceration.	IL	SEQs
74.	Discuss the types and clinical features of recurrent Aphthous ulceration	IL/ CR	SEQs/ Viva
75.	Describe and interpret investigations involved in diagnosis of recurrent Aphthous ulceration	IL/ CR	SEQs/ Viva
76.	Describe the management of recurrent Aphthous ulceration.	IL/ CR	SEQs/OSCE
77.	Define vesiculo-bullous diseases.	IL	SEQs
78.	List differential diagnosis of various vesiculo-bullous lesions of oral cavity.	IL/ SGD	SEQs/ OSCE
79.	Discuss the clinical features and management of Behçet's syndrome	IL	CQ
80.	Differentiate between Mucous membrane pemphigus and Mucous membrane pemphigoid.	IL/CBL	SEQs/ Viva
81.	Discuss the cause and clinical features of Mucous membrane pemphigoid	IL/CBL	SEQs/OSCE/ Viva
82.	Discuss the cause and clinical features of pemphigus vulgaris.	IL/CBL	SEQs/OSCE/ Viva
83.	Discuss investigations necessary to diagnose pemphigus vulgaris and Mucous membrane pemphigoid.	IL/CBL	SEQs
84.	Describe the histological difference between Mucous membrane pemphigus and Mucous membrane pemphigoid.	IL/ SGD	CQ
85.	Discuss various treatment options involved in pemphigus vulgaris and Mucous membrane pemphigoid.	IL/ SGD/ CBL	SEQs/OSCE
86.	Describe the causes, clinical features and management of erythema multiforme.	IL/ SGD/ CBL	SEQs/OSCE
87.	Define premalignant lesion.	IL	SEQs/ Viva
88.	Define premalignant condition.	IL	SEQs/ Viva
89.	Differentiate between premalignant lesion and premalignant condition	IL/CBL	BCQs/ SEQs
90.	List and discuss various premalignant lesions of oral cavity.	IL/CBL	BCQs/ SEQs
91.	List and discuss various premalignant conditions of oral cavity	IL/SGD	BCQs/ SEQs
92.	Discuss the principles for management of dysplastic lesions	IL/ SGD	Viva
93.	Discuss various risk factors for malignant changes in oral lesions.	IL/ SGD	SEQs/ Viva
94.	Discuss clinical features and management of Erythroplakia.	IL	SEQs/ OSCE
95.	Discuss clinical features and management of Leukoplakia.	IL	SEQs/ OSCE
96.	Discuss clinical features and management of chronic hyperplastic	IL	SEQs

	candidiasis.		
97.	Discuss the causes, clinical features and management of Oral sub mucous fibrosis.	IL/ SGD/CBL	SEQs/OSCE/ Viva
98.	Describe the role of general dental practitioner in management of precancerous and cancerous lesions.	IL	Viva
99.	Discuss prevention and medical management of pre-cancerous lesions and conditions	IL	SEQs
100.	List the causes of Glossitis.	IL	SEQs
101.	Discuss the clinical features and management of Erythema migrans.	IL	BCQs/ SEQs
102.	Discuss the clinical features and management of median rhomboid glossitis.	IL	BCQs/SEQs
103.	Describe the causes of macroglossia.	IL	BCQs/ CQ
104.	Discuss the cause, investigations and treatment options involved in Amyloidosis	IL	CQ
105.	List the causes of pain in oral and maxillofacial region.	IL/ SGD/ CBL	Viva
106.	Discuss features associated with different causes of oro-facial pain	IL/ SGD/ CBL	SEQs
107.	Discuss clinical features, diagnosis and management of trigeminal neuralgia.	IL/ SGD/ CBL	BCQs/ SEQs/ Viva
108.	Discuss the clinical features and management of atypical facial pain.	IL	BCQs/ CQ
109.	Discuss the clinical features and management of burning mouth syndrome.	IL	BCQs/ CQ
110.	List the causes of facial palsy	IL/ SGD/ CR	BCQs/SEQs/ OSCE
111.	Describe the management of Bell's palsy.	IL/ SGD/ CR	BCQs/SEQs/OSCE
112.	Discuss the adverse effects of radiotherapy in Oral & Maxillofacial region.	IL/ SGD	OSCE/ Viva
113.	Discuss the role of general dentist in management of patients undergoing radiotherapy.	IL/ SGD	BCQs/ OSCE/ Viva
PROSTHODONTICS			
114.	Define support, stability, retention, abutments, retainers, undercut, guide plane, angle of cervical convergence, precision attachment, connector, functional impression, occlusal registration,	IL	CQ
115.	Interpret consequences of tooth loss	IL	CQ
116.	Rationalize the need of prosthesis	IL	CQ
117.	Identify the types of prosthodontics treatment modalities.	CBL	OSCE/VIVA
118.	Identify partial dentulism according to Kennedy's Classification	CBL	OSCE/VIVA
119.	Apply Applegate's rules on different dentate states	CBL	OSCE/VIVA
120.	Enumerate the need for classifications systems	CBL	OSCE/VIVA

121.	Choose appropriate treatment modality according to number of teeth missing with justification.	CBL	OSCE/VIVA
122.	Justify the prescription of removable partial denture in a patient.	CBL	OSCE/VIVA
123.	Classify removable partial dentures according to support.	CBL	OSCE/VIVA
124.	Enumerate the types of removable partial dentures on the basis of material, uses and clinical requirements.	CBL	OSCE/VIVA
125.	Apply material science for fabrication of cast removable partial dentures.	CBL	OSCE/VIVA
126.	List the uses of interim removable partial dentures.	IL	OSCE/VIVA
127.	Justify the prescription of interim removable partial dentures.	IL/CR	OSCE/VIVA
128.	Design interim removable partial dentures.	CR	OSCE/VIVA
129.	Outline clinical and laboratory procedures for interim removable partial dentures.	IL/CR	OSCE/VIVA
130.	Design interim removable prosthesis	CR	SC
131.	Provide block out and relief according to the situation	CR	SC
132.	Record occlusal relationships in partially dentate individuals.	CR	SC
133.	Select appropriate occlusal relationships method in partially dentate individuals.	CR	SC
134.	Perform the process of acrylic processing, finishing and polishing the dentures.	CR	PW
135.	Adjust acrylic removable partial dentures in patient's mouth.	CR	PW
136.	Identify common pressure areas encountered.	IL/CR	OSCE/PW
137.	Apply disinfection protocols for impressions and removable prosthesis.	IL/CR	OSCE/VIVA
138.	Sort clinical and laboratory procedures for interim removable partial dentures in sequence.	CR	OSCE
139.	Recognize the need of omitting or joining one or more fabrication steps of removable partial denture.	CR	OSCE
140.	Fabricate removable partial dentures for partially dentate patients.	CR	PW
141.	Outline treatment planning protocol of a prosthodontics patient.	IL	OSCE/VIVA
142.	Enumerate favorable history and examination in sequence	IL	OSCE/VIVA
143.	Record a comprehensive history of a prosthodontics patient.	CR	OSCE/VIVA
144.	Perform extra oral and intraoral examination on a patient.	CR	OSCE/VIVA
145.	Identify functional and non-functional cusps.	IL/CR	OSCE
146.	Identify occlusal scheme clinically.	IL/CR	OSCE
147.	Perform basic dental charting and periodontal examination of teeth	CR	OSCE
148.	Prescribe basic investigations like periapical and OPG radiographs.	IL/CR	OSCE/VIVA

149.	Identify the need of impression tray modification.	CR	OSCE/VIVA
150.	Make diagnostic impressions with alginate impression material.	CR	PW
151.	Identify problems in alginate impressions with reasons.	CR	OSCE/VIVA
152.	Manage a patient with an exaggerated gag reflex under supervision	CR	PW
153.	Rationalize the need of diagnostic maxillomandibular relation in different partially dentate states.	CR/CBL	PW/VIVA
154.	Analyze diagnostic casts.	CR/IL	OSCE
155.	Measure pontic space.	CR	OSCE/PW
156.	Delineate the steps of performing definitive oral examination.	IL	OSCE/VIVA
157.	Interpret diagnostic data.	IL/CR	OSCE
158.	Develop the basic phases of treatment plan.	IL/CR	OSCE
159.	Formulate a differential and a definitive diagnosis.	CR/CBL	OSCE
160.	Refer a patient to appropriate specialist.	CR	OSCE
161.	Write a referral.	CR	OSCE
162.	Counsel the patient regarding consequences of tooth removal without replacement.	CR	OSCE
163.	Identify patient needs.	CR	PW
164.	Formulate treatment options in relation to patient needs.	CR/CBL	OSCE/PW
165.	Communicate the diagnosis and treatment options to the patient in an appreciable manner.	CR	OSCE
166.	Write a patient record note.	CR	OSCE
167.	Select appropriate material used for denture framework.	IL	OSCE
168.	Define connector, major connector and minor connector.	IL	CQ
169.	Enumerate the functions and requirements of major connectors.	IL	CQ
170.	Explain the basic types of mandibular and maxillary major connectors.	IL/CBL	CQ
171.	Outline the guidelines related to location of connectors in the oral cavity.	IL	CBL
172.	Select mandibular major connectors according to space requirements in a given clinical scenario.	IL/CBL	CBL
173.	Describe the basic design characteristics of major connectors.	IL	CQ
174.	Define minor connector.	IL	CQ
175.	Enumerate the functions of minor connectors.	IL	CQ
176.	Distinguish between rest and rest seat.	IL	CQ
177.	Delineate the functions of rests.	IL	CQ

178.	Differentiate between the different types of rests and rest seats in relation to their form and location.	IL/CBL	CQ
179.	Outline the guidelines for support of rests.	IL	CQ
180.	Define direct retainers.	IL	CQ
181.	Classify types of direct retainers.	IL	CQ
182.	Define clasp assembly.	IL	CQ
183.	Distinguish between parts of clasp assembly in regard to retention, support, stability and reciprocation.	IL	CQ
184.	Relate height of contour, supra bulge and infrabulge areas for retentive clasps.	IL	CQ
185.	Associate retentive factors of clasps with tooth factors	IL	CQ
186.	Outline the basic principles governing clasp design.	IL	CQ
187.	Define denture bases	IL	CQ
188.	Enumerate the ideal requirements of denture bases.	IL	CQ
189.	Relate denture base requirements to support mechanism of removable partial denture.	IL/CBL	CBL
190.	Differentiate between metal and acrylic resin denture bases.	IL	CBL
191.	Outline the functions of denture bases.	IL	CQ
192.	Anticipate changes in denture base design for tooth tissue supported prosthesis.	IL	CBL
193.	Enlist movements of tooth tissue supported dentures	IL	CQ
194.	Correlate concepts of fulcrum, effort and resistance in lever principle.	IL	CQ
195.	Relate the movement of the removable partial denture to lever principle.	IL	CQ
196.	Differentiate between tooth supported and tooth tissue supported removable partial dentures.	IL/CBL	CBL
197.	Select an impression material in different partially dentate conditions.	CR	OSCE/VIVA/PW
198.	Select an impression technique in different partially dentate states.	IL/CR	OSCE/VIVA/PW
199.	Pour a cast.	CR	PW
200.	Identify inaccurate or weak cast.	CR	OSCE/VIVA
201.	Rationalize the need for making individual trays.	IL/CR	OSCE/VIVA
202.	Enumerate the steps for making individual trays.	IL/CR	OSCE/VIVA
203.	Distinguish between anatomic and functional form of residual ridge.	IL	OSCE/VIVA
204.	Make an impression using composition and alginate for distal extension bases.	CR	PW

205.	Define overjet, overbite, buccal overlap, centric relation, centric occlusion, and maximum intercuspation, curve of Spee and curve of Monsoon.	IL	CQ
206.	Enumerate desirable occlusal contact relationships for removable partial dentures.	IL	CQ
207.	Select a method for establishing occlusal relationships according to different partially dentate conditions.	CBL/CR	CBL/PW
208.	Demonstrate the making of proper record blocks and occlusal rims on cast framework.	CR	OSCE/PW
209.	Perform acrylic processing, finishing and polishing the dentures.	CR	PW
210.	Explain the methods for adjusting the bearing surfaces of denture bases.	IL	VIVA
211.	Adjust acrylic removable partial dentures in patient's mouth.	CR	PW
212.	Enlist common pressure areas encountered.	IL	VIVA
213.	Outline sequence protocol for fitting of framework in the oral cavity.	IL/CR	VIVA
214.	Enumerate methods for adjusting occlusion.	IL/CR	VIVA
215.	Instruct the patient for difficulties that may be encountered during denture service.	CR	OSCE
216.	Rationalize the follow up appointments for partial denture patients.	IL/CR	OSCE/VIVA
	GENERAL MEDICINE		
217.	Discuss the pathogenesis, clinical manifestations, investigations and management of gastroesophageal reflux disease	IL	BCQ/SEQ/OSCE
218.	Discuss the approach to a patient with peptic ulcer disease its pathogenesis, investigation and their management.	IL	BCQ/SEQ/OSCE
219.	Prescribe the management of Helicobacter pylori gastritis and other gastritis	IL	BCQ/SEQ/OSCE
220.	Understands the different causes of upper GI bleeding; can prescribe the emergency management of hematemesis.	IL	BCQ/SEQ/OSCE
221.	Discuss the pathogenesis, clinical manifestations, investigations and management of inflammatory bowel disease.	IL/ SGD	BCQ/SEQ/OSCE
222.	Differentiate between acute and chronic pancreatitis in symptoms and management.	IL	BCQ/SEQ/OSCE
223.	Describe the signs and symptoms of cirrhosis of the liver and its complications as portal hypertension	IL	BCQ/SEQ/OSCE
224.	Difference between acute and chronic hepatitis.	IL/ SGD	BCQ/SEQ/OSCE
225.	Differentiate inflammatory arthritis from osteoarthritis and management.	IL/ SGD	BCQ/SEQ/OSCE

226.	Diagnose the clinical features and extra articular manifestations of rheumatoid arthritis.	IL/ SGD	BCQ/SEQ/OSCE
227.	Describe the presentations of seronegative arthritis and ankylosing spondylitis, reactive and psoriatic arthritis.	IL	BCQ/SEQ/OSCE
228.	Discuss the clinical features, diagnostic criteria of Systemic Lupus Erythematosus and its management.	IL	BCQ/SEQ/OSCE
229.	Describe the rationale for prescribing disease modifying drugs and approach to modern therapy in rheumatoid arthritis.	IL	BCQ/SEQ/OSCE
230.	Discuss the diagnosis of systemic sclerosis and CREST their similarities and differences.	IL	BCQ/SEQ/OSCE
231.	Discuss the clinical features and management of Sjogren's syndrome.	IL/ SGD	BCQ/SEQ/OSCE
232.	Identify the risk factors for osteoporosis and how to prevent and manage it.	IL	BCQ/SEQ/OSCE
233.	Recognize the clinical features of eczema and psoriasis.	IL	BCQ/SEQ/OSCE
234.	Recognize fungal and viral infections of skin and its management.	IL	BCQ/SEQ/OSCE
235.	Understands and recognizes the skin manifestation of systemic diseases	IL	BCQ/SEQ/OSCE
236.	Recognize erythema nodosum and the conditions with which it is associated.	IL	BCQ/SEQ/OSCE
237.	Describe and investigate different types of bacterial and viral infections.	IL	BCQ/SEQ/OSCE
238.	Can diagnose viral infections with emphasis on: herpes simplex, herpes zoster, influenza, bird flu, dengue, hemorrhagic fever and currently prevalent viruses.	IL	BCQ/SEQ/OSCE
239.	Discuss various types of viral infections and how to manage them.	IL	BCQ/SEQ/OSCE
240.	Understands the human immunodeficiency virus causes disease in humans.	IL	BCQ/SEQ/OSCE
241.	Understands the clinical features of different types of malaria and is able to treat and prevent it.	IL/ SGD	BCQ/SEQ/OSCE
242.	Recognize different Helminthic infections and can treat the infestations.	IL	BCQ/SEQ/OSCE
	GENERAL SURGERY		
243.	Manages and describes Primary & Secondary survey and the management	IL/CR/PW	BCQs/SEQs/OSCE
244.	Describe Triage and blast injuries	IL/CR/PW	BCQs/SEQs/OSCE
245.	Understands Role of ICU in the management of trauma	IL/CR	BCQs/SEQs
246.	Describes Types and management of burns and can write principles of Fluid electrolytes management	IL/CR	OSCE
247.	Describe types of fractures & management of extremities	IL/CR	BCQs/SEQs

248.	Describe fractures of pelvic bone & spine	IL	BCQs
249.	Describe the management of Head injury and cervical spine	IL/SGD	BCQs/SEQs/OSCE
250.	Describe the maxillofacial fracture and complications& immediate management	IL/CR	BCQs/SEQs/OSCE
251.	Describe the traumatic injuries of neck, trachea and oropharynx.	IL	BCQs
252.	Describe the torso injuries and their management	IL/CR	BCQs/SEQs/OSCE
253.	Describe the Abdominal injuries	IL/SGD/CR	BCQs/SEQs/OSCE
254.	Describe the Pelivc injuries and associated perineal injuries	IL/SGD/CR	BCQs/SEQs/OSCE
255.	Describe skin grafts, types flaps and complications	IL	BCQs
256.	Describe the congenital deformities of face, lips & palate	IL	BCQs/SEQs
257.	Recognize and describe infections and tumours of bones especially of Head and Neck area	IL/CR/PW	BCQs/SEQs/OSCE
258.	Describe the management of diabetic foot and other acute and chronic infections of bone.	IL/CR/PW	BCQs/SEQs/OSCE
259.	Describe metabolic diseases of bone.	IL	BCQs/SEQs
260.	Describe the benign and malignant diseases of thyroid	IL/CR/PW	BCQs/SEQs/OSCE
261.	Demonstrate the various other neck lesions	IL	BCQs

Commencement of Module		Weekly Schedule of Module PERIODONTOLOGY
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Classification Of Periodontal Diseases **LO (28-31)**
	Week- 2	Desquamative Gingivitis **LO (32-34)**
	Week- 3	Periodontal Pocket **LO (35-46)**
	Week- 4	Tumor & Tumor Like Lesions **LO (47-55)**
	Week- 5	Periodontal Abscess & Treatment **LO (56-64)**
	Week- 6	Revision Of Module 8 Topics
	Week- 7	Revision Of Module 8 Topics
	Week- 8	Poster Competition
	Week- 9	OSCE Slides Revision
	Week- 10	Class Test
	Week-11	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module ORAL MEDICINE
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	White and red lesion **LO (65-67)**
	Week- 2	White and red lesion **LO (68-71)**
	Week- 3	Vesiculo-bullous lesion **LO (77- 79)**
	Week- 4	Vesiculo-bullous lesion **LO (80-86)**
	Week- 5	Premalignant lesion and conditions **LO (87-99)**
	Week- 6	Oral ulcers **LO (72-76)**
	Week- 7	Tongue disorder **LO (100-104)**
	Week- 8	Effect of radiotherapy on oral mucosa **LO (112-113)**
	Week- 9	Facial palsy **LO (110-111)**
	Week- 10	Orofacial pain **LO (105-109)**
	Week-11	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module PROSTHODONTICS
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	The partial Denture Equation **LO (114-116)**
	Week- 2	Dental Prostheses and Classification systems **LO (117-125)**
	Week- 3	Interim Removable Partial Dentures **LO (126-140)**
	Week- 4	Treatment Planning **LO (141-167)**
	Week- 5	Major and minor connectors **LO (168-175)**
	Week- 6	Rests and Rests seats **LO (176-179)**
	Week- 7	Direct Retainers **LO (180-186)**
	Week- 8	Denture Bases and Impression Techniques **LO (187-192)**
	Week- 9	Tooth tissue supported Dentures **LO (193-196)**
	Week- 10	Maxillomandibular Relations and Occlusion **LO (197-208)**
	Week- 11	Delivery of Dentures **LO (209-216)**
	Week- 12	CBL-RPD
	Week-13 and 14	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module GENERAL MEDICINE
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Acute viral hepatitis (Etiology, Clinical features and Treatment).**LO (224)** Diabetes (Pathophysiology, Classification and Clinical features). **LO (232)**
	Week- 2	Chronic viral hepatitis (Etiology, Clinical features and Treatment). **LO (224)** Diabetes (Treatment and Lifestyle modifications). **LO (232)**
	Week- 3	Cirrhosis of the liver (Signs and symptoms and its complications as portal hypertension). **LO (223)** Diabetes (Acute complications/Emergencies). **LO (233)**
	Week- 4	Gastroesophageal reflux disease (Pathogenesis, Clinical manifestations, Investigations and Management). **LO (217)** Cirrhosis of the liver (Causes and Complications). **LO (223)**
	Week- 5	Diabetes (Long term complications). **LO (236)** Upper GI bleeding (Investigations and Emergency management). **LO (220)**
	Week- 6	Oral hypoglycemics drugs-**LO (232)**
	Week- 7	Peptic ulcer disease (Pathogenesis, Investigation and their Management). **LO (218)** Wilson disease, primary biliary cirrhosis hemochromatosis and alpha one antitrypsin deficiency (Pathogenesis, Investigations and Management). **LO (219)**
	Week- 8	Diarrhea (Symptoms and Management). **LO (222)** Urinary tract infection (Etiology, Clinical features and Treatment). **LO (228)**
	Week- 9	Acute renal failure (Etiology, Pathogenesis, Clinical features, Diagnostic tests and Treatment). **LO (226, 230)**
	Week- 10	Inflammatory bowel disease (Pathogenesis, Clinical manifestations, Investigations and Management).**LO (221)** Chronic renal failure (Etiology, Pathogenesis, Clinical features, Diagnostic tests and Treatment) **LO (227)**
	Week-11	Irritable bowel syndrome (Pathogenesis, Clinical manifestations, Investigations and Management). **LO (221)** Nephritic syndrome (Etiology, Pathogenesis, Clinical features, Diagnostic tests and Treatment).**LO (225, 229)**
	Week-12	Malabsorption syndrome (Types, Clinical features, Investigations and Treatment). **LO (222)** Nephrotic syndrome (Etiology, Pathogenesis, Clinical features, Diagnostic tests and Treatment).**LO (231)**
	Week-13 and 14	**THEORY AND VIVA EXAMINATION**

Commencement of 8th Module		Weekly Schedule of Module VIII GENERAL SURGERY
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Trauma, Primary Survey, Secondary survey and management. **LO (243)**
	Week- 2	Principles of Triage and poly trauma and disaster management. **LO (244)** Ventilator working, use, ICU care, monitoring criteria. **LO (245)**
	Week- 3	Burns types and management. **LO (246)**
	Week- 4	Fractures of Limbs & Joint injury. **LO (247)** Fractures of Spine and pelvis. **LO (248)**
	Week- 5	Head & cervical spine injury. **LO (249)**
	Week- 6	Maxillo facial injury. **LO (250)** Trauma of oral cavity, larynx, pharynx & neck. **LO (251)**
	Week- 7	Chest & Mediastinal trauma & esophagus injury. **LO (252)**
	Week- 8	Abdominal injury. **LO (253)** Pelvic organ injury with perineal injuries. **LO (254)**
	Week- 9	Skin grafts, types and complications. **LO (255)**
	Week- 10	Congenital problems of face lips and palate. **LO (256)** Infections and tumours of bone. **LO (257-258)**
	Week-11	Metabolic diseases of bone diseases. **LO (259)**
	Week-12	Thyroid diseases. **LO (260)** Extra Thyroid neck lesions.**LO (261)**
	Week-13 and 14	**THEORY AND VIVA EXAMINATION**

MODULE

At the end of the module, students should be able to:

S.No	Objectives	Teaching strategy	Assessment tool
	PERIODONTOLOGY		
43.	Define furcation defect.	IL/SGD/CR	BCQs/SEQs/ OSCE
44.	Discuss the diagnosis and indices of furcation defects.	IL/SGD/CR	BCQs/SEQs /OSCE
45.	Describe various important factors involved in treatment and prognosis of furcation involvement.	IL/CR	BCQs/SEQs/ OSCE
46.	Discuss the treatment of furcation defect	IL/SGD/CR	BCQs/SEQs /OSCE
47.	Describe various surgical procedures used for treatment of teeth with furcation involvement.	IL/CR	BCQs/SEQs/ OSCE
48.	Explain the concept of GTR.	IL/SGD/CR	BCQs/SEQs /OSCE
49.	Describe the surgical Procedures used for GTR along with clot stabilization, wound protection and space creation and types of materials used.	IL/CR	BCQs/SEQs/ OSCE
50.	Understand the importance of Medical, Dental and Social history in periodontal diseases.	IL/SGD/CR	BCQs/SEQs
51.	Understand the importance of complete examination of oral cavity.	IL/CR	BCQs/SEQs
52.	Discuss signs and symptoms for diagnosis of gingivitis and periodontitis.	IL/SGD/CR	BCQs/SEQs/ OSCE
53.	Discuss various techniques for plaque recognition.	IL/CR	BCQs/SEQs
54.	Formulate treatment plan for patients with periodontal diseases, including counselling, motivation and oral hygiene instructions.	IL/SGD/CR	BCQs/SEQs
55.	Discuss role and importance of topical and systemic chemotherapeutic agents in periodontology.	IL/SGD/CR	BCQs/SEQs
56.	Define trauma from occlusion	IL/SGD/CR	BCQs/SEQs/ OSCE
57.	Differentiate between primary & secondary trauma from occlusion	IL/CR	BCQs/SEQs/ OSCE
58.	Discuss Clinical & Radiographic features of Trauma from occlusion	IL/CR	BCQs/SEQs /OSCE
59.	Discuss the surgical methods to control dental plaque.	IL/CR	BCQs/SEQs
60.	Describe indications and contraindications for following periodontal surgical procedures.	IL/SGD/CR	BCQs/SEQs
61.	Define Gingival Curettage	IL/CR	BCQs/SEQs/ OSCE
62.	Define Gingivectomy	IL/CR	BCQs/SEQs/ OSCE

63.	Classify Periodontal flap surgeries.	IL/CR	BCQs/SEQs/ OSCE
64.	Describe Grafts used in periodontium.	IL/CR	BCQs/SEQs/ OSCE
65.	Discuss Crown lengthening procedure	IL/CR	BCQs/SEQs/ OSCE
66.	Describe the Indications of Frenectomy	IL/CR	BCQs/SEQs/ OSCE
67.	Describe the various techniques of Vestibuloplasty procedure	IL/CR	BCQs/SEQs
68.	Understand and describe the rationale for suturing in periodontal surgery.	IL/SGD/CR	BCQs/SEQs /OSCE
69.	Describe the types of sutures.	IL/CR	BCQs/SEQs/ OSCE
70.	Discuss various suturing techniques used in periodontal surgery.	IL/SGD/CR	BCQs/SEQs /OSCE
71.	Discuss the effects of following on periodontal health:	IL	BCQs/SEQs
72.	Describe the various Oral/Periodontal Manifestations of Diabetes mellitus	IL	BCQs/SEQs
73.	Describe the various Oral/Periodontal Manifestations of Pregnancy	IL	BCQs/SEQs
74.	Describe the various Oral/Periodontal Manifestations of Leukaemia	IL	BCQs/SEQs
75.	Describe the various Oral/Periodontal Manifestations of Anaemia	IL	BCQs/SEQs
76.	Describe the various Oral/Periodontal Manifestations of Vitamin deficiency	IL	BCQs/SEQs
77.	Describe the various Oral/Periodontal Manifestations of AIDS	IL	BCQs/SEQs
78.	Discuss the effects and management of following on periodontal health	IL	BCQs/SEQs
79.	Discuss the effects of Mal-alignment on periodontal health	IL/CR	BCQs/SEQs
80.	Discuss the effects of Crowding on periodontal health	IL/CR	BCQs/SEQs
81.	Discuss the effects of Anterior open bite on periodontal health	IL/CR	BCQs/SEQs
82.	Discuss the effects of Tongue thrusting on periodontal health	IL/CR	BCQs/SEQs
83.	Discuss the effects of Thumb sucking on periodontal health	IL/CR	BCQs/SEQs
84.	Discuss the effects of Mouth breathing on periodontal health	IL/CR	BCQs/SEQs
85.	Discuss the effects of Orthodontic treatment on periodontal health	IL/CR	BCQs/SEQs
86.	Discuss the effects of Dental restorations on periodontal health	IL/CR	BCQs/SEQs
87.	Discuss the effects of Removable dentures on periodontal health	IL/CR	BCQs/SEQs
ORAL MEDICINE			
88.	Discuss the frequency and causative factors of salivary calculi among major salivary gland	IL	SEQs/ Viva

89.	List clinical features of salivary gland obstruction	IL	SEQs/ OSCE
90.	Outline the management of salivary gland obstruction.	IL/ SGD	SEQs
91.	List various causes of salivary gland infections	IL/ SGD	BCQs/SEQs
92.	Discuss causes, clinical features and management of viral sialadenitis.	IL/ SGD	BCQs/ SEQs
93.	Discuss causes, clinical features and management of bacterial sialadenitis.	IL/ CBL	BCQs/ SEQs
94.	List the causes of xerostomia.	IL/ CBL	BCQs/SEQs/ OSCE
95.	Differentiate between primary and secondary Sjogren's syndrome.	IL/ CBL	SEQs/ Viva
96.	Discuss clinical features of Sjogren's syndrome.	IL/ CBL	SEQs/ Viva
97.	Discuss the investigations and management of Sjogren's syndrome	IL/ CBL	BCQs/ SEQs
98.	Enumerate the causes of pigmented lesions in oral cavity.	IL/ SGD	BCQs
99.	Differentiate racial pigmentation from other pigmented lesions of oral cavity..	IL/ SGD	SEQs/ CQ
100.	Enumerate the clinical features of Peutz-Jehgers syndrome.	IL/ SGD	CQ/ OSCE
101.	Classify salivary gland tumors	IL/ SGD	SEQs
102.	Discuss clinical presentation and investigations for pleomorphic adenoma.	IL/ SGD/CBL	SEQs/ OSCE
103.	Enumerate the causes of sialadenosis.	IL	SEQs/ OSCE
104.	List and discuss various causes of halitosis	IL	SEQs/ OSCE
105.	Describe various modalities used for diagnosing halitosis.	IL	BCQs/ SEQs
106.	Discuss the management of halitosis.	IL	SEQs/Viva
107.	Discuss the diagnosis and management of anaphylactic shock during dental treatment.	IL	SEQs/ OSCE
108.	Discuss various drug interactions among commonly used drugs in dental practice.	IL	CQ
109.	Lists various local and systemic conditions that influences taste perception.	SGD	CQ
110.	Discuss the importance of healthy nutrition in maintaining oral health.	IL/ SGD	BCQs/ CQ
111.	Discuss the management for cardiac patients during dental treatment	IL/ SGD/ CR	SEQs/ OSCE
112.	Discuss the oral effects of drugs used by cardiac patients.	IL/ SGD	BCQs/ CQ
113.	Identify the role of antibiotic prophylaxis for prevention of infective endocarditis in dental patients.	IL/ SGD	SEQs/ CQ
114.	Enumerate the causes of hypersensitivity among dental patients.	IL/ SGD/ CR	SEQs/ OSCE
115.	Discuss the management of asthmatic patient during dental treatment.	IL/ SGD/ CR	SEQs/ OSCE

116.	Discuss the management of patient with COPD during dental treatment.	IL/ SGD/ CR	SEQs/ OSCE
117.	Identify and discuss the features of tooth/root displacement into the upper or lower respiratory tract.	IL/ SGD/ CR	SEQs/ OSCE
118.	Identify the causes of oro-antral communication	IL	SEQs/ OSCE
119.	Discuss the principles of management of root displaced in maxillary antrum.	IL/ SGD	SEQs/ OSCE
120.	Define orofacial granulomatosis.	IL	SEQs
121.	Discuss various oral manifestations of gastrointestinal tract diseases	IL	SEQs
122.	Identify and discuss oral manifestations of Crohn's disease and their management	IL	SEQs
123.	Discuss the modes of transmission for viral hepatitis.	IL/ CR	SEQs/ OSCE
124.	Discuss the important aspects of various liver diseases relevant to dentistry	IL/ CP	BCQs
125.	Discuss hazards to dental staff and other patients from Hepatitis B/C patient	IL/CR	SEQs/ Viva
126.	Prescribe and interpret various serological studies involved in screening Hepatitis patients.	IL/CR	CQ/ Viva
127.	Discuss the basic precautionary measures for prevention of viral hepatitis.	IL	SEQs/ Viva
128.	Discuss various aspects of renal diseases which can affect treatment in dental patient.	IL	CQ
129.	Identify the role of sterilization in preventing communicable diseases.	IL	SEQs/ CQ
130.	Discuss the protocol of dental treatment in patients undergoing Hemo-dialysis.	IL	SEQs/ CQ
131.	Discuss the effects of pregnancy on oral health.	IL	BCQs/ CQ
132.	Discuss the management considerations during dental treatment of pregnant patient.	IL	BCQs/ CQ
133.	Enumerate the drugs that can be safely prescribed in pregnant patients.	IL	BCQs/ CQ
134.	Identify and prevent possible hazards to fetus from various dental procedures and medications.	IL	BCQs/ CQ
135.	Define Anemia	IL	SEQs/ Viva
136.	Identify and discuss clinical features of anemia	IL/ CBL	SEQs/ Viva
137.	Discuss the important features of anemia in dentistry and their management.	IL/ CBL	SEQs/ Viva
138.	Discuss the dental aspects of sickle cell disease and their management	IL	SEQs/ Viva
139.	Identify the effects of acute leukemia and their management.	IL	SEQs/ Viva
140.	Discuss various bleeding disorders and their causes.	IL/ CBL	BCQs/SEQs/ OSCE

141.	Discuss the causes of various clotting disorders.	IL	BCQs/SEQs/ OSCE
142.	Discuss the types and causes of hemophilia.	IL	BCQs/SEQs
143.	Discuss the principles of dental management of patient with hemophilia	IL/ CBL	BCQs/SEQs
144.	Discuss the effects of anticoagulant therapy on dental treatment	IL	BCQs
145.	Discuss the management of dental patient taking anticoagulant therapy.	IL	BCQs/ SEQs
146.	Discuss the importance of INR in dental extractions and oral surgical procedures	IL/CR	SEQs
147.	Discuss the management of prolonged bleeding during oral surgical procedures	IL/CR	SEQs/ Viva
148.	Discuss oral manifestations and their management in HIV patients.	IL/SGD	SEQs/ Viva
149.	Discuss oral manifestations and their management in patients with syphilis.	IL/SGD	SEQs
ORAL SURGERY			
150.	Recall the principles of Oral & Maxillofacial Surgery	IL	BCQs
151.	Assess patients on the basis of History and Examination.	IL/ CR	OSCE
152.	Diagnose pattern & ways of making tentative diagnosis.	IL/ CR	OSCE
153.	Plan and execute different treatment modalities.	IL/CR	OSCE
154.	Describe different methods of Sterilization and their relevance to OMFS.	IL	BCQs
155.	Identify various Instruments used in Oral Surgery	CR	OSCE
156.	Discuss the Principles of Oral Surgery	IL	BCQs
157.	Discuss types of incisions & flaps	IL	CQ
158.	Identify methods of tissue handling	IL	CQ
159.	Define Hemostasis	IL	CQ
160.	Recall types of hemorrhage along with its management.	IL	CQ
161.	Learn different suturing techniques and their uses	IL/CR	OSCE
162.	Identify and Implement Pre & Post-Operative Care	CR	OSCE
163.	Assess nutritional status of the patient	IL	BCQs/ SEQs
164.	Recall principles of antibiotic administration	IL	BCQs/ SEQs
165.	Discuss the hazards of cross-infection and its prevention	IL	BCQs/SEQs
166.	Enlist types of Local Anesthesia and recall their pharmacology.	IL/ CP	CQ
167.	Identify different indications and contra-indications of using Local anesthesia.	IL/ CP	CQ

168.	Discuss techniques of administration of Local anesthesia.	IL/CR	OSCE
169.	Describe complications of local anesthesia and its management.	IL/CR	OSCE
170.	Describe the principles of Exodontia.	IL	SEQs
171.	Identify the armamentarium used for Exodontia	CR	OSCE
172.	Recall indications and contraindications of removal of teeth.	IL	BCQs/ SEQs
173.	Discuss the procedure for Simple & Complex Exodontia.	IL/CR	SEQs
174.	Describe the complications of extraction along with its management.	IL	SEQs/ OSCE
175.	Enlist post-op instructions	IL/ CR	OSCE
176.	Discuss the prevention and management of Medical Emergencies	IL	CQ
177.	Evaluate Life threatening Emergencies in Dental Office	IL	BCQs/OSCE
178.	Assess patients for prevention and management of various Medical Emergencies	IL	CQ
179.	Discuss the significance of General Anesthesia and Sedation in Dentistry	IL	CQ
180.	Recall the indications of General Anesthesia & Sedation in children, adults and geriatric patients	IL	CQ
181.	Discuss Conscious Sedation & its types	IL	CQ
182.	Describe the significance of IV Sedation, Oral Sedation, Inhalation Sedation in Dentistry	IL	CQ
183.	Define impacted teeth	IL	SEQs
184.	Classify impacted teeth	IL	SEQs/ OSCE
185.	Describe the Indications and contra-indications of wisdom tooth surgery.	IL/CR	CQ
186.	Discuss various surgical techniques.	IL/CR	SEQs
187.	Discuss the complications of surgery and its management.	IL	CQ
188.	Define exodontia	IL/CR	CQ
189.	Enlist the Indications and contra-indications of exodontia	IL/CR	CQ
190.	Enumerate the principles and application of forceps extraction	CR	OSCE
191.	Discuss the steps for surgical removal of erupted/broken down teeth.	CR	OSCE
192.	Enlist the complications of extraction.	IL	SEQs
193.	Discuss the significance of consent taking before initiating dental procedure	CR	OSCE
194.	Identify Oro-antral communication and its causes	IL	BCQs/ SEQs
195.	Enlist ways to manage post-operative bleeding	IL	SEQs/OSCE
GENERAL MEDICINE			

196.	Describe the characteristic features, differential diagnosis and management of cerebrovascular disease.	IL/SGD	BCQs/SEQs/ OSCE
197.	Discuss different causes of headache and how to investigate a patient with headache and its management.	IL/SGD	BCQs/SEQs/ OSCE
198.	Describe the clinical features and management of disabling neurological conditions such as Parkinson's disease, multiple sclerosis and motor neuron disease.	IL/SGD	BCQs/SEQs/ OSCE
199.	Discuss the approach to a patient with meningitis and encephalitis, its investigations and treatment.	IL	BCQs/SEQs/ OSCE
200.	Discuss the clinical manifestations, classification, differential diagnosis and management of epilepsy.	IL/SGD	BCQs/SEQs/ OSCE
201.	Describe the different types and clinical manifestations of diabetes.	IL/SGD	BCQs/SEQs/ OSCE
202.	Learn the management of common diabetic emergencies.	IL/SGD	BCQs/SEQs/ OSCE
203.	Recognize and manage complications of DM.	IL/SGD	BCQs/SEQs/ OSCE
204.	Understands the growing public health problem of obesity and approaches to tackle this.	IL	BCQs/SEQs/ OSCE
205.	Learn how the management of dyslipidemia.	IL	BCQs/SEQs/ OSCE
206.	Understand the common causes of metabolic bone diseases and its management.	IL	BCQs/SEQs/ OSCE
207.	Discuss the common disorders of the thyroid, parathyroid, pituitary and adrenal glands; its clinical manifestations, investigation and their management.	IL/SGD	BCQs/SEQs/ OSCE
208.	Discuss the clinical manifestation and management of patients with crystal arthropathy.	IL	BCQs/SEQs/ OSCE
209.	Describe the different types of hematological disorders.	IL	BCQs/SEQs/ OSCE
210.	Understands the classification and causes of anemia and how to investigate and manage anemia.	IL/SGD	BCQs/SEQs/ OSCE
211.	Differentiate between acute and chronic leukemia.	IL	BCQs/SEQs/ OSCE
212.	Understands the different causes of thrombocytopenia and bleeding disorders and its management.	IL	BCQs/SEQs/ OSCE
	GENERAL SURGERY		
213.	Differentiate the abdominal pain in various quadrants according to underlying viscera	IL/CR/CBL	BCQs/SEQs/ OSCE
214.	Discuss various upper GI symptoms to common diseases	IL	BCQs/SEQs
215.	Describe features of upper intestinal obstruction and management	IL	BCQs/SEQs/ OSCE
216.	Diagnose perforation of Abdominal Viscous and understand D/D and S/S of peritonitis.	IL/SGD/CR	BCQs/SEQs/ OSCE
217.	Describe D/D of bleeding PR	IL	BCQs/SEQs

218.	Describe common lesions of large gut	IL/CR/CBL	BCQs/SEQs/ OSCE
219.	Describe Appendicitis, complications d/d	IL/CR	BCQs/SEQs
220.	Describe gall stone problems, complications Diagnosis and management	IL/CR/CBL	BCQs/SEQs
221.	Discuss Obstructive Jaundice and pancreatic cancer	IL/CR	BCQs/SEQs/ OSCE
222.	Diagnose and D/d of liver masses	IL/CR	BCQs/OSCE
223.	Diagnose the role of spleen and Lymphadenopathy in various diseases	IL	BCQs/SEQs
224.	Manages empyemia thoracis and lung abscess	IL/CR	BCQs/SEQs/ OSCE
225.	Diagnose d/d of haematuria, Urine d/r its features	IL/CR/CBL	BCQs/SEQs/ OSCE
226.	Diagnose & manage Obstructive uropathy	IL	BCQs/SEQs
227.	Diagnose & manage urological calculous disease	IL/SGD	BCQs/SEQs/ OSCE
228.	Differentiate various hernia, S/S and complications	IL/SGD/CR	BCQs/SEQs/ OSCE
229.	D/d of scrotal swellings	IL/SGD	BCQs/SEQs/ OSCE
230.	Identify arterial complications and management	IL/SGD	BCQs/SEQs/ OSCE
231.	Describe the Risk factors of DVT, Varicose veins & venous insufficiency and their management	IL/SGD	BCQs/SEQs

Commencement of Module		Weekly Schedule of Module PERIODONTOLOGY
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Furcation Involvement In Periodontal Disease **LO (43-47)**
	Week- 2	Guided Tissue Regeneration **LO (48-49)**
	Week- 3	Diagnosis Of Cause Related Disease **LO (50-55)**
	Week- 4	Trauma From Occlusion **LO (56-58)**
	Week- 5	Re-evaluation Of Cause Related Disease **LO (59-67)**
	Week- 6	Periodontal Dressing & Sutures **LO (68-70)**
	Week- 7	Periodontal Treatment Of Medically Compromised Patients **LO (71-77)**
	Week- 8	Occlusal Analysis **LO (78-87)**
	Week- 9	Revision Of Previous Module
	Week- 10	Class Test/ Assessment
	Week-11	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module **ORAL MEDICINE**
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Pigmented Lesions I **LO (98-100)**
	Week- 2	Pigmented Lesions II **LO (98-100)**
	Week- 3	Salivary gland disorder **LO (88- 97)**
	Week- 4	Salivary gland tumor **LO (101-106)**
	Week- 5	Oral manifestations of systemic disease and their management (Cardiac) **LO (107-113)**
	Week- 6	Oral manifestations of systemic disease and their management (Respiratory) **LO (114-119)**
	Week- 7	Oral manifestations of systemic disease and their management (Renal), (G.I.T.) **LO (120-130)**
	Week- 8	Oral manifestations of systemic disease and their management (Endocrine) **LO (131-144)**
	Week- 9	Oral manifestations of systemic disease and their management (Hematological) **LO (145-149)**
	Week- 10	CAT
	Week-11	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module ORAL SURGERY
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Basic Principles or Surgery **LO (150-164)**
	Week- 2	Sterilization & Cross infection **LO (154, 165)**
	Week- 3	Flap designs and soft tissue handling **LO (157, 158)**
	Week- 4	General and Local Anesthesia, Sedation & Patient's management **LO (166-169, 179 - 182)**
	Week- 5	Prevention of Medical Emergencies **LO (176- 177)**
	Week- 6	Management of Medical Emergencies **LO (178)**
	Week- 7	Exodontia **LO (170-175)**
	Week- 8	Exodontia **LO (188-195)**
	Week- 9	Impacted Teeth **LO (183-187)**
	Week- 10	Revision
	Week-11	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module GENERAL MEDICINE
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Pituitary gland disorders (Clinical manifestations, Investigations and Management). **LO (205)** Anemia (Classification, Investigations and Management). **LO (208)**
	Week- 2	Disorders of Thyroid gland (Clinical manifestations, Investigations and Management). **LO (205)** Microcytic anemia (Causes, Investigations and Management). **LO (208)**
	Week- 3	Disorders of the Parathyroid gland (Clinical manifestations, Investigation and Management). **LO (205)** Normocytic anemia (Causes, Investigations and Management). **LO (208)**
	Week- 4	Disorders of Adrenal glands (Clinical manifestations, Investigation and Management). **LO (205)** Macrocytic anemia (Causes, Investigations and Management).**LO (208)**
	Week- 5	Headaches (Types, Investigations and Management). **LO (197)**
	Week- 6	Thrombocytopenia and bleeding disorders (Causes and Management). **LO (210)**
	Week- 7	Epilepsy (Clinical manifestations, Classification, Differential diagnosis and Management). **LO (200)** Thrombocytopenia and bleeding disorders and its management. **LO (210)**
	Week- 8	Cerebrovascular disease (Characteristics features and Differential diagnosis). **LO (196)** Lymphomas (Classification, Clinical features and Treatment). **LO (207)**
	Week- 9	Cerebrovascular disease (Management). **LO (196)** Acute and chronic leukemia (Classification, Clinical features and Treatment). **LO (209)**
	Week- 10	Parkinson's disease, multiple sclerosis and motor neuron disease (Clinical features and Management). **LO (198)**
	Week-11	Fungal and viral infections of skin and its management. **LO (201)** Myeloproliferative disorders (Classification, Clinical features and Treatment). **LO (209)**
	Week-12	Meningitis and encephalitis (Investigations and Treatment). **LO (199)**
	Week-13 and 14	**THEORY AND VIVA EXAMINATION**

Commencement of Module		Weekly Schedule of Module GENERAL SURGERY
Activity	**Week**	**Lecture 1**
Academic Session – BDS Third Professional	Week- 1	Acute Abdomen. **LO (213)**
	Week- 2	Upper GI symptoms and causes, dysphagia causes.**LO (214)** Intestinal obstruction.**LO (215)**
	Week- 3	Peritonitis, perforation. **LO (216)**
	Week- 4	Bleeding P/R, anal area, rectum and colon. **LO (217)** Common specific lesions of lower GIT (amebiasis, TB, CA). **LO (218)**
	Week- 5	Appendicitis, D/D and management. **LO (219)**
	Week- 6	Cholelithiasis, Complications, management and causes. **LO (220)** Obstructive Jaundice & Pancreatic lesions.**LO (221)**
	Week- 7	Liver, mass lesions, abscess, Hydatid disease and tumors. **LO (222)**
	Week- 8	Spleen and Lymphadenopathy**. LO (223)** Empyema thoracis and lung abscess. **LO (224)**
	Week- 9	UTI, Haematuria, BPH. **LO (225-226)**
	Week- 10	Calculous diseases of Urinary Tract. **LO (227)** Ventral wall Hernia and Inguinal hernia. **LO (228)**
	Week-11	Inguino scrotal, scrotal swellings & D/D**. LO (229)**
	Week-12	Arterial Obstruction, both Acute & chronic, Gangrene & Amputation. **LO (230)** DVT & Varicose Veins. **LO (231)**
	Week-13 and 14	**THEORY AND VIVA EXAMINATION**

	COMMUNITY DENTISTRY MODULE-V	Total HOURS	200
S.no	**Learning Objectives**	**Teaching Strategies**	**Assessment Tool**
	At the end of the session, third year student would be able to		
236.	Define dental public health and its significance	IL, SGD	SEQs, Viva
237.	Compare relevance of public health to clinical practice	IL, SGD	SEQs
238.	Discuss criteria for public health problem	IL, SGD, PBL	BCQs, SEQs, PBL, Viva,
239.	Justify dental caries, periodontal disease and oral cancer as a public health problem	IL, SGD, PBL, FV	BCQs, SEQs, PBL, Viva
240.	Explain features of biomedical model of health	IL, SGD	SEQS
241.	Discuss Alma Ata Declaration along with its features	IL, SGD, FV	BCQs, SEQs, OSPE,Viva,
242.	Explain the salient features of Ottawa Charter	IL, SGD, PBL, FV	BCQs, SEQs, OSPE,Viva,PBL
243.	Describe core themes of dental public health	SGD	SEQs,Viva,
244.	Explain the implications of dental public health	SGD	SEQs, , Viva
245.	Describe the limitations of life style approach	SGD	BCQs, SEQs, Viva,
246.	Describe determinants of oral health	IL, SGD, PBL,	BCQs, SEQs, OSPE, PBL, Viva,
247.	Discuss the basic package of oral care (BPOC) with its examples	IL, SGD, PBL, FV, VD, lab skills	BCQs, SEQs, OSPE, PBL, Viva,
248.	Define health, disease, disability, illness & ill health	IL,	SEQs, Viva,
249.	Compare health with disease & illness	SGD	SEQs
250.	Discuss dimensions of health	IL, SGD	BCQs, SEQs, Viva,
251.	Understand different concepts and taxonomy of need	IL, SGD	BCQs, SEQs, Viva,
252.	Define inequalities in oral health	IL	BCQs, Viva
253.	Illustrate conceptual model of oral health	SGD	SEQs, OSPE
254.	Define risk	SGD	BCQs, Viva
255.	Describe principles of strategy design	IL, SGD	SEQs, Viva,

256.	Explain different strategy approaches with examples	IL, SGD, PBL,	BCQs, SEQs, Viva,.
257.	Define and classify epidemiological studies	IL, SGD	BCQs, SEQs, Viva,
258.	Describe the scope of epidemiology	SGD	SEQs, Viva,
259.	Define epidemiological triad and discuss its factors	IL, SGD	BCQs, SEQs, Viva,
260.	Compare different types of epidemiological studies in detail	IL,	BCQs, SEQs, OSPE, Viva,
261.	Discuss descriptive studies	IL,	BCQs, SEQs, VIVA,
262.	Discuss analytical studies	IL,	BCQs, SEQs, VIVA,
263.	Discuss and calculate different measures applied in epidemiology surveys	SGD, Practical	BCQs, SEQs, OSPE, Viva,
264.	Define screening and its aims	IL	BCQs, SEQs, Viva,
265.	Describe the principles and its type of test	IL	BCQs, SEQs, Viva,
266.	Define causation and association	SGD	SEQs, Viva,
267.	Explain Bradford Hill's Criteria	IL,	BCQs, SEQs, Viva,
268.	Describe etiology , natural history & epidemiology of dental caries and early childhood caries	IL, SGD, PBL, Practical, VD, OPD, FV	BCQs, SEQs, OSPE, PBL,Viva,
269.	Recognize etiology, natural history & epidemiology of periodontal disease	IL, SGD, PBL, Practical, VD, OPD, FV	BCQs, SEQs, OSPE, PBL,Viva,
270.	Discuss etiology, natural history & epidemiology of oral cancer	IL, SGD, PBL, Practical, VD, OPD, FV	BCQs, SEQs, OSPE, PBL,Viva,
271.	Explain etiology, natural history & epidemiology of dental fluorosis	IL, SGD, PBL, Practical, VD, OPD, FV	BCQs, SEQs, OSPE, PBL,Viva,
272.	Define index and its objective	IL,	SEQs, Viva
273.	State the properties of an ideal index	IL,	SEQs, Viva
274.	Describe the purpose and uses of an index	IL,	SEQs, Viva
275.	Enumerate and discuss different dental indices for oral diseases	SGD,	BCQs, SEQs, Viva,

276.	Discuss limitations of existing indices	IL,	SEQs, Viva,
277.	Identify different tooth notation systems	SGD, Practical	OSPE,
278.	Predict age on clinical pictures and study models	SGD, Practical	OSPE
279.	Demonstrate ergonomics in clinical practice	SGD, Practical	OSPE,
280.	Perform exercises on patients in the out patients department	SGD, OPD	OSPE
281.	Execute examination of institutionalized population like school children	FV,	OSPE
282.	Calculate different measures of oral diseases used in epidemiology	Practical	OSPE
283.	Calculate DMFT measurement	SGD, Practical, FV	OSPE
284.	Calculate CPITN and other periodontal measurements	SGD, Practical, FV	OSPE
285.	Predict the types of Fluorosis	SGD, Practical, FV	OSPE
286.	Topic selection	SGD, Practical	Assign
287.	Literature search	SGD, Practical	Assign
288.	Synopsis Draft	SGD, Practical	Assign, CP

Weekly schedule of Module V Community and Preventive Dentistry		
Week no.	**Lecture 1**	**Lecture 2**
Week – 1	Introduction to Community Dentistry	Introduction to principle of dental public health L.O (1-10)
Week – 2	Determinants of health L.O (11)	Implication of DPH (BPOC) L.O (12)
Week – 3	Definition of health L.O (13-17)	Public health approaches to prevention L.O (18-21)
Week – 4	**Class assessment test**	Types of Studies and research design (Epidemiology I) L.O (22-24)
Week – 5	Epidemiology II L.O (25-28)	Screening L.O (29-30)
Week – 6	Indices – properties L.O (37 - 41)	Epidemiological Study Measures L.O (31-32)
Week –8	Epidemiology of Periodontal Diseases I L.O (34)	Epidemiology of Periodontal Diseases II L.O (34)
Week -9	**COMMUNITY FIELD TRIP**	
Week -10	Epidemiology of Fluorosis I L.O (36)	Epidemiology of Fluorosis II L.O (36)
Week -11	Epidemiology of oral cancer L.O (35)	Epidemiology of other oral conditions L.O (35)
Week –12	REVISION	REVISION
Week-13	THEORY EXAMINATION	
Week-14	VIVA EXAMINATION	

COMMUNITY DENTISTRY MODULE-V			
S. No	**Learning Objectives**	**Teaching strategy**	**Assessment tool**
	By the end of the session, student will be able to		
219.	Classify different levels of prevention	IL, SGD,	BCQs, SEQs, Viva
220.	Discuss different strategies for the prevention of oral diseases	IL, SGD, PBL	BCQs, SEQs, OSPE, , PBL, Viva,
221.	Describe the etiology and mechanism of dental caries	IL, SGD	BCQs, SEQs, OSPE, Viva,
222.	Explain the role of different types of sugars along with their cariogenic potential	IL, SGD	BCQs, SEQs, OSPE, Viva,
223.	Describe the significance of caries activity test in prevention of dental caries	IL,	SEQs, Viva
224.	Describe the prevention of dental caries through vaccine	IL,	, SEQs
225.	Specify the role of fluoride in prevention of dental caries	IL, SGD,	SEQs, OSPE, Viva,
226.	Integrate the role of diet & plaque control in prevention of dental diseases	IL,	BCQs, SEQs, Viva,
227.	Explain the role of fissure sealants and its application	SGD, VD, PBL, Practical, Skill Lab, OPD	BCQs, SEQs, OSPE, PBL
228.	State the indication and contraindication of fissure sealants	IL, SGD, PBL,	BCQs, SEQs, Viva,
229.	Define dental plaque	SGD	SEQs,Viva
230.	Discuss the different methods of plaque control	IL, SGD, PBL, VD,OPD	BCQs, SEQs, OSPE, PBL, Viva,
231.	Explain clinical approaches in the prevention of oral cancer	IL, SGD, PBL	BCQs, SEQs, Viva, PBL
232.	Understand the metabolism, excretion and mechanism of action of fluoride	IL, SGD	BCQs, SEQs, Viva,

233.	Describe different modes of fluoride intake	IL, SGD	BCQs, SEQs,
234.	Describe the significance of each mode of fluoride intake	IL, SGD	BCQs, SEQs, OSPE, Viva,
235.	Discuss toxicity of fluoride and methods of de-fluoridation.	IL, SGD	BCQs, SEQs,
236.	Explain the key areas outline in Ottawa Charter along with its examples	IL, SGD, PBL,	BCQs, SEQs, OSPE, PBL, Viva,
237.	Define health promotion	IL,	SEQs, Viva,
238.	Discuss elements of health promotion	IL	SEQs, Viva,
239.	Illustrate different approaches of health promotion	IL	SEQs
240.	Recall the scientific basis of oral health education	IL	SEQs, Viva,
241.	Recognize models of planning oral health education	IL	SEQs, Viva,
242.	Explain different methods and materials of health education	IL	SEQs, Viva,
243.	Define health behavior	IL	SEQs,
244.	Enlist different theories of behavior change	IL, SGD,	BCQs, SEQs, Viva,
245.	Describe the health behavior in view of different behavior models	IL,	SEQs, Viva,
246.	Describe ART along with its significance	SGD	SEQs, Viva,
247.	Describe different technique for the application of ART	SGD, VD, Skill Lab, OPD, FV	BCQs, SEQs, Viva, Skill Demonstration, logbook
248.	Enlist the indication and contraindications of ART	SGD	BCQs, SEQs, Viva,
249.	Describe the components of healthcare delivery system	ISGD	BCQs, SEQs, Viva
250.	Describe clinical governance	SGD,	SEQs, Viva,
251.	Discuss the financing of oral healthcare	IL	BCQs, SEQs, OSPE, Viva,
252.	Explain the principles of planning	IL	BCQs, SEQs, OSPE, Viva,
253.	Recall the quality assurance cycle	IL	SEQs, OSPE, Viva,
254.	Recognize the common problems associated with health care	SGD	BCQs, SEQs,
255.	Discuss dental workforce and their role in dentistry	IL, SGD,PBL	BCQs, SEQs, OSPE, Viva, PBL,
256.	Recognize the importance of various sterilization procedures in dental practice	IL, SGD, PBL,	BCQs, SEQs, OSPE, Viva,

257.	Describe occupational hazards, radiation & mercury protection	SGD,	BCQs
258.	Express dental care of patients with special needs, elderly, HIV/AIDS & children	IL	BCQs, SEQs
259.	Define ethics and discuss the guidelines required in making a biomedical decision	IL, SGD, PBL	BCQs, SEQs, Viva, OSPE, PBL
260.	Demonstrate the application of methods of plaque control	Skill Lab, VD	OSPE
261.	Demonstrate the application of fissure sealant	Skills Lab, VD	OSPE
262.	Identify dental fluorosis	Practical	OSPE
263.	Demonstrate topical fluoride application	Lab Skills, VD	OSPE
264.	Practice ART technique on phantom teeth	Lab Skills, VD	OSPE
265.	Data Collection	OPD, FV	Assign
266.	Data Entry and Analysis	Lab Skills	Assign
267.	Planning and conducting a dental health education (D.H.F.) session: I. Design Dental Health Education material	SGD	Assign

Weekly Schedule of Module V Community and Preventive Dentistry		
Week no.	**Lecture 1**	**Lecture 2**
Week – 1	Levels of prevention/ Ottawa charter L.O (1-2)	Prevention of dental caries L.O (3-7 & 9)
Week – 2	Prevention of periodontal disease L.O (8)	Prevention of oral cancer L.O (13)
Week – 3	Role of Flouride I L.O (14-15)	Role of Flouride II L.O (16-17)
Week – 4	Principles of Oral health promotion L.O (18-21)	ART L.O (28-30)
Week – 5	Health education L.O (23-24)	Behavior change L.O (25-27)
Week – 6	**Students competition**	
Week – 7	**Class test**	Health care systems of Pakistan L.O (31 -32)
Week –8	Principles of planning L.O (34-35)	Problems of the health care systems L.O (36)
Week -9	Financing/ economics of dental care L.O (33)	Dental workforce L.O (37)
Week -10	Ethics in dentistry L.O (41)	Infection control L.O (38-39)
Week -11	Oral health care for special children L.O (40)	**REVISION**
Week –12	**REVISION**	**REVISION**
Week –13	THEORY EXAMINATION	
Week-14	VIVA EXAMINATION	

Community Dentistry & Public Health Services MODULE-V TOTAL -07 WEEKS			
S.No	**Objectives**	**Teaching strategy**	**Assessment tool**
	COMMUNITY DENTISTRY		
211.	Define sociology	IL	SEQs, Viva,
212.	Discuss structural & functional aspects of society	IL	BCQs
213.	Explain role of social sciences	IL	BCQs, SEQs
214.	Identify determinants of health behavior	IL	BCQs, SEQs, Viva,
215.	Explain Stress along with its manifestations	ILPBL	BCQs, SEQs, Viva, PBL
216.	Describe Anxiety along with its manifestations	IL,PBL	BCQs, SEQs, Viva, PBL
217.	Understand the reasons and phases in delay in seeking help	IL	BCQs, SEQs, OSPE, Viva
218.	Recognize the dentist-patient communication and its benefits	IL	BCQs, SEQs, OSPE, Viva
219.	Describe child psychology	IL	BCQs, SEQs,
220.	Explain psychodynamic and psychoanalytical theories	IL	BCQs, SEQs, Viva
221.	Explain different behavior management techniques	IL,PBL	BCQs, SEQs, OSPE, Viva, PBL
222.	Define statistics and biostatistics	IL,	BCQs, SEQs, OSPE, Viva
223.	List types of variables	IL,	BCQs, SEQs, OSPE, Viva,
224.	Formulate hypothesis and questionnaire using PICO	SGD	Assign
225.	Describe measures of central tendency	IL	BCQs, SEQs, Viva,
226.	Describe measures of dispersion	IL	BCQs, SEQs, Viva,
227.	Understand tests of significance	IL	BCQs, SEQs, Viva,
228.	Describe frequency distribution	IL	BCQs, SEQs, OSPE, Viva,
229.	Explain the concept of sampling error and types of error	IL,	BCQs

230.	Describe confidence interval and probability	IL,	BCQs, SEQs, Viva,

Weekly Schedule of Module **Community and Preventive Dentistry**		
Week no.	**Lecture 1**	**Lecture 2**
Week – 1	Sociology I L.O (1-2)	Sociology II L.O (3-4)
Week – 2	Behavior Management I L.O (11)	Behavior Management II L.O (11)
Week – 3	Child psychology I L.O (9)	Child psychology II L.O (10)
Week – 4	Stress/ Anxiety L.O (5-6)	Delay in seeking help L.O (7)
Week – 5	**Community Field Trip**	
Week – 6	Patient dentist communication L.O (8)	**Class test**
Week – 7	Introduction to biostatistics L.O (12-14)	Types of sampling I L.O (19)
Week –8	Types of sampling II L.O (19)	Measures of Central Tendency/ dispersion L.O (15, 16, 18, 20)
Week -9	**Community Field Trip**	
Week -10	Tests of significance L.O (17)	Concept of sampling error L.O (19)
Week -11	Revision	Revision
Week –12	Revision	Revision
Week –13	THEORY EXAMINATION	
Week-14	VIVA EXAMINATION	

231.	Research Results Generation	Lab Skills,	Assign
232.	Discussion Writing and Submission	SGD	Assign

LEARNING RESOURCES THIRD YEAR BDS

RECOMMENDED BOOKS THIRD YEAR BDS			
OMFS	**PROSTHODONTICS**	**Oral Pathology**	**OPERATIVE DENTISTRY**
8. Peter D. Turnpenny, Emery's Elements of Medical Genetics (14th ed.). New York: Churchill Livingstone. 2011. 9. Cotran RS, Kumar V and Collins T. Robbin's Pathologic Basis of Disease (8th ed.). Philadelphia: W.B. Saunders. 2010. 10. Walter JB and Talbot IC. Walter and Israel's General Pathology (7th ed.). New York: Churchill Livingstone. 1996. 11. Kumar V, Cotran RS, and Robbins SL. Basic Pathology (8th ed.). Philadelphia: W.B. Saunders. 2007. 12. Rubin E, Pathology (4th ed.) Philadelphia: Lippincott-Raven. 2005 13. Ivan Roitt. Riott's Essential Immunology (11th ed.). New Delhi:I.K. International Pvt. Ltd. 2007. 14. Harsh Mohan. Textbook of pathology. 6th ed. Jaypee broth. 2010. **ATLAS** 3. Wheater P et al. Basic Histopathology: A Color Atlas and Text (2nd ed.). Edinburgh: Churchill Livingstone. 1990. 4. Harsh Mohan. Pathology practical book. 2nd ed. Jaypee broth. 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. J V Soames, J C Southam, Textbook of Oral Pathology, 4th Edition 2. R A Cawson, E W Odell, Essentials of Oral Pathology and Oral Medicine, 8th Edition 3. Shafer, Hine, Levy, Textbook of Oral Pathology, 6th Edition 4. Regezi, Oral Pathology, 6th Edition 5. Neville, Damm, Oral and Maxillofacial Pathology, 3rd 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. 8. Pickardards Manual of Operative Dentistry by EAM Kidd. 9. Fundamentals of Operative Dentistry by Schwartz 10. Dental Restorative Materials – Craig 11. Textbook of Operative Dentistry by Vimal K Sikri
RECOMMENDED E-BOOKS THIRD YEAR BDS			
		1. Atlas of Oral	

		Microbiology by Zhou 2. Oral Pathology Clinical Pathologic Correlation by Regezi 3. Oral Pathology by Soames, 4th edition. 4. Oral Radiology by Eric Waites	

RECOMMENDED BOOKS THIRD YEAR BDS			
PERIODONTOLOGY	**ORAL MEDICINE**	**GEERAL MEDICINE**	**GENERAL SURGERY**
1. Neman and Carranza's Clinical Periodontology 13th edition. 2. Linda's Clinical Periodontology and Implant Dentistry	• William R.Tyldesley, Oral Medicine, 5th Edition • Lester W. Burket, Oral Medicine, 11th Edition • Roderick A.Cawson, Oral Medicine, 8th Edition • Crispian Scully, Oral Medicine, 3rd Edition	1. Parveen Kumar, Kumar and Clark's Clinical Medicine, 8th Edition 2. Maxine A Papadakis, Current Medical Diagnosis and Treatment, Edition 2016 8th Edition	1. 1. Short Practice of Surgery by Bailey & Love. 27th Edition 2. An Introduction to the Symptoms & Signs of Surgical Diseases by Norman S Bros 3. Manual of Clinical Surgery by S. Das
RECOMMENDED E-BOOKS THIRD YEAR BDS			
1. Clinical periodontology Implant Dentistry by Lindhe	1. Text Book of Oral Medicine ,Oral Diagnosis and Oral Radiology by Ongole	5. Atlas of Oral Microbiology by Zhou 6. Oral Pathology Clinical Pathologic Correlation by Regezi 7. Oral Pathology by Soames, 4th edition. 8. Oral Radiology by Eric Waites	

LEARNING RESOURCES

DEPARTMENT OF COMMUNITY & PREVENTIVE DENTISTRY

1. Burt, B. &Eklund, S. (2005) Dentistry, Dental Practice & The Community. 6th ed. Saunders
2. SS Hiremith, (2009), textbook of Preventive and Community Dentistry
3. Daly B, Watt R, Batchelor P & Treasure E (2013) Essential Dental Public Health, Oxford University Press.
4. Smeeton Nigel (2012) Dental Statistics Made Easy 2nd edition Radcliffe Publication
5. Essential of Preventive and Community Dentistry Soben Peter (Latest Edition)
6. Text Book of Preventive and Community Dentistry Joseph John (Latest Edition

6.4: CURRICULUM OF FOURTH YEAR BDS

MODULE I (Endodontics, Growth and Development, Basic surgical principles, Edentulism)

At the end of the module, students should be able to:

S.no	Learning Objectives	Teaching Strategies	Assessment Tool
	OPERATIVE DENTISTRY		
1.	Define Endodontics	IL	BCQs/VIVA
2.	Memorize Aims of Endodontics	IL	BCQs
3.	Identify Anatomy of the root canal system	IL	OSCE
4.	Review the dental Pulpal System	IL/SGD	BCQs/SEQs
5.	Know the cells and extracellular components of the dental pulp	IL	BCQs
6.	Debate the blood vessels, lymphatic system and Innervations of dental pulp	IL	BCQs
7.	Discuss the theories of dentine hypersensitivity	IL/SGD	SEQs
8.	Recognize the age changes in the dental pulp	IL	BCQs
9.	Revise the function of the dental pulp	IL/SGD	BCQs
10.	Illustrate various canal configurations	IL/SGD	OSCE
11.	Understand the periapical tissues	IL	BCQs
12.	Debate Iatrogenic Effects on the dental pulp	IL/SGD	BCQs/SEQs/OSCE
13.	Manage how to protect the Dental pulp	IL/CR/CBL	BCQs/SEQs/VIVA
14.	Plan Vital Pulp Therapies	IL/CR	SEQs/OSCE
15.	Perform Step-wise excavation	IL/CR	BCQs/SEQs/OSCE
16.	Execute Direct Pulp Capping	IL/CR	SEQs/OSCE
17.	Propose Pulpotomy (partial and complete)	IL/CR	SEQs/OSCE
18.	Understand Apexogensis	IL/CR/CBL	SEQs/OSCE
19.	Discuss the procedure of Apexification	IL/CR/CBL	SEQs/OSCE
20.	Describe the types of endodontic infection	IL/SGD	BCQs/SEQs

21.	Relate the route of entry of microorganisms to the pulpal infection	IL/SGD	BCQs/ VIVA
22.	Name the microorganisms associated with pulpal and periradicular diseases	IL	BCQs/SEQs /VIVA
23.	Explain the development of pulpal pathosis	IL	BCQs
24.	Differentiate between Pulpal Diseases and their clinical features	IL/SGD/CR	BCQs/SEQs/OSCE
25.	Know etiology of reversible and irreversible pulpitis	IL/SGD	BCQs/SEQs/VIVA
26.	Perform management of reversible and irreversible pulpitis	IL/CR	BCQs/SEQs/OSCE
27.	Recognize the pulp polyp	IL/CR	BCQs/SEQs/OSCE
28.	Classify Periapical Lesions of pulpal origin	IL/SGD	BCQs/SEQs/OSCE
29.	Explain etiology, sign symptoms and management of symptomatic apical periodontitis	IL/SGD	BCQs/SEQs/OSCE
30.	Discuss clinical features and management of asymptomatic apical periodontitis	IL/SGD	BCQs/SEQs/OSCE
31.	Define Condensing Osteitis	IL/SGD	BCQs
32.	Differentiate between acute apical abscess and chronic apical abscess	IL/SGD	BCQs/SEQs/OSCE
33.	Relate primary endodontic and secondary periodontal lesion	IL/CR	BCQs/SEQs/OSCE
34.	Know primary periodontal lesion and secondary endodontic lesion	IL/CR	BCQs/SEQs/OSCE
35.	Report the healing of periapical lesions after root canal treatment	IL/CR	BCQs
36.	Practice diagnosis for pulpal & periapical infection	CR	BCQs/OSCE
37.	Speak the correct questions about history and symptoms of the present complaint	CR	OSCE /VIVA
38.	Apply methods for Extraoral & Intraoral examination	CR	OSCE /VIVA
39.	Perform clinical tests to check pulp and periapical status	CR	OSCE
40.	Interpret Radiographic findings for diagnosis	CR/SGD	BCQs/OSCE
41.	Formulate treatment plan for endodontic emergencies	IL/CR/SGD	BCQs/OSCE
42.	Identify endodontic instruments	CR/SGD	BCQs/OSCE
43.	Express importance of endodontic radiology	IL/CR	BCQs/OSCE
44.	List components of X-ray film packet	IL/CR	BCQs/OSCE
45.	Revise principle of ALARA	IL/CR/SGD	BCQs/SEQs/OSCE
46.	Restate indications of Periapical radiograph	IL/CR	BCQs/SEQs

47.	Demonstrate and apply positioning technique of periapical radiograph	CR	BCQs/OSCE
48.	Compare paralleling and bisecting angle technique	IL/SGD	BCQs/OSCE
49.	Use SLOB rule	IL/SGD	BCQs/OSCE
50.	Recognize the importance of digital radiography	IL/SGD	BCQs
51.	Apply techniques of local anesthesia (Infiltration & Block anesthesia)	CR	BCQs/SEQs/OSCE
52.	Implement technique of supplemental anesthesia including Intraosseous, Intraligamentary, Intrapulpal	IL/CR	BCQs/SEQs/OSCE
53.	Practice principal of Isolation in endodontic	Skill Lab/CR	OSCE
54.	Identify objectives of straight line access preparation in both anteriors and posteriors teeth	IL/SGD/CR	BCQs/ VIVA
55.	Describe the sequences of operations to start access preparations on various teeth	IL/SGD/CR	BCQs/ VIVA
56.	Demonstrate the location of each canal orifice	IL/SGD/CR	BCQs/OSCE
57.	Perform the pulpectomy	IL/SGD/CR	BCQs/OSCE
58.	Establish the working length of the root canals	IL/SGD/CR	BCQs/OSCE
59.	Explain cleaning and shaping of root canals	IL/SGD/CR	BCQs/SEQs/OSCE
60.	Differentiate between step-back and crown-down techniques of canal preparation	IL/SGD/CR	BCQs/SEQs/OSCE
61.	Know the Irrigants use during cleaning and shaping	IL/SGD/CR	BCQs/SEQs/ VIVA
62.	Execute passive step-back, balanced force and Ni-ti rotary techniques of canal preparation	IL/CR	BCQs/SEQs
63.	Quantify the criteria for evaluating cleaning and shaping	IL/SGD/CR	BCQs/SEQs
64.	Understands the objectives of intracanal medicaments in root canal treatment	IL/SGD/CR	BCQs/SEQs/ VIVA
65.	Perform the use of intracanal medicaments	IL/SGD/CR	BCQs/SEQs
66.	Apply temporary restorations to seal the access cavity	IL/SGD/CR	SEQs
67.	Know when to obturate the canal	IL/SGD/CR	BCQs
68.	Write obturation and sealer materials	IL/SGD	BCQs/SEQs
69.	Perform different techniques of obturation (lateral condensation, vertical compaction)	IL/CR	BCQs/SEQs/ OSCE
70.	Execute restoration of endodontically treated teeth	IL/CR	BCQs /VIVA
71.	Recognize Procedural Accidents during root canal treatment	IL/CBL	BCQs/SEQs/OSCE
72.	Memorize Indications of retreatment in failed endodontic tooth	IL	BCQs/SEQs
73.	Execute procedure for Retreatment	IL	BCQs/SEQs/

			VIVA
74.	Describe indications and contraindications of periapical surgery	IL	BCQs/SEQs
75.	Perform procedures involved in periapical surgery	IL	BCQs/SEQs
76.	Differentiate between Root amputation, Hemisection and Bicuspidization	IL	BCQs/SEQs/OSCE
77.	Evaluate Endodontic Outcomes	IL	BCQs
78.	Categories longitudinal tooth fractures	IL	BCQs/SEQs
79.	Perform Diagnosis of longitudinal tooth fractures	IL	BCQs/SEQs/OSCE
80.	Plan management of longitudinal tooth fractures	IL	BCQs/SEQs/OSCE
81.	Identify the different orthodontic terms	IL	OSCE
82.	Use the terms in diagnosis and problem list of a case	IL/ CR	CQ /OSCE
83.	Relate which types of malocclusions are treatable with Orthodontic treatment	IL/ CBL/ CR	SEQ/OSCE
84.	Recall the normal anatomical structures of head and face	IL	CQ
85.	Quote the importance of studying growth	IL	SEQ
86.	Quote different types of bone growth	IL	SEQ / BCQ
87.	State the reasons for different types of bone growth	IL	SEQ / BCQ
88.	Quote what are growth fields, sites and centers	IL	SEQ / BCQ
89.	List differences between the growth fields, sites and centers	IL	SEQ / BCQ
90.	List areas which are fields, sites and centers	IL	BCQ
91.	Recall and present how the growth occurs in different areas of head and face	IL/CP	SEQ
92.	List out the different theories regarding how growth takes place	IL	SEQ
93.	Identify the theory that explains the growth process that is taking place in the jaw	IL	SEQ
94.	Discuss the reasons why some growth theories were discarded	IL	CQ
95.	Quote what type of growth occurs in the maxilla and mandible	IL	SEQ
96.	Predict the changes that would occur in maxilla and mandible at different chronological ages	IL / CR	OSCE
97.	Identify changes in width, length and height of jaws during	IL	SEQ/ BCQ/

	growth		OSCE
98.	State the normal growth rotations that occur in jaws	IL / CBL	OSCE
99.	Recognize the abnormal growth rotations that occur in jaws	CBL	OSCE
100.	Identify the type of growth rotation that occurs in a particular patient	CR / CBL	OSCE
101.	State how occlusion develops	IL / CR	CQ
102.	Identify the physiologic spaces that occur in an arch during deciduous and mixed dentition	IL/ CR	OSCE/ BCQ
103.	Recognize the importance of the physiologic spaces that occur in an arch during deciduous and mixed dentition	IL	OSCE / BCQ
104.	Measure and calculate the physiologic spaces during mixed dentition for diagnosis	CR	OSCE
105.	Identify the dentition	CR	OSCE
106.	Recognize the differences between deciduous and permanent dentition	CR	OSCE
107.	Quote what is arch length deficiency	IL / CR	CQ
108.	Measure the arch length deficiency	CR	OSCE
109.	Recognize the importance of calculating arch length deficiency	IL / CR	OSCE / BCQ
110.	Calculate the arch length deficiency in mixed dentition	CR/ CBL	OSCE
111.	Identify space loss in an arch	CR / CBL	OSCE
112.	Quote the importance of identification of space loss in the arch	IL	CQ
113.	Relate the teeth present in the arch to the chronological age of the patient	CR / CBL	OSCE
114.	Quote the eruption timings of the teeth in an arch	CR	OSCE
115.	Recognize the eruption sequence and timings in an arch	CBL	OSCE/ BCQ
116.	Recognize the changes in arch during transition between deciduous , mixed and permanent dentition	CR / CBL	OSCE / BCQ
ORTHODONTICS / PROSTHODONTICS /OPERATIVE			
117.	Recognize different terminologies of occlusion	IL / CR	OSCE
118.	Interpret the different terminologies of occlusion	CR	OSCE

119.	Quote the differences between static and dynamic occlusion	IL	OSCE / BCQ
120.	Use the terminologies of occlusion when making a problem list of a patient	IL / CR	OSCE
121.	State the methods to measure the dynamic occlusion	IL	SEQ/ BCQ
122.	Recognize the importance of measuring dynamic occlusion in a case	IL	CQ
123.	Quote different classifications of occlusion	IL / CR	SEQ / BCQ
124.	Recognize the normal inter-relationship of teeth	CR	OSCE
125.	State how occlusal interferences and the malocclusions and effect on musculature	IL / CR	BCQ/ OSCE
126.	Correlate centric relation, centric occlusion and maximum intercuspation.	IL	BCQ
127.	Recognize the acceptable final relationship of upper and lower teeth, at the end of orthodontic treatment	IL / CR	OSCE
128.	Recognize the importance of the curves of occlusion in an arch	IL / CR	OSCE
129.	Classify occlusion	IL	SEQ
ORTHODONTICS			
130.	State Andrews six keys of occlusion	IL / CR	SEQ
131.	Recognize the importance of having the six keys in a dentition	IL/ CR	OSCE
132.	Recognize the absence of any of the six keys in a dentition	CR	OSCE
133.	Recognize the importance of functional and non functional cusps	IL	SEQ/ BCQ
134.	Identify certain syndromes due to their clinical features	CP	BCQ / OSCE
135.	Predict the dental malocclusion for each syndrome	IL / CBL	OSCE
136.	Recognize the treatment changes that occur due to the presence of a syndrome in a patient	CBL	SEQ/ BCQ/ OSCE
137.	Quote the etiologies of different syndromes	IL	SEQ / OSCE
138.	Quote differences between skeletal and chronological age of a patient	IL / CR	OSCE
139.	Recognize the importance of calculating a patients age before growth completes	IL / CBL/ CR	OSCE
140.	Recognize the importance of utilization of growth potential while providing treatment to orthodontic patient.	IL/ CBL / CR	OSCE/ BCQ
141.	Estimate the skeletal age of a patient	CR	OSCE/ BCQ
142.	Quote the different treatment options available at different stages of growth of patient	CR	OSCE

143.	Measure overjet and overbite clinically	CR	OSCE
144.	Record maximum intercuspation	CR	OSCE
145.	Compare canine guidance and group function occlusion schemes	IL / CR	BCQ/ SEQ/ OSCE
146.	Differentiate between static and dynamic occlusion.	IL	BCQ
147.	Relate different determinants of occlusion.	IL	BCQ
148.	Correlate centric relation, centric occlusion and maximum intercuspation.	IL	BCQ
149.	Correlate temporomandibular joint, musculature and teeth.	IL	BCQ
150.	Measure overjet and overbite clinically	CR	BCQ/OSCE
151.	Record maximum intercuspation	CR	BCQ/OSCE
152.	Classify molar relationship according to angle's classification	IL	BCQ
153.	Compare canine guidance and group function occlusion schemes	IL	BCQ
154.	Identify functional and non-functional cusps.	IL/CR	BCQ/OSCE
155.	Differentiate between working and non-working side movements.	IL	BCQ
	PROSTHODONTICS		
156.	Associate Bennett angle and Bennett movement/side shift with laterotrusive movement.	IL	BCQ
157.	Classify movements of the TMJ.	IL	BCQ
158.	Differentiate between border movements and intraborder movements.	IL	BCQ
159.	Identify occlusal scheme clinically.	IL/CR	BCQ/OSCE
160.	Compare physiological and pathological occlusion.	IL	BCQ
	ORTHODONTICS		
161.	Differentiate between static and dynamic occlusion.	IL	BCQ
162.	Identify abnormalities that can develop at permanent stages of dentition	IL	OSCE
163.	Discuss how the permanent teeth adjust in spaces of deciduous teeth	IL/ CR	OSCE
164.	Discuss the physiologic functions of oral cavity and any abnormalities that occur due to habits or other environmental factors	IL	SEQ/ BCQ
165.	Quote the various theories of eruption	IL	SEQ / OSCE

166.	Identify the eruption sequence of teeth, and the importance of that sequence	IL / CR	OSCE/ BCQ
167.	Quote various syndromes that can develop at various stages of development	CP / CBL	SEQ/ BCQ/ OSCE
168.	Identify the various syndromes and the malocclusions that they result in.	CP / CBL	OSCE
	OMFS		
169.	Recall indications and contraindications of local anesthesia, general anesthesia and sedation	IL	BCQ
170.	Identify the role of conscious sedation in the field of Oral and Maxillofacial Surgery	IL	BCQ
171.	Enlist the complications associated with local and general anesthesia	IL	BCQ
172.	Recall Infiltration and Block techniques of Local anesthesia	IL/SGD/CR	OSCE
173.	Recall principles of flap design and incision	IL	BCQ/SEQ
174.	Recall the principles of suturing, types of sutures, advantages and disadvantages	IL/SGD	BCQ
175.	Interpret various hematological and radiological investigations	IL	BCQ
176.	List the instruments used in Oral & Maxillofacial surgery	IL/CR	BCQ/OSCE
177.	Take the history of patient at the chair side with relevant information, evaluation, assessment, diagnosis and treatment plan	IL/CR	SEQ/OSCE
178.	Identify and state the preventive measures for medical emergencies in Dental Office.	IL/CBL	BCQ/SEQ/CP
179.	Discuss the management of Medical emergencies in dentistry	IL/CBL	BCQ/SEQ/CP
180.	Recall importance of sterilization and disinfection in Oral Surgery	IL	BCQ
181.	Tell the hazards of Cross-infection	IL	BCQ
182.	Apply personal barriers for prevention of cross infection	IL	BCQ
183.	Describe the principles of Exodontia	IL	BCQ/SEQ
184.	Identify complete armamentarium used in Oral and Maxillofacial Surgery and its dynamic	IL/CR	BCQ/OSCE
185.	Assess patient requiring Exodontia independently	IL/CR	BCQ
186.	Differentiate between simple and complex exodontia	IL	BCQ
187.	Recall the classification systems of Impacted Mandibular and Maxillary 3rd molar and maxillary canine	IL	SEQ
188.	Identify the complications of removal of Impacted teeth along with its indications and contraindications	IL	SEQ

189.	Enlist the dentoalveolar injuries and its management	IL	BCQ
190.	Identify the indications of Pre-prosthetic surgery and its role	IL	BCQ
191.	Describe Ridge augmentation and reduction (alveoloplasty) procedures	IL	BCQ
192.	Enumerate pre-prosthetic procedures commonly performed in maxilla and mandible	IL	BCQ/OSCE
193.	Know the principles of Endodontic surgery and relate periodontal consideration for oral surgery procedures	IL	BCQ
194.	Enumerate the indications of Endodontic Surgery	IL	BCQ
195.	Classify orofacial pain	IL/CBL	BCQ/SEQ
196.	Enumerate the causes of oro-facial pain	IL	BCQ
197.	Formulate differential diagnosis of pain in the oral and maxillofacial region and devise management plan accordingly	IL/CBL	OSCE
	PROSTHODONTICS		
198.	Enumerate the causes of tooth loss and it's complications if untreated	IL	BCQ
199.	Identify partially dentate oral state, mutilated dentition, collapsed arch and edentate oral state.	IL	OSCE
200.	Anticipate challenges in managing edentulous patient.	IL	BCQ
201.	Compare the support mechanism for the natural dentition and complete dentures	IL	SEQ/BCQ
202.	Ascertain the functional responses of occlusion of an edentulous state.	IL	BCQ
203.	Correlate mucosal support with masticatory loads	IL	SEQ/BCQ
204.	Identify features and risk factors associated with parafunctional habits	IL/CBL 1	BCQ
205.	Compare the forces generated by mastication and parafunctional habits.	IL	BCQ
206.	Appreciate the morphological changes due to edentulism	IL/CBL 1	SEQ/BCQ
207.	Correlate the changes in morphological face height and the temporomandibular joints with edentate state.	IL/CBL 1	BCQ
208.	Enumerate the esthetic, behavioral and adaptive responses in an edentulous patient.	IL/CBL 1	BCQ
209.	Identify the type of mandibular border movement according to Posselt's envelop of motion.	IL	OSCE
210.	Define the term gerodontology	IL	BCQ
211.	Anticipate the problems associated with the geriatric patients.	IL	BCQ
212.	Devise management strategies for the dental care of the elderly in light of the oral diseases, systemic disorders,	IL	BCQ

	psychological and social factors.		
213.	Distinguish between normal and abnormal consequences of aging.	IL/CBL 1	SEQ/BCQ
214.	Relate impact of age on the edentulous mouth, teeth and the orofacial structures.	IL/CBL 1	SEQ/BCQ
215.	Assess effects of excessive tooth wear, root dental caries and recession of the gingival tissues on provision of removable prostheses.	IL	BCQ
216.	Anticipate the problems associated with residual ridge resorption (RRR)	IL/CBL 1	SEQ/BCQ
217.	Associate factors affecting rate and pattern of residual ridge resorption	IL/CBL 1	SEQ/BCQ
218.	Identify residual ridge according to Atwood's classification of residual ridge resorption.	IL/CBL 1	OSCE
219.	Ascertain the basic resorption pattern of the maxilla and mandible	IL/CBL 1	OSCE/BCQ
220.	Plan treatment for patients with residual ridge resorption	IL/CBL 1/CR	SEQ/OSCE
221.	Comprehend the problems associated with tooth loss in the elderly and lack of nutrition.	IL/CBL 1	BCQ
222.	Correlate nutritional deficiencies due to local and systemic problems with oral health.	IL/CBL 1	BCQ
223.	Devise a treatment protocol for patients having mucosal conditions	IL	BCQ/OSCE
224.	Assess impacts of oral movement disorders, salivary dysfunction and systemic diseases on adaptive denture experience	IL	BCQ
225.	Enumerate risk factors of malnutrition	IL	BCQ
226.	Correlate nutritional deficiency to oral effects and its impact on denture experience	IL	BCQ/OSCE
227.	Examine the dentures in the oral environment	CR	OSCE
228.	Categorize direct and indirect sequelae caused by removable prosthesis.	IL/CBL	SEQ/BCQ
229.	Identify different types of denture stomatitis.	IL/CR/CBL	OSCE
230.	Manage denture stomatitis.	IL/CBL	SEQ
231.	Identify flabby ridge.	CR/CBL	OSCE
232.	Ascertain the effects of flabby ridge on denture construction.	IL/CBL	OSCE
233.	Identify denture irritation hyperplasia.	IL/CBL/CR	OSCE
234.	Diagnose denture related pathologies.	IL	OSCE
235.	Devise treatment protocol for denture related pathologies	IL	SEQ/OSCE
236.	Manage denture related traumatic ulcers.	IL/CR	OSCE
237.	Enlist complications related to xerostomia in denture wearing patients	IL/CBL	SEQ
238.	Identify the features and risk factors associated with burning	IL	SEQ/BCQ

	mouth syndrome.		
239.	Manage a gag reflex patient.	CR	OSCE
240.	Identify risk factors of atrophy of masticatory muscles.	IL	BCQ
241.	Diagnose a patient having atrophic masticatory muscles.	CR	OSCE
242.	Associate reduced salivary flow rate with elderly patients.	IL	BCQ
243.	Devise preventive strategies for controlling the sequelae of wearing complete dentures.	IL	SEQ/BCQ
244.	Define basic terminologies of complete denture prosthesis	SGD	BCQ
245.	Justify the need of complete dentures	SGD	BCQ
246.	Assess the different treatment options for edentulous patients	IL/CBL	SEQ/BCQ
247.	Assess examination charts and records	CR/SGD	OSCE
248.	Obtain comprehensive history of an edentate patient.	CR	OSCE
249.	Evaluate general physical observations affecting diagnosis.	CR	OSCE
250.	Perform extra oral and intraoral examination of an edentulous patient.	CR	OSCE
251.	Rationalize the importance of intraoral and extra oral features in denture construction	IL/CR/SGD	BCQ/OSCE
252.	Justify the use of radiographs in edentate patient.	IL/CR	OSCE
253.	Analyze diagnostic casts.	CR	OSCE
254.	Rationalize the use of diagnostic cast and diagnostic maxillomandibular relation.	IL/CR	BCQ/OSCE
255.	Interpret diagnostic data with its influence on denture construction.	IL/CR	BCQ/SEQ/OSCE
256.	Correlate biomechanical considerations to denture construction.	CR	SEQ/BCQ/OSCE
257.	Plan treatment for the complete denture patient.	CR/CBL	BCQ/OSCE
258.	Prepare a patient for receiving prosthesis.	CR/CBL	BCQ/SEQ
259.	Outline protocols in chronological order for preparing a patient for prosthesis	IL/CBL	SEQ/OSCE
260.	Control and manage denture related infections before prosthesis fabrication.	IL/CBL	SEQ/BCQ/OSCE
261.	Follow protocols of denture usage /alteration in patients with denture related infections.	CR	BCQ/OSCE
262.	Outline measures to manage unfavorable morphological characteristics that may compromise denture construction	IL/CBL	SEQ/BCQ/OSCE
263.	Justify use of surgical procedures to optimize denture bearing areas.	IL/CBL	BCQ/OSCE
264.	Identify morphological characteristics of denture bearing areas	IL/CR	OSCE
265.	Differentiate between anatomic landmarks and limiting structures pertaining to complete dentures	IL/CR	OSCE
266.	Correlate limiting structures to denture borders	IL/CBL	BCQ /OSCE
267.	Correlate the action of muscles in limiting structures on denture stability	IL/CBL	BCQ/OSCE

268.	Avoid damage to oral and paraoral structures during clinical procedures.	CR	BCQ/OSCE
269.	Select biomaterials for patients having compromised oral tissues.	CR/SGD	BCQ/OSCE
270.	Apply properties of biomaterials for different procedures of complete denture construction.	CR/SGD	BCQ/OPD
271.	Identify anterior and posterior vibrating lines	IL/CR	OSCE
272.	Outline ways of marking the anterior and posterior vibrating lines	IL/CR	SEQ/BCQ
273.	Mark anterior and posterior vibrating lines	IL/CR	OSCE
274.	Appraise the effect of post dam area on denture retention	IL/CR	BCQ/OSCE
275.	Correlate soft palate classification with post-dam area	IL/CR	OSCE
276.	Select a proper denture base material for different edentulous patients.	CR	BCQ/OPD
277.	Assess causes of imperfections in denture bases.	CR	OSCE
278.	Compare acrylic resin and porcelain teeth in dental prostheses.	SGD/CR	SEQ/BCQ
279.	Identify the surfaces of a denture	CR	OSCE
280.	Fabricate a trial denture base (TDB) with a knowledge regarding materials and basic requirements.	IL/CR	OSCE
281.	Justify the use and design of occlusal rims.	SGD/CR	BCQ/OSCE
282.	Fabricate occlusal rims according to guidelines.	CR	OSCE/OPD
283.	Outline procedures to reinforce wax occlusal rim.	SGD	OSCE
284.	Compare an arbitrary facebow and kinematic facebow.	IL	SEQ/BCQ
285.	Justify the use of facebow record in complete denture construction.	IL	SEQ/BCQ
286.	Take an orientation record using Hanau Face bow.	CR	OSCE/OPD
287.	Transfer the face bow record to Hanau semi adjustable articulator.	CR	OSCE/OPD
288.	Set condylar guidance and Bennett angle using arbitrary method.	CR	OSCE
289.	Enumerate guidelines for fabrication and adjusting occlusal rims intraorally	IL	SEQ
290.	Adjust the occlusal rim according to labial and buccal fullness.	CR	OSCE/OPD
291.	Analyze the guide for esthetics in light of degenerative changes occurring in the skin.	IL/CR	BCQ/OSCE
292.	Mark midline, low and high lip line, incisal show and canine line.	CR	OSCE
293.	Estimate the level of occlusal plane using Fox's plane.	CR	OSCE/OPD
294.	Outline other methods of estimating occlusal plane.	IL	SEQ/BCQ
295.	Classify maxillomandibular records.	IL	SEQ/BCQ/OSCE
296.	Enumerate the methods to record different maxillomandibular	IL	SEQ/BCQ/OSCE

	relations		
297.	Outline sequence of taking maxillomandibular relation with reasoning	IL	SEQ/BCQ/OSCE
298.	Determine the rest vertical dimension using mechanical and physiological methods.	CR	OSCE/OPD
299.	Compute freeway space by determining rest vertical and occlusal vertical dimension.	CR	OSCE/OPD
300.	Record centric relation in an edentulous patient.	CR	OSCE/OPD
301.	Apply concepts of mandibular movements in centric relation record.	CR	BCQ/OSCE
302.	Enumerate different factors which influence and regulate mandibular movements.	IL	BCQ
303.	Justify the use of centric relation as a starting point for fabricating complete denture occlusion.	IL	BCQ
304.	Diagnose cases with improper occlusal vertical dimension	IL/CR	SEQ/BCQ/OSCE
305.	Enlist consequences of improper occlusal vertical dimension	IL/CR	SEQ/BCQ/OSCE
306.	Devise management protocol for patients having improper occlusal vertical dimension	IL/CR	SEQ/BCQ/OSCE
307.	Classify the Articulators.	IL	SEQ/BCQ/OSCE
308.	Identify different parts of an articulator.	CR	OSCE
309.	Differentiate between an arcon and a non arcon articulator.	IL/CR	BCQ/OSCE
310.	Program the articulator by adjusting condylar guidance through a protrusive record.	CR	OSCE
311.	Select anterior teeth based on aesthetics and function.	IL/CR	SEQ/OSCE
312.	Select posterior teeth based on interarch space, residual alveolar ridges and functional needs.	IL/CR	SEQ/OSCE
313.	Identify different posterior tooth molds.	CR	OSCE
314.	Formulate the guides for preliminary arrangement of anterior teeth.	IL/CR	OPD/OSCE
315.	Relate incisive papilla with anterior teeth placement	IL/CR	SEQ/BCQ/OPD
316.	Apply the role of musculature and aesthetics on anterior tooth arrangement.	IL/CR	BCQ/OSCE
317.	Mark the guidelines for tooth set up on maxillary and mandibular casts	IL/CR	OSCE
318.	Apply knowledge of tooth setup guidelines	IL/CR	BCQ/OSCE
319.	Set up the anterior teeth in wax for Class I orthognathic relationship with canine Class I canine relationship.	CR	OSCE
320.	Create appropriate overjet and overbite according to case.	CR	OSCE
321.	Measure the overjet and overbite clinically as well as on articulator.	CR	OSCE

322.	Mark tentative bucco-lingual placement of posterior teeth on the cast.	CR	OSCE
323.	Set up the posterior teeth in wax for Class I orthognathic relationship with Class I molar relationship.	CR	OSCE
324.	Apply role of musculature and residual ridge on posterior tooth set up.	IL/CR	BCQ/OSCE
325.	Anticipate problems of setting teeth out of the neutral zone.	IL	BCQ
326.	Correlate the wax occlusal rim with the guidelines marked on the cast.	IL/CR	BCQ/OSCE
327.	Arrange anatomical teeth to a balanced occlusion.	CR	OSCE
328.	Ascertain the procedure for arranging maxillary or mandibular teeth first with justification.	IL/CR	BCQ
329.	Enlist the pre requisites for arranging teeth in balanced occlusion and articulation	IL	SEQ
330.	Sort occlusal schemes for natural and artificial occlusion	IL	BCQ
331.	Enumerate the characteristics of balanced occlusion and articulation	IL	SEQ
332.	Justify the use of compensating curves and tilt in occlusal plane to attain balanced occlusion.	IL	BCQ
333.	Correlate incisal guidance, compensating curves, occlusal plane, condylar guidance and cuspal inclines with each other.	IL/CR	SEQ/BCQ
334.	Separate anterior and posterior guidance components	IL	SEQ
335.	Compare balanced occlusion, monoplane occlusion and lingualized occlusion.	IL	SEQ/BCQ
336.	Adjust the protrusive, working and balancing contacts on a semi adjustable articulator.	CR	OSCE
337.	Outline the sequence protocol for trial denture	IL/CR	SEQ/BCQ/OSCE
338.	Assess retention and stability of trial denture bases	CR	OSCE
339.	Assess and manage over and under extensions	IL/CR	OSCE
340.	Assess positioning of teeth in relation to neutral zone	CR	OSCE
341.	Verify maxillomandibular relations	IL/CR	OSCE
342.	Outline protocol for improper centric relation	IL/CR	OSCE
343.	Correlate facial and functional harmony with anterior teeth setup.	IL/CR	OSCE
344.	Harmonize anterior teeth with sex, personality and age of the patient.	CR	OSCE
345.	Co-relate the esthetics and incisal guidance	IL/CR	OSCE
346.	Justify the patient acceptance in arrangement of anterior teeth	IL/CR	OSCE
347.	Assess phonetics at try in appointment	IL/CR	OSCE
348.	Appraise the importance of closest speaking space	IL/CR	OSCE/BCQ

349.	Assess closest speaking space	IL/CR	OSCE
350.	Classify different sounds	IL/CR	OSCE/BCQ
351.	Relate different sounds to teeth positioning	IL/CR	OSCE/BCQ
352.	Relate denture base contours with phonetics	IL/CR	OSCE/BCQ
353.	Give instructions at each clinical procedure appointment	CR	OSCE
354.	Retake the maxillomandibular relation if required	CR	OSCE
355.	Assess posterior open bite	CR	OSCE
356.	Enlist causes of posterior open bite at try-in stage		
357.	Stabilize the baseplates for try in procedures	CR	OSCE
358.	Perform the final wax up, carving and festooning in wax.	CR	OSCE
359.	Invest the denture using plaster in a flask.	CR/SGD	OSCE
360.	Apply appropriate separating medium in different stages of flasking and packing.	CR	OSCE
361.	Pack the mold with acrylic resin in its proper stage of setting.	CR	OSCE
362.	Execute trial packing procedure.	CR	OSCE
363.	Use hydraulic and manual press for packing procedures.	CR	OSCE
364.	Cure the dentures in manual water baths.	CR	OSCE
365.	Select appropriate curing cycle considering time restraints and needs.	CR/SGD	OSCE
366.	Deflask the dentures without damage of fracturing.	CR	OSCE
367.	Perform gross and fine finishing of the dentures with correct selection of burs and motor speed chronologically.	CR	OSCE
368.	Polish the dentures.	CR	OSCE
369.	Adjust occlusion according to BULL's rule on the cast and clinically.	CR	OSCE
370.	Critically analyze the final dentures for faults.	IL/CR	OSCE
371.	Eliminate the errors of the basal surface of denture.	CR	OSCE
372.	Outline sequence of insertion protocols for complete dentures.	IL/CR	
373.	Evaluate retention and stability of dentures clinically.	CR	OSCE
374.	Identify pressure areas during insertion using Zinc oxide or pressure indicating paste.	IL/CR	OSCE
375.	Enlist different pressure indicating mediums	IL	OSCE
376.	Interpret pressure indicating paste findings	IL/CR	SEQ/BCQ/OSCE
377.	Eliminate the errors of occlusion in centric relation.	IL/CR	OSCE
378.	Verify the centric relation on insertion.	CR	OSCE
379.	Enlist indications for remounting of dentures	IL	SEQ/BCQ
380.	Give post insertion instructions to the patient.	CR	OSCE
381.	Evaluate the patient at the first post insertion appointment.	CR	OSCE
382.	Outline sequence of post insertion protocol with justification	IL/CR	SEQ/BCQ/OSCE
383.	Devise appropriate treatment for pressure spots, rocking of dentures, over and under extension of flanges.	IL	SEQ/BCQ/OSCE

384.	Determine the factors involved in retention of complete dentures.	IL	BCQ/SEQ
385.	Classify factors of retention	IL	BCQ
386.	Enumerate factors that aid retention in patients with compromised morphology	IL	BCQ
387.	Relate factors of retention with different areas of complete dentures	IL	BCQ
388.	Enumerate factors that enhance stability of complete dentures	IL	BCQ/SEQ
389.	Select patients requiring adjunctive retention through the use of denture adhesives.	IL	BCQ
390.	Rationalize the use of denture adhesives in complete dentures.	IL	BCQ
391.	Enumerate the mode of action of denture adhesives.	IL	BCQ
392.	Enumerate the ideal requirements of denture cleansers	IL	BCQ
393.	Brief regarding the mechanical techniques of cleaning dentures	IL	BCQ
394.	List chemical denture cleansers	IL	BCQ
395.	Outline mechanism of action of denture cleansers	IL	BCQ
396.	Anticipate adverse effects to denture cleansers.	IL	BCQ
397.	Identify macroscopic anatomy of supporting and limiting structures of maxilla clinically and on cast.	IL/CR	OSCE
398.	Identify macroscopic anatomy of supporting and limiting structures of maxilla clinically and on cast.	IL/CR	OSCE
399.	Identify muscles dictating sulcus depth in various oral regions pertaining to denture flanges.	IL/CR	BCQ/OSCE
400.	Recognize the effect of modiolus on denture stability.	IL/CR	BCQ/OSCE
401.	Apply muscle actions on oral and paraoral influences to denture function.	IL/CR	BCQ/OSCE
402.	Select appropriate preliminary impression material for different oral conditions.	CR	OSCE
403.	Apply factors of retention in complete denture construction.	IL/CR	BCQ/OSCE
404.	Manage a diseased oral cavity for impressions.	IL/CR	BCQ/OSCE
405.	Record Preliminary Impression for Edentulous Patient using alginate and composition by apply general principles and objectives of impression making.	CR	OSCE
406.	Select appropriate gypsum product for pouring impressions of different nature.	CR	OSCE
407.	Pour an impression using soft and hard plaster.	CR	OSCE
408.	Compare different impression Techniques according to residual ridge and material.	IL/CR	SEQ/BCQ/OSCE
409.	Select appropriate impression technique according to anatomical factors of residual ridge.	IL/CR	SEQ/BCQ/OSCE
410.	Design custom tray according to the selected impression technique	IL/CR	SEQ/BCQ/OSCE
411.	Construct a custom tray for secondary impression using self-cure acrylic resin for different impression techniques.	CR	OSCE
412.	Refine a custom tray.	CR	OSCE

413.	Select a method of reducing pressure on soft tissues through custom tray.	IL/CR	BCQ/OSCE
414.	Select appropriate final impression material and method of border molding and wash impression as per the impression technique utilized.	IL/CR	BCQ/OSCE
415.	Perform border molding procedure with green stick.	CR	OSCE
416.	Outline procedure of one step border molding with polyether impression material.	IL	SEQ
417.	Record Final Impression for edentulous patient considering the oral and para oral musculature and oral physiology.	CR	OSCE
418.	Correlate the anatomical landmarks seen clinically with an impression.	CR	OSCE
419.	Justify the use of Boxing-In technique.	IL/CR	BCQ/OSCE
420.	Identify favorable and unfavorable posterior palatal form for posterior palatal seal.	CR	OSCE
421.	Mark anterior and posterior vibrating line clinically.	CR	OSCE
422.	Carve post dam area on the master cast.	CR	OSCE
423.	Select appropriate special impression technique for variants in mucosal topography.	IL/CR	SEQ/BCQ
424.	Outline steps of special impression techniques for different conditions	IL	SEQ
425.	Rationalize the use of special impression techniques according to given oral condition.	IL	SEQ/BCQ
426.	Give instructions for both open and closed mouth impression techniques.	CR	OSCE
427.	Identify impression errors.	CR	OSCE
428.	Rectify impression errors.	CR	OSCE

ACADEMIC SCHEDULES

Weekly schedule of Module X (Endodontic) Operative Dentistry			
Week no.	**Lecturer 1**	**Lecturer 2**	**Lecturer 3**
W/1	Pulp system-1 **LO (1-6)**	Classification of pulp & Periapical diseases **LO (24-32)**	Pulp system-2 **LO (7-11)**
W/2	Iatrogenic effects on the pulp **LO (12)**	Perio-endo lesions **LO (33-35)**	Vital pulp therapies **LO (14-15)**
W/3	Apexogensis **LO (16-17)**	Diagnosis of pulp & periapical lesions **LO (36-40)**	Endodontic infection **LO (20-23)**
W/4	Apexification & revascularization **LO (19)**	Class Test **LO(24-40)**	Isolation in endodontic **LO (53)**
W/5	Class Test **LO (1-19)**	Treatment of endo-dontic emergencies **LO (41)**	Endodontic Access & length determination **LO (54-56)**
W/6	Cleaning& shaping of canal **LO (57-59)**	Endodontic instruments **LO (42)**	Class Test **LO(20-23, 53-56)**
W/7	Step back and crown down techniques **LO (60-66)**	Endodontic radiology **LO (43-50)**	Obturation materials **LO(67-68)**
W/8	Obturation techniques **LO (69-70)**	Endodontic anesthesia **LO (51-52)**	Endodontic mishaps **LO (71)**
W/9	Class Test **LO (57-70)**	Endodontic surgery-1 **LO (74-75)**	Endodontic outcome **LO (77)**
W/10	Non-surgical retreatment **LO (72-73)**	Endodontic surgery-2 **LO (76)**	Class Test **LO (71-77)**
W/11	Classification of Longitu-dinal tooth fracture **LO (78-79)**	Class Test **LO (41-52)**	Vertical root fracture **LO (80)**
W/12	Class Test **LO (78-80)**	Revision	**R**evision
W/13	**Theory Examination**		
W/14	**OSCE & Viva Examination**		

Weekly schedule of Module X Orthodontics		
Week no.	**Lecturer 1**	**Lecturer 2**
Week – 1	Introduction to Orthodontics (81-83)	Anatomy of head and neck (84)
Week – 2	**GROWTH** Growth theories I (85-94)	Growth theories II (85-94)
Week – 3	• Types of bone growth • Fields, sites and centers (90)	Arch development (97)
Week – 4	**PRESENTATIONS** Arches pouches, face, tongue, palate, teeth, cranial vault	Mandibular growth (95,96)
Week – 5	Maxillary growth (95,96)	Growth rotations1 (98-100)
Week – 6	Growth rotations II (98-100)	Age determination (113,138-140)
Week – 7	Assessment	Age changes
Week – 8	Development of dentition and occlusion I (101-103, 112)	Development of dentition and occlusion II (101-103,114,162-168)
Week – 9	Occlusion I (101,117,119-123)	Occlusion II (125-129)
Week –10	Occlusion III (130-131,133,152)	IOTN
Week -11	Assessment	Syndromes Presentations I (135-137)
Week -12	Syndromes Presentations II (135-137)	Revision
Week -13	**Theory Examination** **OSCE & Viva Examination**	
Week - 14		

Weekly schedule of Module X OMFS		
Week	**Lecture 1**	**Lecture 2**
Week – 1	History taking & Pre-operative Evaluation LO: 175, 177	General Anesthesia and pre-surgical assessment LO: 169, 171
Week – 2	Conscious Sedation LO: 170	Local Anesthesia assessment and technique LO: 169, 171, 172
Week – 3	Complications of Local Anesthesia LO: 171	CBL/PBL Case presentation
Week – 4	Management of Acute Post-operative Pain LO: 195	Oro-Facial Pain & Management LO: 196, 197
Week – 5	Principles of Basic Flap design LO: 173, 174	Principles of Basic Flap design LO: 173, 174. 176
Week – 6	Cross infection control & Sterilization LO: 180-182	**Class test**
Week – 7	Prevention of Medical Emergencies in Dental office LO: 178	Prevention of Medical Emergencies in Dental office LO: 178, 179
Week – 8	Management of Medical Emergencies in Dental office LO: 179	Basic & Complex Pre-prosthetic Surgery & Dentoalveolar LO: 190, 191
Week – 9	Basic & Complex Pre-prosthetic Surgery & Dentoalveolar LO: 192	Principles of Exodontia LO: 183-185
Week – 10	Complex Dentoalveolar Surgery LO: 186-188	Post-operative pain and complications LO: 189
Week -11	Class test	Principles of Endodontic Surgery (Apicectomy) LO: 193-194
Week -12	Revision	Revision
Week – 13	**THEORY EXAM**	
Week – 14	**OSCE & Viva Examination**	

Weekly Schedule for Mod X Prosthodontics – Edentulism/Conventional Complete Dentures			
Week	**Lecture 1**	**Lecture 2**	**Lecture 3**
1.	Biomechanics of (198-09)	Aging (213-15)	Nutrition care (221-26)
2.	Residual ridge resorption (216-20)	Sequelae of complete dentures (227-43)	**Test**
3.	Treatment Planning – Edentulous Arches (244-45,247-251)	Treatment Planning – Diagnostic Records 252-56)	Treatment Planning – Case selection (246,257)
4.	Mouth Preparation – Inflammed tissues (258-63)	Applied Anatomy – Landmarks and Limiting structures (264-67)	**Test – Applied Dental Materials** (268-270)
5.	Primary impressions and custom tray (397-407)	Secondary impressions (408-422)	Retention in complete dentures (384-87)
6.	Special Impression techniques (423-28)	Posterior palatal Seal, Baseplates and occlusal rims (271-283)	**Presentations - Diagnosis**
7.	Maxillomandibular relations – Orientation relation (284-87)	Maxillomandibular relations – Vertical relation(288-98)	Maxillomandibular relations – Horizontal relation (299-306)
8.	Articulators and Articulation (307-10)	**Test – Impressions and MMR**	Artificial Tooth selection (311-13)
9.	Artificial tooth arrangement – Anterior (314-321)	Artificial tooth arrangement – Posterior (322-328)	Occlusion –I (429-44)
10.	Complete denture occlusion –I (329-31)	Complete denture occlusion – II (332-36)	Try-In appointment (337-46,353-57)
11.	Phonetics (347-52)	Delivery of Dentures (370-80)	Post insertion Management (381-383)
12.	Gerodontology intro(210-12)	Denture Adhesives (389-91)	Denture cleansers (392-96)
13.	**THEORY EXAM**		
14.	**OSCE & Viva Examination**		

MODULE XI (Restorative Dentistry, Orthodontic diagnosis, Infections and Diseases, Partial Dentulism)

At the end of the module, students should be able to:

S.No	Learning Objectives	Teaching strategy	Assessment tool
	OPERATIVE DENTISTRY		
1.	Define Dental Caries	IL	BCQs (one best)
2.	Recall carious lesions according to GV. Black	IL	BCQs(one best)
3.	Memorize Graham Mount Classification	IL	BCQs/SEQs
4.	Debate causes of dental caries	IL/CBL	BCQs/SEQs
5.	Summarize caries risk factors	IL/CBL	BCQs/ VIVA
6.	Classify Dental caries by ICDAS	IL/CBL	BCQs/SEQs
7.	Perform clinical examination and diagnosis of dental caries	IL/SGD/ CBL	OSCE
8.	Know new tools for caries detection	IL	BCQs/SEQs
9.	Plan risk based caries management	IL/SGD	BCQs/SEQs
10.	Explain preventive treatments for dental caries	IL/CBL	BCQs/SEQs/ VIVA
11.	Apply noninvasive treatments for dental caries	IL/CBL	BCQs/SEQs/ VIVA
12.	Discuss the risk factors for root caries	IL	SEQs
13.	Apply preventive and restorative treatment for root caries	IL/CR	SEQs
14.	Use NICE guidelines for patient recall interval	IL	SEQs
15.	Know the importance of dental record	IL	BCQs
16.	Identify Instruments used in restoration	CR	OSCE
17.	Apply method of isolation in restorative dentistry	IL/SGD	OSCE
18.	Review the composition of amalgam	IL	BCQs/SEQs
19.	Establish the significance of gamma-2 phase	IL	BCQs/ VIVA
20.	Know the advantages and disadvantages of amalgam	IL	BCQs/SEQs
21.	Distinguish between different types of amalgam according to their composition and shape	IL	BCQs
22.	Apply principles of cavity preparation for Class I, II,& V amalgam restorations	CR/SGD/CA	BCQs/SEQs /OSCE
23.	Describe complex restorations for amalgam	IL	BCQs

24.	Perform Nayyar core and compo core	IL/CR	BCQs /VIVA
25.	Execute accessory means of retention	IL/CR	BCQs/ VIVA
26.	Memorize significance of amalgam bonding	IL/CR	BCQs/SEQs
27.	Differentiate between cavity liners, sealers and bases	IL/SGD	SEQs/OSCE/SC
28.	Apply lining to protect the pulpal floor of the cavity	CR	OSCE
29.	Explain different steps of amalgam placement	SGD/CR	OSCE/SC
30.	Execute finishing and polishing of amalgam restorations	SGD/CR	BCQs/SEQs /OSCE/SC
31.	Rewrite mercury hazards and describe its hygiene	IL/CR	SEQs
32.	Discuss methods of Sterilization and Disinfection	IL/CR	BCQs/SEQs
33.	Describe Adhesive Dentistry	IL	BCQs
34.	State the Principles of Adhesion to enamel & dentine	IL	BCQs/SEQs
35.	Explain the process of etching to enamel and dentine	IL	BCQs/SEQs/ OSCE
36.	Enumerate the factors affecting adhesion to enamel and dentine	IL	SEQs/ VIVA
37.	Classify bonding systems	IL	BCQs/SEQs
38.	Argue dry and wet bonding	IL	BCQs/SEQs
39.	Memorize composition of dental composites	IL	BCQs
40.	Execute clinical steps for Class III & Class IV for resin composite restorations	IL/CR	BCQs/SEQs/ OSCE
41.	Explain advantages & disadvantages of posterior composite as a restorative material	IL	BCQs/SEQs
42.	Describe the indications of posterior composite	IL	BCQs/SEQs
43.	Perform fissure sealant application	IL/CR/SGD	BCQs
44.	Use of preventive resin restoration technique	IL/CR/SGD	BCQs/SEQs
45.	Distinguish between fissure sealant and preventive resin restorations	IL	BCQs/SEQs/ VIVA
46.	Perform placement of posterior composite restoration in Class I, II	IL/CR	OSCE
47.	Establish tight proximal contact for posterior composite restoration	IL/CR	OSCE
48.	Recognize the importance of C-factor	IL	BCQs/SEQs
49.	Know how to decrease C-factor to improve longevity of composite restoration	IL/CR	BCQs/SEQs/ OSCE

50.	Apply various matrix systems for Class II, III, IV	IL/Skill Lab	OSCE
51.	Explain the principles behind bonded based and snow plough techniques	IL	BCQs/SEQs/ VIVA
52.	Identify the instruments and materials used for finishing and polishing of composite restorations	IL/CR	OSCE
53.	Perform finishing & polishing of composite fillings	IL/SGD/CR	OSCE
54.	List the etiology of non-carious cervical lesions	IL	BCQs/SEQs
55.	Use different restorative materials for non-carious cervical lesions	IL/CR	OSCE
56.	State the causes of discoloration	IL	BCQs/SEQs
57.	Enlist the Indications and contraindications of bleaching	IL	BCQs/SEQs
58.	Know the mode of action of bleaching agent	IL	BCQs/SEQs
59.	Plan bleaching of endodontically treated teeth	IL	BCQs/SEQs
60.	Explain bleaching of vital teeth	IL	BCQs/SEQs
61.	Factors affecting both the in-office and at-home bleaching	IL	BCQs/SEQs
62.	Propose the procedure of microabrasion and macroabrasion	IL	BCQs/SEQs/ OSCE
63.	Write down the indications of veneers	IL	SEQs
64.	Enlist materials used for veneers	IL	SEQs
65.	Demonstrate tooth preparation for veneers	IL/CR	OSCE
66.	Distinguish between inlay and on lay	IL	BCQs/SEQs
67.	Perform tooth preparation of inlay and on lay	IL/CR	BCQs/SEQs/ OSCE
68.	Execute cementation of inlay and on lay	IL	BCQs
69.	Discuss the core materials	IL/CR	BCQs/SEQs
70.	Discuss the indications of dental posts	IL/CR	BCQs/SEQs
71.	Describe designs of dental posts and types	IL/CR	BCQs/SEQs/ OSCE/ VIVA
72.	Perform preparation of dental post in canal	IL/CR	BCQs/SEQs/ OSCE
73.	Execute cementation of post in canal of tooth	IL/CR	BCQs/SEQs OSCE
74.	Discuss mechanical and chemomechanical methods of fluid control	IL	BCQs/SEQs
75.	Summarize steps of placement of retraction cord	IL/CR	BCQs/SEQs

76.	Recommend the use of CAD/CAM in dentistry	IL	BCQs/SEQs/ OSCE
ORTHODONTICS			
77.	Enlist various diagnostic aides before starting orthodontic treatment	IL /CR	OSCE/ SEQ
78.	Discuss the importance of the diagnostic aides for the treatment planning	IL	CQ
79.	Differentiate between diagnosis and problem list of a case	IL/ CR	OSCE
80.	Formulate the problem list of the patient before the treatment	CR/ CBL	OSCE
81.	execute problem oriented approach for diagnosis and treatment planning	CR / CBL	OSCE
82.	List the treatment options for a particular patient based on the problem list and diagnosis	CBL /CR	OSCE /SEQ
83.	Design a comprehensive list of patient's pathological and developmental problems, maximizing the benefit to the patient	CR	OSCE
84.	Recognize what is esthetics, and describe the importance of achieving esthetics at the end of treatment	IL	OSCE /BCQ
85.	Recite the terms micro, mini and macro esthetics	IL / CR	OSCE
86.	Identify the problems with micro mini and macro esthetics in a patient	CR /CBL	OSCE
ORTHODONTICS / OPERATTIVE			
87.	Define what is golden proportion	IL /CBL/ CR	OSCE
88.	Identify if the golden proportion is achieved in an occlusion at the end of treatment	CR/CBL	OSCE
ORTHODONTICS			
89.	Quote terminologies that will be used during examinations, problem list making and while carrying out the treatment	IL /CR	OSCE
90.	Recognize various terms used to describe malocclusion, so as to have a better understanding of the condition when the problems regarding it are being discussed	IL /CR	OSCE
91.	Recognize the importance of various classifications	IL	CQ
92.	Recognize the short comings of various classifications	IL	CQ
93.	Relate medical problems with resulting malocclusions	IL /CP	OSCE/ SEQ
94.	Indicate what protocols will change in Orthodontic treatment while dealing with medically compromised patients	IL / CBL	OSCE

95.	Relate the syndromes that lead to malocclusions	CP	SEQ /OSCE
96.	Determine the etiological factors for a certain malocclusion	IL	SEQ / OSCE
97.	Recognize the impact of hereditary influences on a malocclusion	IL	BCQ
98.	comprehend how various environmental factors lead to a certain malocclusions	IL	BCQ /OSCE
99.	Recall the normal anatomy and physiology of dentition and surrounding structures	IL	CQ
100.	Write the theories on how tooth eruption will occur	IL	SEQ
101.	Summarize the basic biological process that occurs in bone due to the forces applied to teeth for Orthodontic tooth movement	IL	SEQ
102.	Define what is optimum force, and understand its importance	IL	OSCE
103.	Quote and write the optimum amount of forces that can be applied for tooth movement	IL	OSCE
104.	Write and quote the side effects that can occur if the Orthodontic force is less or exceeds the normal limits	IL	SEQ/ BCQ
105.	Quote the importance of different force durations on tooth movements during orthodontic treatment	IL	SEQ/ BCQ
106.	Define what is anchorage	IL	OSCE
107.	Quote and identify the importance of anchorage while carrying out orthodontic tooth movement	IL /CBL	OSCE/BCQ
108.	Discuss and predict how anchorage can be increased in a case	IL/ CBL	OSCE
109.	Discuss and write the effects on treatment if anchorage is not maintained	IL	CQ
110.	Enlist different materials used for orthodontic treatment and discuss their properties	IL	SEQ
111.	Discuss the properties of each material used in Orthodontic treatment	IL	SEQ/BCQ
112.	Identify which wire should be used at which stage of treatment	IL	OSCE
113.	Quote and discuss the properties of an ideal wire	IL	SEQ /BCQ
114.	Differentiate between banding and bonding	IL	OSCE
115.	Quote and enlist the indications of banding	IL	OSCE /BCQ
116.	Identify the conditions when banding is preferred over	IL	BCQ/ OSCE

	bonding		
117.	Quote the importance of correct bonding in a orthodontic case	IL	OSCE
118.	Quote the three order bends given in a wire	IL	OSCE
119.	Discuss the concept of straight wire appliance	IL	CQ
120.	Quote the importance of straight wire appliance	IL	CQ
OMFS			
121.	Odontogenic Infection		
122.	Differentiate between abscess and cellulitis	IL/CR	BCQ/SEQ
123.	Compare both specific and non-specific infections involving facial spaces	IL	BCQ/CQ
124.	Enumerate the principles of management of Odontogenic Infection	IL	SEQ
125.	Identify complex odontogenic infections	IL/CBL	BCQ/SEQ
126.	State the management of Ludwig's angina	IL/CBL	SEQ
127.	Identify potential spaces for spread of infection	IL	BCQ/CQ
128.	Recall the importance of antibiotic in managing Oral infections	IL	BCQ
129.	Discuss the treatment options with the patient like incision and drainage augmented with antibiotic therapy and follow ups	IL/SGD	BCQ
130.	Evaluate clinical, imaging and laboratory findings associated with Oral & Maxillofacial pathology including mucosal and malignant lesions	IL	BCQ/CQ
131.	Apply diagnostic and therapeutic options for the management of Oral infections and pathology	IL/SGD	OSCE
132.	Diseases of Maxillary Sinus		
133.	Identify Maxillary antrum diseases on the basis of clinical and radiographic findings.	IL	BCQ
134.	Investigate maxillary antrum diseases via periapical and panoramic radiographs	IL	BCQ
135.	Enlist management and complications of maxillary sinus that may occur during dentoalveolar surgical procedures like Oroantral Communication and Oroantral Fistula	IL/CR	BCQ
136.	Salivary Gland Disorders		
137.	Recall the anatomy of major salivary glands	IL	BCQ

138.	Classify disorders of Salivary gland	IL	BCQ
139.	Enumerate diagnostic tools used for detection of Salivary gland diseases	IL	BCQ/SEQ
140.	Recall the diseases of Salivary Glands which comprises of sialolithiases, Mucocele, Ranula, Sialadenitis, Nectrotizing Sialometaplasia, Sjogren syndrome to develop differential diagnosis with treatment options	IL/CBL	BCQ/CQ
141.	Identify the tumors of salivary glands both Benign and Malignant along with means of investigation, diagnosis and treatment plan	IL	BCQ/SEQ
142.	Cyst and Tumors of the Jaw		
143.	Define & classify cysts and tumors of the head and neck region.	IL	SEQ
144.	Develop differential diagnosis for Oral & Maxillofacial pathology	IL	SEQ/OSCE
145.	Enlist clinical, radiographic and laboratory investigations of various oral diseases along with oral manifestations of systemic diseases.	IL	SEQ
146.	Enlist the histological and radiographic features of different cysts and tumors	IL	BCQ
147.	Formulate differential diagnosis and devise management plan for removal of cysts and tumors	IL/CBL	BCQ/SEQ
OPERATIVE/ OMFS / ORTHODONTICS			
148.	Dental Radiology		
149.	Define Radiograph	IL/CR	BCQ
150.	Enumerate various radiographs used in Dentistry	IL/CR	OSCE
151.	Define & distinguish terminologies used in Dental radiology	IL/CR	BCQ
152.	Use the terms radiopaque and radiolucent correctly	IL/CR	OSCE
153.	Explain the principles of Imaging	IL	BCQ/CQ
154.	Enumerate the components of X-ray units and X-ray tube	IL/CR	BCQ/CQ
155.	Describe the factors influencing the size, shape and quality of the X-ray beam	IL/CR	BCQ/CQ
156.	Differentiate between normal anatomical structures and artifacts	IL/CR	OSCE/CQ
157.	Identify the basic components of Digital Imaging system	IL/CR	BCQ/CQ
158.	Describe the Imaging principles and special terminologies associated with cone beam CT Imaging	IL/CR	BCQ

159.	Enlist the advantages and disadvantages of cone beam CT & identify different axis	IL/CR	BCQ
160.	Draw a flow chart showing sequence of steps involved in producing a radiograph from exposure to X-rays to mounting	CR	BCQ
161.	Identify various intra-oral and extra-oral radiographic techniques used in OMFS along with its use	IL/CR	BCQ/OSCE
162.	Enlist the indications of different radiographs	IL	BCQ/OSCE
163.	Identify the dental and skeletal structures in different radiographs	IL	OSCE
164.	Identify the side effects of this diagnostic modality	IL	BCQ/CQ
165.	Apply Principle of ALARA	IL/CR	BCQ
166.	Demonstrate and apply positioning technique of periapical radiograph	CR	BCQ
167.	Compare paralleling and bisecting angle technique	IL/CR	BCQ
168.	Discuss indications of occlusal radiograph	IL	BCQ
169.	Perform technique of occlusal radiograph	IL	BCQ
170.	Demonstrate bitewing radiograph technique	CR	OSCE
171.	Apply SLOB rule	IL	BCQ
172.	Understand advantages of OPG	IL	BCQ
	OMFS		
173.	Malignant Disorders		
174.	Enumerate the potentially malignant disorders of the oral cavity along with its diagnosis and management	IL/CR	BCQ/OSCE
175.	Recall and describe diagnostic and therapeutic treatment options for Oral & Maxillofacial pathology including biopsy techniques, surgery, chemotherapy and radiation.	IL/CR	BCQ
176.	Learn to manage patients in Dental OPDs, undergoing radiation	IL	BCQ
177.	Interpret the biopsy report and manage the patient accordingly	IL	SEQ
178.	Maxillofacial Trauma		
179.	Describe the technique and significance of Basic Life support and Advanced trauma life support in Head and Neck Trauma	IL	SEQ
180.	Record history of the patient with trauma and examine clinically by carrying out investigations	IL/CR	SEQ/CP

181.	Learn the basic principles of diagnosis and management of Dentoalveolar injuries.	IL	BCQ/SEQ
182.	Examine and interpret types of facial fractures following first line of treatment keeping in consideration the complications that might occur	IL	BCQ/SEQ
183.	Describe maxillofacial injuries in children and elderly	IL	BCQ
184.	Investigate, diagnose and devise management of Mandibular fractures, Zygomatic complex fractures, Orbital trauma, midfacial injuries, Nasal, Naso-orbitoethmoidal and frontal sinus injuries	IL	SEQ
PROSTHODONTICS			
185.	Differentiate between support, stability and retention abutments and retainers undercut and angle of cervical convergence precision attachment and retainer anatomic impression and functional impression	IL	BCQ
186.	Interpret consequences of tooth loss	IL	BCQ
187.	Rationalize the need of prosthesis	IL	BCQ
188.	Identify the types of prosthodontics treatment modalities.	IL	BCQ
189.	Identify partial dentulism according to Kennedy's Classification	IL	BCQ
190.	Apply Applegate's rules on different dentate states.	IL	BCQ
191.	Enumerate the need for classifications systems.	IL	BCQ
192.	Categorize different partially dentate states according to support foundation.	IL	BCQ
193.	Record a comprehensive history of a partially dentate prosthodontics patient.	CR	OSCE
194.	Perform extra oral and intraoral examination on a partially dentate patient.	CR	OSCE
195.	Enumerate examination protocol specific for abutment selection.	IL	SEQ
196.	Prescribe basic investigations like periapical and OPG radiographs pertaining to partial dentulism.	CR	OSCE
197.	Make diagnostic impressions with alginate impression material.	CR	OSCE
198.	Identify the need of impression tray modification.	CR	OSCE
199.	Identify problems in alginate impressions with reasons.	CR	OSCE
200.	Manage a patient with an exaggerated gag reflex.	CR	OSCE

201.	Rationalize the need of diagnostic maxillomandibular relation in different partially dentate states.	CR/CBL	BCQ
202.	Analyze diagnostic casts.	CR	OSCE
203.	Correlate the radiographic findings with clinical findings.	CR	OSCE
204.	Interpret the diagnostic data garnered through history, examination and investigations.	CR/CBL	OSCE
205.	Identify favorable findings for an abutment of fixed partial denture.	IL/CBL	SEQ/OSCE
206.	Formulate a differential and a definitive diagnosis.	CR/CBL	BCQ/SEQ/OSCE
207.	Refer a patient to appropriate specialist.	CR	OSCE
208.	Write a referral.	CR	OSCE
209.	Identify general and local factors regarding prognosis of fixed/removable partial dentures.	CBL	SEQ/BCQ/OSCE
210.	Counsel the patient regarding consequences of tooth removal without replacement.	CR	OSCE
211.	Identify patient needs.	CR	OSCE
212.	Formulate treatment options in relation to patient needs.	CR/CBL	OSCE
213.	Devise a treatment plan keeping in view the diagnostic data, financial and social background, time frame, patient's attitude, behavior and motivation.	CBL	OSCE
214.	Communicate the diagnosis and treatment options to the patient in an appreciable manner.	CR	OSCE
215.	Write a patient record note.	CR	OSCE
216.	Recall the factors involved in designing fixed partial denture.	IL/CBL	
217.	Employ Ante's law in designing fixed partial denture	IL/CBL	
218.	Apply the role of muscles of mastication, movements of the mandible and occlusion in designing fixed partial dentures.	IL/CBL	
219.	Choose appropriate treatment modality according to number of teeth missing, uses, clinical requirements and material with justification.	IL/CBL	SEQ/BCQ/OSCE
220.	Justify the prescription of removable partial denture	IL/CBL	SEQ/BCQ/OSCE
221.	Set out priority during treatment.	IL/CBL	BCQ
222.	Execute treatment sequence with regard to periodontal status of the patient.	IL/CBL	BCQ
223.	Outline sequence protocol of mouth preparation procedures.	IL/CBL	SEQ/BCQ
224.	Indicate the use of surgical procedures before instituting removable partial dentures.	IL/CBL	BCQ

225.	Devise a management plan for a patient presenting with abused and irritated tissue.	IL/CBL	BCQ
226.	Prescribe basic treatment for periodontal problems.	IL/CBL	OSCE
227.	Devise treatment strategy for a patient with old dentures till the time of definitive treatment	IL/CBL	OSCE
228.	Differentiate between major connector and minor connector.	IL	SEQ/BCQ
229.	Enlist the basic requirements of major connectors.	IL/CBL	SEQ/BCQ
230.	Discuss the functions of major connectors	IL/CBL	SEQ
231.	Explain the basic types of mandibular and maxillary major connectors.	IL/CBL	SEQ
232.	Outline the guidelines related to location of connectors in the oral cavity.	IL/CBL	SEQ/BCQ
233.	Correlate the uses of different major connectors in various clinical scenarios.	IL/CBL	SEQ/BCQ
234.	Describe the design characteristics of major connectors.	IL/CBL	SEQ/BCQ
235.	Select appropriate major connector for the given case		SEQ/BCQ
236.	Design major connectors.	CR	OSCE
237.	Appraise the role of major connectors in bracing a cast partial denture	IL	BCQ
238.	Define minor connector.	IL	BCQ
239.	Enumerate the functions of minor connectors.	IL	BCQ
240.	Delineate the principles of design of minor connectors.	IL	BCQ
241.	Classify minor connectors	IL	SEQ/BCQ
242.	Appraise the role of proximal plate minor connector in minimizing forces on abutment	IL/CBL	BCQ
243.	Enumerate the considerations for designing minor connectors	IL/CBL	BCQ
244.	Appraise the role of minor connectors in bracing a cast partial denture	IL	BCQ
245.	Distinguish between rest and rest seat.	IL	SEQ/BCQ
246.	Delineate the functions of rests.	IL	SEQ/BCQ
247.	Differentiate between the different types of rests and rest seats in relation to their form and location.	IL	SEQ/BCQ
248.	Prescribe variations of rests in regard to function.	IL/CBL	SEQ/BCQ
249.	Select a rest design according to the given case	IL/CBL	SEQ/BCQ
250.	Outline the guidelines for support of rests.	IL	SEQ/BCQ
251.	Define direct retainers.	IL	SEQ/BCQ
252.	Classify types of direct retainers.	IL	SEQ/BCQ
253.	Select a clasp design according to tooth and tissue factors	IL/CBL	SEQ/BCQ

	with justification		
254.	Enlist parts of a clasp assembly.	IL	SEQ
255.	Distinguish between parts of clasp assembly in regard to retention, support, stability and reciprocation.	IL	SEQ/BCQ
256.	Relate height of contour, supra bulge and infrabulge areas for retentive clasps.	IL	BCQ
257.	Interpret the structural and material characteristics of clasps in regard to retentive potential.	IL	SEQ/BCQ
258.	Associate retentive factors of clasps with tooth factors	IL	SEQ/BCQ
259.	Outline the basic principles governing clasp design.	IL	SEQ/BCQ
260.	Select a clasp assembly design according to different clinical scenarios.	IL/CBL	SEQ/BCQ
261.	Justify the use of flexible clasp assembly system in free end saddle cases	IL/CBL	BCQ
262.	Justify the use of reciprocation principle in clasp assembly	IL	BCQ
263.	Differentiate between bracing and reciprocation	IL	BCQ
264.	Indicate the use of internal attachments in partially dentate arches.	IL	BCQ
265.	Enumerate simple mechanics of lever, pulley, wedge, inclined plane, screw and wheel in removable partial dentures.	IL	BCQ
266.	Correlate concepts of fulcrum, effort and resistance in lever principle.	IL	BCQ
267.	Relate the movement of the removable partial denture to lever principle.	IL	BCQ
268.	Isolate the components of removable partial dentures that provide resistance against different prosthesis movements	IL	BCQ
269.	Define indirect retainers	IL	SEQ/BCQ
270.	Appreciate the role of indirect retainers in control of the prosthesis movement	IL	SEQ/BCQ
271.	Comprehend the factors influencing effectiveness of indirect retainers	IL	SEQ/BCQ
272.	Outline the functions of indirect retainers	IL	SEQ/BCQ
273.	Enumerate the forms of indirect retainers	IL	SEQ/BCQ
274.	Anticipate changes in denture base design for tooth tissue supported prosthesis.	IL	SEQ/BCQ
275.	Appraise the use of a functionally stable prosthesis.	IL	SEQ/BCQ
276.	Infer the effect of forces acting on the dentures.	IL	SEQ/BCQ
277.	Differentiate between tooth supported and tooth tissue supported dentures	IL	SEQ/BCQ

278.	Outline steps in devising partial denture design	IL	SEQ
279.	Evaluate potential support of abutment teeth and residual ridge	IL	SEQ
280.	Relate the design of proximal plate minor connector to support mechanism.	IL/CBL	SEQ/BCQ
281.	Relate the use of a flexible clasp assembly system in free end saddle cases	IL/CBL	SEQ/BCQ
282.	Design components for a removable partial denture.	IL/CBL	SEQ/BCQ
283.	Enumerate techniques for enhancing support in distal extension bases.	IL/CBL	SEQ
284.	Associate the use of guiding planes to path of insertion and removal.	IL	BCQ
285.	Define denture bases	IL	SEQ
286.	Enumerate the ideal requirements of denture bases.	IL	SEQ
287.	Relate denture base requirements to support mechanism of removable partial denture.	IL/CBL	SEQ/BCQ
288.	Differentiate between metal and acrylic resin denture bases.	IL	SEQ/BCQ
289.	Outline the functions of denture bases in control of prosthesis movement.	IL	SEQ/BCQ
290.	Explain methods of attaching acrylic denture bases to metal framework.	IL	BCQ
291.	Define surveyor and surveying.	CR/SGD	BCQ
292.	Describe a dental surveyor	CR/SGD	BCQ/OSCE
293.	Identify parts of a surveyor	CR/SGD	OSCE
294.	Justify the process of surveying	CR/SGD	BCQ/SEQ
295.	Differentiate between diagnostic and definitive surveying.	CR/SGD	BCQ/SEQ
296.	Recognize the factors determining the path of placement.	CR/SGD	BCQ
297.	Outline sequence protocol of surveying.	CR/SGD	BCQ/SEQ
298.	Perform surveying on a partially dentate cast in all planes.	CR	OSCE
299.	Interpret changes in factors determining the path of placement in different planes of surveying.	CR	OSCE
300.	Sketch required mouth preparations and proposed design of removable partial denture	CR	OSCE
301.	Measure retention on the cast.	CR	OSCE
302.	Record relation of the cast to surveyor.	CR	OSCE
303.	Design a cast partial denture by applying knowledge of components	CR	OSCE
304.	Defend the need for blocking out and relieving the master cast.	IL	BCQ

305.	Select materials for blocking and relieving the master cast.	IL	BCQ
306.	Differentiate between different block out techniques.	IL	BCQ
307.	Classify abutment teeth for removable partial dentures.	IL	BCQ
308.	Outline sequence of abutment preparations on sound enamel or existing restorations.	IL/CBL	SEQ/BCQ
309.	Discuss variations for abutment tooth preparation procedures in regard to conservative restorations, crowns, veneer crowns and ledge formation.	IL/CBL	BCQ
310.	Prepare guide planes on a plastic tooth.	CR	OSCE
311.	Perform conventional rest seat preparation on a plastic tooth (premolar and a molar)	CR	OSCE
312.	Relate stresses on isolated abutments with partial denture design.	IL	BCQ
313.	Select an impression material in different partially dentate conditions.	IL/CBL	SEQ/BCQ
314.	Pour a cast.	CR	OSCE
315.	Identify inaccurate or weak cast.	CR	OSCE
316.	Rationalize the need for making individual trays.	IL/CBL	SEQ/BCQ
317.	Construct individual trays.	CR	OSCE
318.	Justify the use of special impression techniques for distal extension base partial dentures.	IL/CBL	SEQ/BCQ
319.	Interpret the factors influencing support of a distal extension base.	IL/CBL	SEQ/BCQ
320.	Distinguish between anatomic and functional form of residual ridge.	IL/CBL	SEQ/BCQ
321.	Make an impression using composition and alginate for distal extension bases.	CR	OSCE
322.	Delineate methods for obtaining functional support for distal extension base	IL/CBL	SEQ/BCQ
323.	Outline clinical and laboratory steps of fabrication for cast partial dentures.	IL	BCQ
324.	Explain the duplication of cast, waxing of removable partial denture, spruing, investing, burn out, casting and finishing procedures.	IL	BCQ
325.	Rationalize duplication of casts for fabrication of dentures.	IL	BCQ
326.	Identify different stages of laboratory procedures	IL	OSCE
327.	Sort laboratory procedures in the proper sequence	IL	OSCE
328.	Select a method for establishing occlusal relationships according to different partially dentate conditions.	IL	BCQ
329.	Record occlusal relationships in partially dentate	CR	OSCE

	individuals.		
330.	Define overjet, overbite, buccal overlap, centric relation, centric occlusion, maximum intercuspation, curve of spee and curve of monsoon	IL	BCQ
331.	Enumerate desirable occlusal contact relationships for removable partial dentures.	IL	BCQ
332.	Perform the process of acrylic processing, finishing and polishing the dentures.	CR	OSCE
333.	Explain the methods for adjusting the bearing surfaces of denture bases.	IL	BCQ
334.	Adjust acrylic removable partial dentures in patient's mouth.	CR	
335.	Identify common pressure areas encountered.	IL/CR	BCQ
336.	Outline sequence protocol for fitting of framework in the oral cavity.	IL	BCQ
337.	Enumerate methods for adjusting occlusion.	IL	BCQ
338.	Justify the need of relining removable partial dentures.	IL	BCQ
339.	Enumerate disinfection protocols for impressions and removable prosthesis.	IL/CR	BCQ
340.	List the uses of interim removable partial dentures.	IL	BCQ
341.	Justify the prescription of interim removable partial dentures.	IL	BCQ
342.	Design interim removable partial dentures.	CR	OSCE
343.	Sort clinical and laboratory procedures for interim removable partial dentures in sequence.	CR	OSCE
344.	Recognize the need of omitting or joining one or more fabrication steps of removable partial denture.	CR	OSCE
345.	Fabricate removable partial dentures for partially dentate patients.	CR	OSCE
346.	Select a patient for immediate denture treatment.	IL	SEQ/BCQ
347.	Compare conventional and interim immediate denture.	IL	SEQ/BCQ
348.	Anticipate problems associated with immediate dentures.	IL	SEQ/BCQ
349.	Convince a patient for immediate dentures.	CR	OSCE
350.	Plan a treatment for immediate denture patient in phases.	IL	SEQ/BCQ
351.	Sequence the clinical and laboratory steps involved in the fabrication of immediate dentures.	IL	OSCE
352.	Outline steps of teeth setup specific for immediate dentures.	IL	SEQ/BCQ
353.	Give post insertion instruction to a patient of immediate denture.	IL/CR	OSCE

354.	Rationalize the use of overdentures in removable prosthodontics.	IL	SEQ/BCQ
355.	Select a patient case for prescription of overdentures.	IL	SEQ/BCQ
356.	Anticipate the problems associated with overdentures.	IL	SEQ/BCQ
357.	Outline a treatment plan for patients indicated for overdentures.	IL	SEQ/BCQ
358.	Justify the selection of abutments for overdentures.	IL	SEQ/BCQ
359.	Select appropriate abutment design for different cases of overdentures.	IL	SEQ/BCQ
360.	Enlist problems associated with overdentures.	IL	SEQ/BCQ
361.	Recognize type of overdenture prosthesis	IL	OSCE
362.	Outline the reasons and features of combination syndrome.	IL	SEQ/BCQ
363.	Diagnose combination syndrome	IL	SEQ/BCQ/OSCE
364.	Anticipate the problems with single dentures.	IL	SEQ/BCQ
365.	Rationalize tooth preparation procedures for single dentures.	IL	SEQ/BCQ
366.	Outline steps of setup of teeth for single dentures.	IL	SEQ/BCQ
367.	Differentiate between relining and rebasing of dentures.	IL	SEQ/BCQ
368.	Diagnose patients for relining or rebasing.	IL	BCQ
369.	Justify the use of relining and rebasing.	IL	BCQ
370.	Outline steps of denture preparation before impression taking for relining and rebasing.	IL	SEQ/BCQ
371.	Classify impression techniques for relining and rebasing.	IL	BCQ
372.	Appraise necessary steps for closed mouth reline technique.	IL	BCQ
373.	Enumerate different relining techniques.	IL	SEQ/BCQ
374.	Rationalize the use of denture lining materials according to chemical composition, period of usage and required consistency.	IL	BCQ
375.	Compare the properties of plasticized acrylics versus silicone rubber soft liners.	IL	SEQ/BCQ
376.	Select appropriate relining material according to case.	IL	BCQ
377.	Rationalize treatment by copy dentures.	IL	SEQ/BCQ
378.	Diagnose a patient for copy denture prescription.	IL	SEQ/BCQ
379.	Outline different copy denture fabrication technique	IL	SEQ/BCQ

ACADEMIC SCHEDULES

Weekly schedule of Module XI Operative Dentistry			
Week no.	**Lecturer 1**	**Lecturer 2**	**Lecturer 3**
W/1	Dental caries & its etiology **LO (1- 6)**	Introduction of Amalgam **LO (18- 21)**	Diagnosis of dental caries **LO (7- 9)**
W/2	Plan preventive & noninvasive treatments of dental caries **LO (10- 11)**	Principles of cavity preparation for Class I & II (Amalgam) **LO (22)**	Etiology & treatment of root caries & Nice guidelines **LO (12- 15)**
W/3	Instruments & isolation **LO (16-17)**	Complex amalgam restorations **LO (23-26)**	**Test LO (1- 15)**
W/4	Cavity liner/ bases & sealers **LO(27- 28)**	Amalgam placement & finishing **LO (29-31)**	Sterilization and Disinfection **LO(1- 19)**
W/5	Adhesion to enamel & dentine **LO (33-36)**	Class Test **LO (18-31)**	Classification of bonding system **LO (37- 38)**
W/6	Dental composite **LO (39- 40)**	Veneers **LO (63- 65)**	Posterior composite -1 **LO (41- 45)**
W/7	Class Test **LO (27-28, 33-38)**	Inlays & Onlays **LO (66- 67)**	Posterior composite -2 **LO (46- 49)**
W/8	Matrix systems **LO (50-53)**	Class Test **LO (63- 67)**	Non carious cervical lesions **LO (54- 55)**
W/9	Class Test **LO (39-53)**	Dental post **LO (69- 71)**	Bleaching-1 **LO (56- 58)**
W/10	Bleaching-2 **LO (59-60)**	Preparation & cementation of dental post **LO (72-73)**	microabrasion and macroabrasion **LO (61-62)**
W/11	Soft Tissue fluid management **LO (74-75)**	Class Test **LO (69-73)**	CAD/CAM **LO (76)**
W/13	**Theory Examination**		
W/14	**OSCE & Viva Examination**		

Weekly schedule of Module XI Orthodontics		
Week no.	**Lecturer 1**	**Lecturer 2**
Week – 1	Etiology of Malocclusion I (96-98)	Etiology of Malocclusion II (96-98)
Week – 2	Etiology of Malocclusion III (96-98)	Classification of malocclusions (91-92)
Week – 3	Orthodontic diagnosis I (77-79)	Orthodontic diagnosis II (84-85)
Week – 4	Orthodontic diagnosis III (87,89-92)	PRESENTATIONS medical problems (93-94)
Week – 5	TEST	Biologic bases of tooth movement I (99,100)
Week – 6	Biologic bases of tooth movement II (99,100)	PRESENTATIONS Mechanical Principles (101-105)
Week – 7	Mechanical Principles in Orthodontics I (101-105)	Mechanical Principles in Orthodontics II (101-105)
Week – 8	Mechanical Principles in Orthodontics III (112,113)	Anchorage in orthodontics (106-109)
Week – 9	Assessment	Banding procedures (110, 114-116)
Week –10	Bonding procedures (114,116,117)	1st second and third order movements (118-120)
Week -11	Test	revision
Week -12	Revision	Revision
Week -13	**Theory Examination**	
Week - 14	**OSCE & Viva Examination**	

Weekly schedule of Module XI OMFS		
Week	**Lecture 1**	**Lecture 2**
Week – 1	Diagnosis & Pre-operative Management of Head/ Neck Injuries LO: 178-180	Diagnosis & Management of Dentoalveolar Injuries LO: 181
Week – 2	Oral & Maxillofacial Radiology in trauma patients LO: 158, 161-163	Mandibular Fractures- Diagnosis & Management LO: 182, 184
Week – 3	Diagnosis & Management of Maxillary Fractures LO: 182, 184	Zygomatic Complex & NOE Fractures LO: 182, 184
Week – 4	Orbital Trauma and Management LO: 182, 184	Maxillofacial Injuries in Children and Elderly – Special Considerations LO: 183
Week – 5	Management of odontogenic infections LO: 121-124	Management of complex odontogenic infections LO: 125-129
Week – 6	Class test	Soft tissue Cysts and Benign Neoplasm LO: 130, 131, 142-144
Week – 7	Odontogenic & Non-odontogenic Cysts LO: 142. 143, 145, 146	Fibro-osseous, Benign and Malignant Neoplasms LO: 146, 147
Week – 8	Diseases of Maxillary sinus + Oro antral fistula LO: 132-135	Introduction of Salivary Gland disorders LO: 136-139
Week – 9	Diagnosis and management of Salivary Gland Disorders LO: 139-141	Dental Radiology LO: 148-157
Week – 10	Dental Radiology LO: 158-172	Effects of Radiotherapy and Chemotherapy in Malignant Disease LO: 173-177
Week -11	IMF Skills workshop	Class test
Week -12	Revision	Revision
Week – 13	**THEORY EXAM** **OSCE & Viva Examination**	
Week – 14		

Weekly Schedule for Mod XI Prosthodontics – Removable Partial Dentures/Replacement Dentures			
Week	**Lecture 1**	**Lecture 2**	**Lecture 3**
1.	Partially Dentate condition (185-192)	Treatment Planning – Abutment Selection (195-205)	Treatment Planning – Case Selection (206-215,219)
2.	Treatment Planning – Mouth Preparation (221-27)	Major connectors – Maxillary (228-37)	Major connectors – Mandibular (228-37)
3.	Minor connectors (238-44)	Rests and rest seats (245-50)	Direct retainers – Types and Clasp assembly – I (251-64)
4.	Direct retainers – Types and Clasp assembly – II (251-64)	Biomechanics of removable Partial dentures (265-68)	**Test – RPD (Components)**
5.	Indirect Retainers (269-73)	Tooth tissue supported removable partial dentures (274-303)*2	Tooth Preparation (307-312)
6.	Demonstration – Occlusal rest preparation	Impression techniques (313-22)	Laboratory Procedures I (304-06,323-327)
7.	Laboratory Procedures II (304-06,323-327)	Maxillomandibular relations (328-30)	Occlusion in partially dentate patient(331-32)
8.	Insertion and relining protocols (333-38)	**Case based session –** Designing of cast partial dentures	Disinfection protocols (339)
9.	Overview – replacement denture	Immediate Dentures (346-54)	**Test - RPD**
10.	Over dentures (355-62)	Single Dentures (363-67)	Copy Dentures (378-80)
11.	Relining, rebasing (368-77)	**Implant PBL**	**Implant PBL**
12.	**Implant PBL**	**Revision**	**Revision**
13.	**THEORY EXAM**		
14.	**OSCE & Viva Examination**		

MODULE XII (Paedodontics, Orthodontic Treatment Planning, Orthognathic surgery, Fixed Prosthodontics and Allied Prosthetics)

OBJECTIVES

At the end of the module, students should be able to:

S.No	Objectives	Teaching strategy	Assessment tool
	OPERATIVE		
1.	Apply behavior management strategies' to the pediatric patient in a dental practice	IL/CBL	BCQs/SEQs
2.	Know Pharmacological management of the anxious child	IL	BCQs/SEQs
3.	Demonstrate local anesthesia for Paediactric dentistry	IL/CR	OSCE
4.	Describe the pattern of caries in pre-school children	IL	BCQs/SEQs
5.	Understand assessment of caries risk factors in children	IL/CR	BCQs/ VIVA
6.	Explain the relationship between diet, plaque, saliva and caries	IL/CBL	BCQs/SEQs
7.	Perform Dental caries detection and diagnosis in pre-school children in dental OPD	IL/CR	BCQs/SEQs
8.	Recognize the importance of Diet counseling to the parent and the child	IL	BCQs/SEQs/ VIVA
9.	Discuss the prevention of dental caries	IL	BCQs/SEQs
10.	Describe the importance of Fluoride administration in caries control	IL	BCQs/SEQs
11.	Explain Mode of action of Fluoride	IL/CBL	BCQs/SEQs
12.	Know importance of Water fluoridation	IL	SEQs
13.	Prescribe Fluoride supplement to reduce caries	IL/CR	SEQs
14.	Apply Fluoride gel/ varnish as a preventive measure	IL	SEQs
15.	Apply fissure sealant	IL/SGD	OSCE
16.	Appreciate the importance of temporization in Paediactric patients with multiple caries lesions	IL/CR	BCQs/SEQs
17.	Apply operative procedure to restore the primary teeth when pulp is not involved	IL/CR	BCQs/SEQs
18.	Recognize the importance of pulp therapy in a primary dentition	IL/CR	BCQs/SEQs/OSCE
19.	Express medicaments used for pulpotomy in primary dentition	IL/CR	BCQs/SEQs/ VIVA
20.	Perform pulpotomy procedure in primary teeth	IL/CR	BCQs/SEQs/OSCE
21.	Discuss indication of Pulpectomy for primary teeth	CR/SGD	BCQs/SEQs/OSCE
22.	Demonstrate the procedure of pulpectomy in primary teeth	CR	BCQs/SEQs/OSCE

23.	Revise the application of fissure sealants and Preventive resin restoration in primary dentition	IL/CR	BCQs
24.	Know indications of Stainless steel crown	IL/CR	BCQs/SEQs
25.	Demonstrate procedure of stainless steel crown preparation	IL/CR	BCQs/SEQs
26.	Preform cementation of stainless steel crown	IL/CR	BCQs/SEQs
27.	Describe rational of Hall technique in primary teeth	IL/CR	BCQs/SEQs /VIVA
28.	Outline the use of adhesive coping	IL/CR	BCQs/SEQs
29.	Explain alternatives to conventional cavity preparation	IL	BCQs
30.	Understand use of lasers in dentistry	IL	BCQs
31.	Apply operative procedure to restore the permanent teeth in mixed dentition when pulp is not involved	IL/CR	BCQs/SEQs
32.	Recognize the aetiological factors of dental trauma	IL	BCQs/SEQs/ VIVA
33.	Classify the nature of dento-alveolar injuries	IL	BCQs/SEQs
34.	Recognize the importance of history (medical & dental) in traumatic injuries	IL/CR	BCQs/SEQs/VIVA
35.	Examine intra-oral, extra-oral tissue in case of dental trauma	IL/CR	BCQs/OSCE
36.	Describe radiographic and clinical features of the various injuries to the primary dentition	IL/CR	SEQs/OSCE
37.	Write the sequelae of traumatic injuries to the primary dentition	IL	BCQs/SEQs
38.	Know the management of complications in permanent dentition occur due to traumatic injuries to the primary dentition	IL/CR	BCQs/SEQs/OSCE
39.	Describe clinical and radiographic features of the traumatic injuries to the hard dental tissue and the pulp in permanent dentition	IL/CR	BCQs/ SEQs/OSCE
40.	Apply treatment options to manage traumatic injuries to the hard dental tissue and the pulp in permanent dentition	IL/CR	BCQs/SEQs/OSCE / VIVA
41.	Use pulp therapy procedures to treat traumatic injuries	IL/CR	BCQs/SEQs/OSCE
42.	Differentiate between various Tooth luxations injuries	IL	BCQs/SEQs/ OSCE
43.	Explain clinical and radiographic features of luxation injuries	IL	BCQs/SEQs/ OSCE
44.	Mange Concussion, Subluxation Lateral luxation, and Extrusive luxation injuries	IL	BCQs/SEQs/OSCE
45.	Use different treatment modalities to manage Intrusive luxation injuries of various degree	IL	BCQs/SEQs/ OSCE
46.	Execute replantation procedure for Avulsion injuries	IL	BCQs/SEQs/OSCE
47.	Know types of splints use in Paediatric dentistry	IL	BCQs/SEQs/OSCE
48.	Apply different types of Splinting techniques	IL	BCQs/SEQs

49.	Differentiate between various types of resorption	IL/CR/SGD	BCQs/SEQs/
50.	Define root resorption and explain its types	IL	BCQs/SEQs
51.	Write clinical and radiographic features of External inflammatory root resorption	IL/CR/SGD	BCQs/SEQs/OSCE / VIVA
52.	Know management of External inflammatory root resorption	IL	BCQs/SEQs/OSCE
53.	Describe diagnosis of cervical resorption	IL	BCQs/SEQs
54.	Recognize various types of invasive cervical resorption	IL	BCQs/SEQs/OSCE
55.	Perform management of invasive cervical resorption	IL	BCQs/SEQs/OSCE
56.	Identify radiographic features of internal root resorption	IL	BCQs/SEQs/OSCE
57.	Apply procedure to manage internal root resorption	IL	BCQs/SEQs/OSCE
58.	Write clinical and radiographic differences between external and internal root resorption	IL	BCQs/SEQs/OSCE
59.	Explain the process of replacement resorption	IL	BCQs /VIVA
60.	Know management of replacement root resorption	IL	BCQs
61.	Recognize various abnormalities of tooth size	IL	BCQs/SEQs
62.	Explain prevalence and clinical difference between Megadont and microdontia	IL	BCQs
63.	Examine accessory cusp abnormalities in tooth form	IL/CR	OSCE
64.	Execute management for accessory cusp	IL/CR	BCQs/SEQs/OSCE
65.	Differentiate between Invaginated and Evaginated teeth	IL/CR	BCQs/SEQs
66.	Apply management for Invaginated and Evaginated teeth	IL/CR	OSCE/ VIVA
67.	Appreciate abnormalities of root form	IL	BCQs
68.	Explain Taurodontism and its types	IL	BCQs/SEQs
69.	Debate the inherited anomalies of enamel	IL/CR	OSCE
70.	Discuss diagnose and management of Amelogenesis Imperfecta in primary and mixed dentition	IL/CR	OSCE
71.	Know clinical features of Molar-incisal hypomineralization	IL	BCQs/SEQs
72.	Understand clinical problems of Molar-incisal hypomineralization	IL/CR	BCQs/SEQs/OSCE
73.	Perform management of Molar-incisal hypomineralization in primary and mixed dentition	IL/CR	BCQs/SEQs/OSCE
74.	Describe the inherited anomalies of dentine	IL/CR	OSCE
75.	Express clinical and radiographic findings of Dentinogenesis Imperfecta	IL	BCQs/SEQs/OSCE
76.	Execute management for Dentinogenesis Imperfecta in primary, mixed and permanent dentition	IL	BCQs/SEQs/OSCE

ORTHODONTICS			
77.	Define preventive and interceptive treatment with regards to Orthodontics	IL	OSCE
78.	Differentiate between preventive and interceptive treatment	IL	OSCE/ BCQ
79.	Enlist the treatment options that come under preventive and interceptive treatment	IL	OSCE/ BCQ
80.	discuss how the habits can influence development of malocclusion	IL	OSCE/ BCQ
81.	Recognize the importance of monitoring or controlling environmental factors for prevention of malocclusion	IL	OSCE
82.	Recall various spaces that should naturally be present in a dentition	IL / CBL	OSCE/ BCQ
83.	Discuss the importance of various spaces naturally present in a deciduous dentition	IL / CBL/ CR	OSCE/ BCQ
84.	Recognize the cases which are more liable to have crowding later in life	IL/ CR	OSCE/ BCQ
85.	Enlist the appliances which can maintain arch space to adjust the permanent dentition	IL	OSCE
86.	Identify methods used to re-create spaces in the arch to adjust teeth	IL	CQ
87.	Enlist the situations when extractions become necessary	IL	BCQ/ SEQ
88.	Enlist different methods by which space can be gained in an arch	IL	BCQ/ SEQ
89.	Identify the various removable appliances and their parts	CR	OSCE
90.	Enlist the indications of removable appliances	CR	OSCE
91.	Identify active components of a removable appliance	CR	OSCE
92.	Fabricate various components of a removable appliance	CR	OSCE
93.	Fabricate removable appliances	CR	End rotation
94.	Define what is functional jaw orthopedics	IL	OSCE
95.	Discuss the importance of functional jaw orthopedics as a treatment modality	IL	OSCE/ BCQ
96.	Enlist the appliances used for functional jaw orthopedics	IL	CQ/ BCQ
97.	Enlist different treatment options that are now available for the patients who come for orthodontic treatment	IL	OSCE
98.	Discuss the importance of a step wise approach in providing	IL	CQ/ OSCE

	orthodontic treatment to patient		
99.	Enlist methods to manage eruption problems, space problems, and crowded arches.	IL/ CR	OSCE/ BCQ
100.	Discuss options available for treating eruption problems	IL/ CR	OSCE
101.	Identify the problems in occlusion at the end of treatment	IL / CR	OSCE
102.	Define relapse	IL	OSCE
103.	Quote causes of relapse	IL	OSCE/ BCQ
104.	Discuss importance of retention at the end of Orthodontic treatment	IL	OSCE/ BCQ
105.	Quote different methods that can be utilized to prevent, or minimize relapse at the end of Orthodontic treatment	IL	OSCE/ BCQ
106.	Enlist the conditions in which the retention methods would have to be varied and find its reason	IL	OSCE
107.	Quote the conditions which would need longer retention time	IL	OSCE/ BCQ
108.	learn about the condition in which fixed retention would be provided	IL	OSCE/ BCQ
109.	Write and quote the basic retention protocol	IL	BCQ
110.	**Dentofacial anomalies**		
111.	Recognize the factors that cause clefting in a fetus	IL	BCQ/SEQ
112.	Describe the preventive mechanisms	IL	BCQ
113.	Identify dental treatments that can be provided to patients of cleft lip and palate	IL/CBL	SEQ/OSCE
OMFS / ORTHODONTICS			
114.	Enlist various Dentofacial deformities and syndromes of Orofacial complex	IL/CBL	BCQ/CP
115.	Describe basics of orthognathic surgery and its significance in correcting Dentofacial deformities	IL	BCQ/SEQ
116.	Enlist various orthognathic procedures	IL	BCQ
117.	Formulate treatment plan for management in patients with Oro-facial Cleft	IL/CBL	BCQ/SEQ
OMFS			
118.	Recall the principles of reconstruction of various jaw deformities	IL	BCQ
119.	Temporomandibular Joint Disorders		
120.	Recall basic anatomy and physiology of Temporomandibular Joint and the pathologies related to it, which may be both congenital and development.	IL	BCQ

121.	Evaluate TMJ pain and dysfunction by thorough history, physical examination and radiographic assessment.	IL/CBL	BCQ/OSCE
122.	Classify Temporomandibular Joint Disorders	IL	SEQ
123.	Develop differential diagnosis for Temporomandibular joint disorders/diseases	IL/CBL	SEQ/CP
124.	Plan treatment options for TMJ diseases, non-surgical and surgical management	IL/CBL	SEQ
125.	Learn the basics of laser, gene and immunotherapy	IL	BCQ
126.	Forensic Dentistry		
127.	Define Forensic Dentistry.	IL	BCQ/CQ
128.	Predict the importance of dentistry in forensic.	IL	CQ
129.	Outline the significance of age, gender and ethnic determination for personal identification.	IL	CQ
130.	Analyze role of forensic dentistry in Mass disaster, Bite marks, Chelioscopy and Rugoscopy.	IL	CQ
131.	Interpret the role of DNA in primary and permanent dentition.	IL	CQ
132.	Ethics in Dentistry		
133.	Outline the significance of ethics in Dentistry.	IL	BCQ
134.	Enumerate the ethical principles that must be taken into consideration for practicing dentistry.	IL/SGD	BCQ
135.	Explain the terms, values and concepts that are often used in health care.	IL/SGD	BCQ
136.	Describe the difference between a problem and an ethical dilemma	IL/SGD	BCQ
137.	Analyze the role of autonomy in Ethics.	IL	BCQ
138.	Choose the principles or values which are present and important in clinical scenarios	IL	BCQ
139.	Determine the role of informed consent in clinical practice of Dentistry	IL/CR	BCQ
	PROSTHODONTICS		
140.	**Classify crowns.**	**CBL**	**SEQ/BCQ/OSCE**
141.	Select appropriate crown material and crown type for a given case.	CBL	SEQ/BCQ
142.	Classify fixed partial dentures.	CBL	SEQ/BCQ
143.	Identify components.	CBL	SEQ/BCQ/OSCE
144.	Select appropriate type of FPD for a given patient.	CBL	SEQ/BCQ
145.	Apply material science in association to FPDs.	CBL	

146.	Appraise the role of biological width in margin placement.	IL	SEQ/BCQ
147.	Design temporary and final restorations conducive to optimal plaque control.	IL	SEQ/BCQ
148.	Apply biological, mechanical and aesthetic principles during crown preparation.	IL	SEQ/BCQ
149.	Correlate margin placement and margin design with aesthetic and biological considerations.	IL/CBL	SEQ/BCQ
150.	Achieve retention and resistance form in crown preparation.	CR	OSCE
151.	Compare different margin designs.	IL	SEQ/BCQ
152.	Relate taper of preparation with path of placement.	IL	SEQ/BCQ
153.	Associate retention of restoration with forces, geometry of preparation, surface properties, surface area, material and type of luting cement used.	IL	SEQ/BCQ
154.	Compare complete coverage and partial coverage crown in terms of retention and conservation of tooth structure.	IL	SEQ/BCQ
155.	Relate resistance form with forces, type of preparation, luting agent; and taper, diameter and height of preparation.	IL	SEQ/BCQ
156.	Appraise the influence of restoration material on aesthetics.	IL	SEQ/BCQ
157.	Assess the role of adjunctive retentive features in tooth preparation.	IL	SEQ/BCQ
158.	Devise strategies to enhance retention of crowns.	IL	SEQ/BCQ
159.	Compare tooth preparation of metal, metal ceramic and all ceramic crowns.	IL	SEQ/BCQ/OSCE
160.	Rationalize the incorporation of cusp bevels in crown preparation	IL	SEQ/BCQ/OSCE
161.	Select an armamentarium for different crown preparations	CR	OSCE
162.	Select appropriate bur design for different reductions of tooth surface.	CR	OSCE
163.	Enlist ways of checking occlusal clearance clinically.	IL	SEQ
164.	Justify the use of guiding grooves and alignment grooves for occlusal reduction and axial reduction respectively.	IL	SEQ/BCQ
165.	Devise strategies to prevent damage to adjacent tooth during axial tooth reduction.	IL	SEQ/BCQ
166.	Select a margin design in relation to the material chosen.	IL/CBL	SEQ/BCQ
167.	Select correct margin placement in a given case.	IL/CBL	SEQ/BCQ
168.	Perform tooth preparation for an anterior and posterior metal ceramic crown on an extracted tooth.	CR	OSCE
169.	Evaluate the finished crown preparation.	CR	OSCE
170.	Compare the tooth preparation for a partial and a complete coverage crown.	IL	SEQ/BCQ/OSCE

171.	Rationalize the use of proximal grooves in a partial coverage crown.	IL	SEQ/BCQ
172.	Outline strategies for achieving parallelism between abutment preparations.	IL	SEQ
173.	Identify pin ledge preparation.	IL	SEQ/BCQ/OSCE
174.	Compare pin ledge preparation with other partial coverage crown designs.	IL	SEQ/BCQ
175.	Classify veneers.	IL	SEQ/BCQ
176.	Identify porcelain laminate veneers.	IL	SEQ/BCQ/OSCE
177.	Select a patient for a porcelain laminate veneer.	IL	SEQ/BCQ
178.	Outline preparation form of a porcelain laminate veneer.	IL	SEQ
179.	Chose armamentarium for a porcelain laminate veneer preparation.	IL	SEQ/BCQ
180.	Consider the prerequisites for tissue management and impression making.	IL	SEQ/BCQ
181.	Select appropriate strategy for tissue displacement for margin placement and impression making.	IL	BCQ
182.	Devise strategies to control saliva during impression making.	IL	SEQ/BCQ
183.	Recognize impression defects and take measures to avoid these defects.	IL/CR	BCQ/OSCE
184.	Rationalize the use of custom tray for fixed partial denture impression.	IL	BCQ
185.	Enumerate the considerations for custom tray construction.	IL	SEQ/BCQ
186.	Select appropriate impression material for fixed partial dentures.	IL/CBL	BCQ
187.	Compare different impression techniques for fixed partial dentures.	IL	SEQ/BCQ
188.	Recognize impressions according to different techniques	CR	OSCE
189.	Recommend a disinfection protocol for different impressions materials.	IL/CR	BCQ/OSCE
190.	Justify the use of interim fixed prosthesis.	IL	SEQ/BCQ
191.	Select appropriate material for interim FPD.	IL	BCQ
192.	Compare different techniques for its fabrication	IL	SEQ/BCQ
193.	Classify definitive cast and dies.	IL	SEQ/BCQ
194.	Compare different types of dies for crown fabrication.	IL	SEQ/BCQ
195.	Enumerate different die systems.	IL	SEQ/BCQ
196.	Sequence the laboratory steps for fabrication of FPD.	IL	BCQ
197.	State steps of different laboratory procedures.	IL	BCQ
198.	Rationalize the use of wax cut back technique in PFM restorations.	IL	BCQ
199.	Enumerate considerations for designing metal sub structure.	IL	BCQ

200.	Select a casting alloy for different types or restorations.	IL	BCQ
201.	Outline steps for investing and casting of crown and FPD.	IL	BCQ
202.	Select appropriate investment material according to casting alloy.	IL	BCQ
203.	Enumerate the causes of casting failure.	IL	BCQ
204.	Relate factors affecting bond between metal and overlying porcelain.	IL	BCQ
205.	State steps of metal preparation	IL	BCQ
206.	Enlist steps of porcelain application on metal substructure.	IL	BCQ
207.	Enlist porcelain application techniques	IL	BCQ
208.	Differentiate between internal characterization and glazing/surface characterization.	IL	BCQ
209.	Differentiate between auto glazing and over glazing	IL	BCQ
210.	OUTLINE porcelain surface treatments.	IL	BCQ
211.	Classify all ceramic restorations.	IL	BCQ
212.	Select a patient for all ceramic restoration	IL	SEQ/BCQ
213.	Rationalize the use of porcelain labial margins.	IL	BCQ
214.	Select an all ceramic system in relation to aesthetics and function.	IL	BCQ
215.	Recall Munsell and CIELAB Color Systems	IL	BCQ
216.	Describe visual and instrumental color measurement	IL	SEQ/BCQ
217.	Identify light Sources and the ideal light source for shade matching	IL	SEQ/BCQ
218.	State factors affecting color perception	IL	SEQ/BCQ
219.	List factors affecting the color of porcelain restorations	IL	SEQ/BCQ
220.	Apply general guidelines for shade selection	IL	SEQ/BCQ
221.	Select a case for a resin bonded bridge.	IL/CBL	SEQ/BCQ
222.	Justify the use of resin bonded bridged over a convention fixed partial denture	IL/CBL	SEQ/BCQ
223.	Recognize frame work design for a resin bonded FPD.	IL	OSCE
224.	Classify resin-bonded fixed partial denture.	IL	SEQ/BCQ
225.	Outline preparation steps of abutment teeth both in anterior and posterior teeth	IL	SEQ/BCQ
226.	Compare anterior and posterior abutment tooth framework design.	IL	SEQ/BCQ
227.	Select appropriate material for bonding of resin bonded FPD.	IL/CBL	SEQ/BCQ
228.	Select a case for fiber reinforced FPD.	IL	BCQ
229.	Classify Fiber-reinforced composite materials	IL	BCQ
230.	Classify abutments	IL	SEQ/BCQ
231.	Devise strategy for managing tilted abutments	IL/CBL	SEQ/BCQ
232.	Enumerate problems associated with cantilever and pier abutments	IL/CBL	SEQ/BCQ
233.	Appraise role of connectors in relation to variations in abutments	IL/CBL	SEQ/BCQ
234.	Enumerate retainers used in fixed partial dentures.	IL/CBL	SEQ/BCQ

235.	Choose appropriate retainers for different FDP designs.	IL/CBL	SEQ/BCQ
236.	Classify residual ridge deformities	IL/CBL	SEQ/BCQ
237.	Measure pontic space.	CR	SEQ/BCQ
238.	State classification of pontic design	IL	SEQ/BCQ
239.	Compare various pontic designs along their pros and cons, indications and contraindications.	IL/CBL	SEQ/BCQ
240.	Select appropriate pontic design for different case scenarios.	IL/CBL	SEQ/BCQ
241.	Compare types of connectors	IL/CBL	SEQ/BCQ
242.	List factors affecting connector design	IL/CBL	SEQ/BCQ
243.	Contrast soldering, brazing and welding	IL	SEQ/BCQ
244.	Plan protocol for finishing the cast restoration.	IL	SEQ/BCQ
245.	Enlist the zones of crown evaluation in laboratory in sequence	IL	SEQ/BCQ/OSCE
246.	Enumerate management of any problems in crowns pre cementation	IL/CBL	SEQ/BCQ
247.	Devise evaluation protocol of finished prosthesis clinically.	IL/CBL	SEQ/BCQ
248.	Evaluate all zones of crown sequentially in vivo	IL/CBL	SEQ/BCQ
249.	Diagnose underextention, over extention and legde formation in margins	IL/CBL	SEQ/BCQ/OSCE
250.	Devise strategy for managing improper crown margins	IL/CBL	SEQ/BCQ
251.	Classify luting cements	IL	SEQ/BCQ
252.	Compare provisional and definitive cementation	IL	SEQ/BCQ
253.	Select appropriate luting agent for a given type of prosthesis.	IL/CBL	SEQ/BCQ
254.	Manipulate zinc oxide and glass ionomer cements.	IL	SEQ/BCQ
255.	Enlist steps for the preparation of the restoration and tooth surface for cementation.	IL	SEQ/BCQ
256.	Give instructions to the patient regarding prosthesis care	IL	SEQ/BCQ
257.	Apply clinical protocols for post cementation appointments	IL	SEQ/BCQ
258.	Justify periodic recall of such patients.	IL	SEQ/BCQ
259.	Give post cementation instructions to the patient.	IL/CBL	SEQ/BCQ
260.	Appraise the role of parafunctional movements on the stomatognathic system.	IL	BCQ
261.	State objectives of occlusal treatment.	IL	BCQ
262.	Justify the use of occlusal device therapy.	IL	BCQ
263.	Identify factors leading to temporomandibular disorders in edentulous populations.	IL	BCQ
264.	Outline management of temporomandibular disorders	IL	BCQ
265.	Define dental implants	IL	BCQ
266.	Enlist the different types of dental implants	IL	BCQ
267.	Identify Implant components	IL	BCQ/OSCE
268.	Define osseointergration	IL	BCQ
269.	Discuss the role of osseointegration in implants and factors that determine its success	IL	BCQ
270.	Enumerate factors for failure of implants	IL	BCQ
271.	Sequence implant related surgical and restorative phases	IL	BCQ
272.	Compare one stage and two stage technique	IL	BCQ

273.	Enlist the types of prosthetic implant loading.	IL	BCQ
274.	Classify implant retained prostheses according to Misch	IL	BCQ
275.	Compare cement retained versus screw retained prosthesis	IL	BCQ/OSCE
276.	Brief about configurations of implant supported overdentures	IL	BCQ
277.	Select a patient for implant supported overdentures	IL	BCQ
278.	identify type of attachments used in implant retained overdentures	IL	BCQ/OSCE
279.	Justify the use of implant supported overdentures	IL	BCQ
280.	Discuss the role and need of Maxillofacial Prosthesis in removable prosthodontics	IL	BCQ
281.	Define obturator and enlist its uses	IL	BCQ
282.	Enlist the types of maxillary obturators	IL	BCQ
283.	Identify types of maxillofacial prsothesis	IL	osce
284.	Classify the types of maxillary obturators according to Aramany	IL	BCQ
285.	Classify the types of mandibular prosthesis according to Cantor and Curtis	IL	BCQ
286.	Identify continuity and discontinuity mandibular defects	IL	OSCE
287.	Identify soft palate prosthesis	IL	OSCE
288.	Identify the role of soft liners in maxillofacial prosthontics.	IL	BCQ
289.	Enlist materials used for resilient lining.	IL	BCQ

ACADEMIC SCHEDULES

Weekly schedule of Module XII Paediatric Dentistry			
Week no.	**Lecturer 1**	**Lecturer 2**	**Lecturer 3**
W/1	Classification of Dental trauma **LO (32-33)**	Non- Pharmacological Behavior management **LO (1)**	History & examination of traumatic injuries **LO (34-35)**
W/2	Dental trauma of primary dentition **LO (36)**	Pharmacological Behaviour management **LO (2)**	Local anesthesia **LO (3)**
W/3	Sequelae of traumatic injuries **LO (37)**	Class Test **LO (1-2)**	Complications in permanent dentition **LO (38)**
W/4	Dental trauma in permanent dentition **LO (39)**	Assessment of caries risk factors **LO (4-6)**	Management of trauma in permanent dentition **LO (40)**
W/5	Class Test **LO (32-40)**	Detection & Diagnosis of dental caries **LO (7-8)**	Pulp therapy procedures **LO (41)**
W/6	Tooth luxations injuries **LO (42-44)**	Prevention of dental caries **LO (9-13)**	Intrusion injuries **LO (45)**
W/7	Avulsion injuries **LO (46)**	Class Test LO (4-13)	Splinting **LO (47-48)**
W/8	Class Test **LO (41-48)**	Fluoride Therapy & fissure sealant **LO (14-16)**	External Resorption **LO (49-54)**
W/9	Internal Resorption **LO (55-59)**	Restorative options for primary teeth **LO (17)**	Abnormalities of tooth size **LO (60-67)**
W/10	Inherited anomalies of enamel **LO (68-69)**	Class Test **LO (14-17)**	Molar-incisal hypomineralization **LO (70-71)**
W/11	Inherited anomalies of dentine **LO (73-74)**	Revision	Class Test **LO (49-67)**
W/12	Class Test **LO (68-74)**	Revision	Revision
W/13	**Theory Examination**		
W/14	**OSCE & Viva Examination**		

Weekly schedule of Module XII Orthodontics		
Week no.	**Lecturer 1**	**Lecturer 2**
Week – 1	Retention and relapse (103-109)	Appliances for retention
Week – 2	Preventive and Interceptive treatment I (77-79)	Preventive and interceptive treatment II (80-83)
Week – 3	Preventive and interceptive treatment III (84-87)	FJO I (94-97)
Week – 4	FJO appliances (97)	Orthopedic treatment (97)
Week – 5	Treatment of class I malocclusion (88,98-101)	TEST
Week – 6	Treatment of class II malocclusion (98-101)	Treatment of class III malocclusion (98-101)
Week – 7	Treatment of CL/P (111-114, 117)	Perio problems and Orthodontic treatment
Week – 8	Orthognathic surgery (115-116)	TEST
Week – 9	Headgears in Orthodontics (88, 97)	Lingual orthodontics
Week –10	Revision of previous modules	Revision of previous modules
Week -11	Revision of previous modules	Revision of previous modules
Week -12	Revision of previous modules	Revision of previous modules
Week -13	**Theory Examination**	
Week – 14	**OSCE & Viva Examination**	

Weekly schedule of Module XII OMFS		
Week	**Lecture 1**	**Lecture 2**
Week – 1	Development of Clinical Anatomy and Physiology of TMJ LO: 118, 119	Diseases of TMJ LO: 120, 121
Week – 2	Ankylosis LO: 121, 122	Management of TMJ Diseases LO:l 121-122
Week – 3	Myofascial Pain Dysfunction Syndrome (MPDS) LO: 121, 122	Pathophysiology of Internal Disc Derangements of TMJ LO: 121, 122
Week – 4	Revision	CBL/PBL Case Presentations
Week – 5	Use of Lasers in OMFS LO: 123	Introduction to Ethics in Dentistry LO: 129-135
Week – 6	Class presentations	Class presentations
Week – 7	Contemporary Implant Dentistry LO: 136-138	Contemporary Implant Dentistry LO: 139-143
Week – 8	Implant workshop	Introduction of Dentofacial Deformities LO: 110-111, 113
Week – 9	Correction of Dentofacial Deformities LO: 117	Orthognathic Surgery & Distraction Osteogenesis LO: 113-115
Week – 10	Introduction to Orofacial Clefts LO: 112, 116, 117	Management of Orofacial Clefts LO: 116, 117
Week -11	Basics of Forensic Dentistry LO: 124-126	Basics of Forensic Dentistry LO: 127, 128
Week – 12	**THEORY EXAM**	
Week – 13	**OSCE & Viva Examination**	

Weekly Schedule for Mod XII Prosthodontics – Fixed Prosthodontics/Implantology/Maxillofacial			
Week	**Lecture 1**	**Lecture 2**	**Lecture 3**
1.	Principles of tooth Preparation – I (155-167)	Principles of tooth Preparation – II (155-167)	Principles of tooth Preparation – III (155-167)
2.	Case selection – Crown (149-50)	**Case based session** – case selection – fixed prosthesis (151-54,220-23)	Tooth Preparation – Cast Crown & All Ceramic Crowns (168-78)
3.	Tooth Preparation – Metal ceramic Crown (168-78)	Demonstration PFM Prep (Posterior) 4 groups	**Test FPD**
4.	Demonstration Metal Prep Posterior) 4 groups	Partial veneer crowns (179-188)	Tissue Management and Impression making (189-98)
5.	Interim Fixed Restorations (199-201)	Color Replication Process (224-229)	Laboratory Procedures (202-19)
6.	Pontic Design and Connectors(245-52)	Abutment and Retainers – CBL (239-244)	Resin bonded FPD (230-36)
7.	Finishing and Evaluation (253-59)	Luting Agents and Cementation Procedures (260-264)	Postoperative Care (266-68)
8.	Practical Time (Phantom Head	Implant supported prosthesis –I (274-288)	Implant supported prosthesis –II (274-288)
9.	Practical Time (Phantom Head	Introduction to TMDs (269-73)	Treatment option for TMDs (269-73)
10.	Maxillofacial prosthodontics (289-298)	**Implant CBL**	**Implant CBL**
11.	**Group Quiz**		Q/A session
12.	**THEORY EXAM**		
13.	**OSCE & Viva Examination**		

LEARNING RESOURCES

The learning resources for the educational contents of BDS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. Ina addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.
Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

Recommended Books Final YEAR BDS			
Oral and Maxillofacial Surgery	**Prosthodontics**	**Operative Dentistry**	**Orthodontics**
5. An Introduction of Oral & Maxillofacial Surgery David Mitchel 6. An Outline of Oral Surgery part I & Part II Killey, Seaward & Kay 7. Killey's Fractures of Middle Third of Facial Skeleton. 8. Killey's Fracture of the Mandible 9. Oral & Maxillofacial Surgery Laskin 10. Oral & Maxillofacial Surgery Kruger	**Books:** 1. McKracken's Removable Partial Prosthodontics by Alan B Carr, Glen P McGivney and David T Brown. 11th Edition. 2. Stewart's Clinical Removable Prosthodontics by Rodney D Phoenix, David R Cagna, Charles F DeFreest. 4th Edition. 3. Prosthodontic Treatment for Edentulous Patients by Zarb, Hobkirk, Eckert and Jacob. 13th Edition.	3. Joseph R Evans, John H Wilke. Atlas of Operative Dentistry: Preclinical and clinical procedures. Quintessence books Publishing Co. 4. Richard L Kahn, Pinkerton RJ, Kagihara L 5. Fundamentals of Preclinical Operative Dentistry. www.bookdepository.co.uk 6. The Art & Science of Operative Dentistry by Sturdurant. 7. Pickardards Manual of Operative Dentistry by EAM Kidd. **2.** Fundamentals of Operative Dentistry by Schwartz	1. Contemporary Orthodontics, by William R. Profit (5th Edition) 2. Hand Book of Orthodontics, by Robert-E-Moyers (4th Edition) 3. Essentials of facial growth by Donald H Enlow (2nd Edition)

11. Medical Problems in Dentistry Scully & Cawson 12. Text book of Oral & Maxillofacial Surgery S.M Balaji 13. Fundamentals of Orthognathic Surgery Malcolm Harris 14. Oral & Maxillofacial Surgery John Peddler	4. Contemporary Fixed Prosthodontics by Rosenstiel, Land and Fujimoto. 4th Edition. 5. Essentials of Complete Denture Prosthodontics by Sheldon Winkler. 2nd Edition **Reference Books for Laboratory Procedures:** 1. Dental Laboratory Procedures. Complete Dentures. Morrow, Rudd, Eissmann. Vol 01, 1980. 2. Dental Laboratory Procedures. Fixed Partial Dentures. Eissmann, Rudd, Morrow. Vol 02, 1980. **Notes and handouts** (for topics not available in the above mentioned books	**3.** Dental Restorative Materials – Craig **4.** Textbook of Operative Dentistry by Vimal K Sikri **5.** Harty's Endodontic in clinical practice by T.R.Pittford **6.** Pathways of pulp by Stephen Cohen **7.** Endodontics Principals and Practice by Torabinejad	

STANDARD 7: ASSESSMENT/EXAMINATION POLICIES

STATUES

- Muhammad Dental College Mirpurkhas is affiliated with Liaquat University of Medical & Health Sciences, Jamshoro.
- Annual examination will be conducted by the affiliating university as per PM&DC guidelines.
- MDC will conduct periodic tests as well as end of the chapter tests in each subject on regular basis. Most of the tests will be conducted online, similar to the Muhammad Medical College formulation.
- The Internal assessment will be based on attendance, test results, assignments as well as the logbook.
- Students are required to be punctual.
- Minimum 75% attendance is mandatory to appear in the Annual examination.

1. The First Professional BDS Examination shall be held at the end of first year BDS class
2. Every candidate shall be required to study contents of Anatomy (including Histology), Physiology, Biochemistry, Oral Anatomy and Tooth Morphology, Behavioural Sciences, Community Medicine & Public Health, Pathology, Pharmacology & Therapeutics, Islamic Studies/Ethics and Pakistan Studies, Clinical skills and Professionalism, Ethics, Research and Leadership. The teaching and assessment shall be done in three modules.
3. **Attendance** of lectures, tutorials and labs/OPD will be assessed separately and must be at least **75%** by end of session.
4. **Weekly online Test:** Online test will be conducted every week comprising MCQ's from every topic taught during previous week.
5. **Assignments**: Students will be given assignment in a group of 5 each, which will have to be submitted by **given due date**.
6. **Quiz competition** performance.
7. **Workbook/Logbook** should be completed, checked and certified.
8. **SURVIVE: Online Class assessment test results** will also be incorporated in internalassessment.

9. ISLAMIC STUDIES/ETHICS AND PAKISTAN STUDIES

The examination in Islamic Studies/Ethics and Pakistan Studies shall be as follows-

I. One written paper of 100 marks in Islamic Studies/Ethics and Pakistan Studies having two components: Islamic Studies/Ethics component having 60 marks, three (3) Long Essay Questions (LEOs) to be attempted out of five (5) Long Essay Questions (LEOs), having 20 marks each.

II. Pakistan Studies component having 40 marks, two (2) Long Essay Questions (LEOS) to be attempted out of four (4) Long Essay Questions (LEQS), having 20 marks each.

Note: Islamic Studies for Muslims, and Ethics for Non-Muslims candidates.

STANDARD 7.1: INSTRUCTIONAL STARTEGIES FOR INTEGRTAED BDS CURRICULUM

Teaching in integrated curriculum is based on themes which unite different disciplines by blurring their boundaries. These themes allow teachers of different disciplines to meaningfully link content of their respective disciplines to enable students to see the big picture and appreciate relevance of their learning to their future practical life. Selection of tools for information transfer should ensure simultaneous input of different disciplines to enhance understanding and implementation of knowledge being taught. Different disciplines may need to have joint teaching sessions to help students in developing links between information coming from different subjects. While tools and methods mentioned in the traditional curricula above may continue to be used, the following tools are commonly used for module or theme-based teaching:

COGNITION:	PSYCHOMOTOR TRAINING	ATTITUDE OR BEHAVIOR
• Joint or paired lectures by different disciplines • Problem based learning sessions • Case base learning sessions • Group work by students • Seminars • Tutorials • Videos • Clinical-pathological conferences • Symposiums • Webinars • Self-learning • Assignments	• Workshops • Skill labs • Cadaveric dissection • Models • Laboratory work • Bedside teaching • Emergency or casualty department • Operation theatres • Ward rounds • Community work	• Training • Videos • Role plays • Role modeling • Workshops • Group assignments

PROPOSED ASSESSMENT METHODOLOGIES FOR INTEGRATED BDS CURRICULUM

OVERVIEW:

"Lack of assessment and feedback, based on observation of performance in the workplace, is one of the most serious deficiencies in current medical education practice".

John Norcini and Vanessa Burch 2007

- Assessing the learner is the most important and difficult task for the tutor as students may be able compensate for sub-optimal teaching, but misaligned/poor assessment of their abilities can have longlasting effects on their personal and professional goals.
- Assessment is important not only for students but also for tutors, course/syllabi organizers, and the accrediting body (affiliated university/PM&DC).
- Assessment data informs important decisions related to whether learning outcomes have been achieved to allow progression to the next level of the course.
- More importantly, holistic assessment determines whether the potential graduate is competent and can practice as a safe doctor.
- In curricula which are theme or module based, each module needs to be followed by assessment to determine achievement of learning outcomes defined for that module.
- Assessment can be both summative and formative, thereby using it for grading of students as well as for providing students with feedback to enhance and improve their learning respectively. Knowledge, skills and attitude learned during the modules will need separate tools for assessment.

INTEGRATED ASSESSMENT

- Integrated curriculum must be aligned with integrated assessment policies as it is an instrumental and integral part of curricular development.

ASSESSMENT PROCESS

- Integrated assessment requires an in-depth analysis and understanding of the process. A good starting point for this is seeking to answer important questions, the answers of which will help form the basis of these assessments.

1. Why assess the students?

The purpose of assessment has to be clear and must include assessment for learning (as a learning strategy) and assessment of learning (summative assessment) for progression, remediation or promotion.

2. Who should assess the students?

The stakeholders should include program advisors/organizers, accrediting body, affiliated university, enrolled college, tutors, other health care professionals and students themselves, as well as standardized patients. PM&DC will oversee the assessment process to be implemented by medical universities in their affiliated colleges.

3. What should be assessed?

All the competencies must be assessed. The integrated curricular objectives must be aligned with the content to be assessed according to the context in which it is taught to students. The chosen assessing material will demonstrate what is valued for example knowledge of higher order thinking, clinical skills, behavior/attitudes and professionalism among other requirements.

4. **How the students should be assessed?**

Integrative assessment fosters a wide variety of tools which can be incorporated to assess students. The methods to be used should be:

a. Reliable and consistent
b. Valid in measuring what it is to measure
c. Feasibility according to the resources available
d. Assessment must have an impact on student learning
e. Amenable to appropriate standard setting method

5. **When should the students be assessed?**

The enrolled colleges can devise their own strategy of number of internal assessments to be carried out within the prescribed timelines of the affiliated universities. The University may provide a template of the **"Course, Module or Rotation Objective Assessment Map"** in the assessment procedure document. E

each course will develop an examination blueprint, which will include all competencies and information on the methods, timing, and relative contribution to the final mark of all summative assessments, criteria for passing and remediation must be specified by the university. The final assessment by universities must be within timelines by the accrediting body.

6. **Where the students should be assessed?**

Internal and external assessments must conduct theory examination/practical in appropriate examination venues

ASSESSMENT TOOLS

These tools should assess higher level of cognition like understanding, application, interpretation, analysis and decision making rather than simple recall. Different disciplines will need to develop these assessments together to judge holistic comprehension and ability to practice what is learnt by student. Tools of assessment which can be used for integrated curriculum are as following.

COGNITIVE DOMAIN	PSYCHOMOTOR DOMAIN	AFFECTIVE DOMAIN
1. MCQs 2. Extended matching questions (EMQs) 3. Short Answer Questions (SAQs) 4. Short Essay questions (SEQs) 5. Oral Examination	**Formative Assessment:** a. OSPE b. Mini-Clinical Evaluation Exercise (Mini-CEX) c. Surgical DOPS (Directly Observed Procedural Skills) d. Case Based Discussion **Summative Exam:** a. (OSCE)	The following tools can assess behaviour, communication skills, ethics and professionalism. a. Interviews b. Direct observation of communication skill and behaviour c. OSPE/OSCE d. Portfolios e. Reflections (only for formative assessment)

	b. Practical Examination c. Direct Observation of clinical skills d. Long case e. Short case	

STANDARD 7.2: DIVISION OF INTERNAL ASSESSMNET

THEORY		
S. No	**Scoring Parameters**	**Marks**
1	MCQ.SAQs and OSCE/OSPE	80%
2	Internal Assessment	20%
3	Presentations	
Distributions of Examination Marks (03 Examination in a Year)		
S. No	**Scoring Parameter**	**Marks out of 10%**
1	Exam Theory (150) and Practical (100)	250
2	MCQs	50
3	SAQs/SEQs (12 question out of 09 will have to attempt)	50
4	Internal Assessment Theory	25
5	Practical Exam	100
6	Internal Assessment Practical	25
Allocation of Internal Assessment marks		
Practical (OSCEs & OSPEs)		
S. No	**Scoring Parameter of THEORY**	**Marks out of 10%**
1	Attendance > 90%=3, 89-80%=2,79-70%=1: <70%=0	3%
2	Mid Term/Pre-Prof Exam	3%
	Research	1%
3	*Continuous Assessment (Average Score of MCQs attempted after every Learning session)	3%
S. No	**Scoring Parameter of Practical**	**Marks out of 10%**
1	Attendance > 90%=3, 89-80%=2,79-70%=1: <70%=0	3%
2	Practical Books/Log Books	2%
3	Continous Assessment (Average Scoreof OSPEs/OSCEs attempted after every learning session)	2%
4	Mid Term/Pre-Prof Exam	2%
5	Elective/Selective	1%

- *OSPE to be conducted at the end of each learning module and OSCE to be conducted at the end of each Clinical Rotation. The average of OSPEs and OSCEs will be considered as Continuous Assessment.

a. Mid Term, Final and Annual Examination (Format should be provided).
b. Clinical Clerkship Rotation (Assessment method and format should be provided).
c. Log Books with Grading.
d. OSCE/OSPE/Short Cases/Long Cases (Format should be provided).
e. Quarterly Feedback and Assessment (Format should be provided).
f. Assessment Blueprints for Final Years

IBN-E-SINA UNIVERSITY, MIRPURKHAS
MUHAMMAD MEDICAL COLLEGE

CERTIFICATE
OF INTERNAL ASSESSMENT FINAL YEAR MBBS

Mr./Miss. _____ S/o, D/o_____

Name of Test	Max Marks	Obt Marks	Percentage	Comments
A. SURVIVE				
Survive Weekly Tests				
Assignments				
Post Test Discussion				
Attendance in class				
Total in Survive				
B. TEACHING OSCE				
Teaching OSCE 01				
Teaching OSCE 02				
Teaching OSCE 03				
Teaching OSCE 04				
Total in OSCE				
C. WARD TESTS				
Ward Test Surgery				
Ward Test Medicine				
Ward Test Gynae/Obs				
Ward Test Paeds				
D. PRESENTATION & RESEARCH				
Symposium 4th Year				
Symposium 5th Year				

* Total in survive includes attendance marks too.
* Ward tests include marks for history taking, portfolio, workshops, ward attendance, performance/assistance too.
* Attendance in class and wards (morning & evening) are marked using biometrics.

Prof. Syed Razi Muhammad
Chancellor

STANDARD 7.3: ROTATIONAL PLAN FOR ONE YEAR HOUSE JOB

Department	Rotation
Orthodontics	02 Months
Prosthodontics	02 Months
Operative Dentistry	02 Months
Oral Surgery	02 Months
Diagnosis	01 Months
Periodontology	02 Months
Paediatric Dentistry	01 Months
Total	12 Months

If the sufficient numbers of patients are not available then the procedures should be performed on models or typodonts and a presentation prepared, delivered and submitted.

Note:

- Posting end assessment will be performed at the end of each posting. Clearance is mandatory and subject to passing the assessment.
- At least one research participation is recommended by the end of the year.
- Archiving and record maintaining is mandatory in all departments.
- Records are to be maintained and saved further investigations and shared with other dental institutions as required.
- The above rotation will be flexible depending on facilities available. However rotation in the first four departments listed in the table above is mandatory.

EXAMINATION POLICY

- 75% Attendance in Lectures and OPD
- Submission of Logbook on Time
- Complete Departmental Tasks and Objectives as per schedule and requirement
- Periodontology Final Examination would contain:
    - Written theory examination:

The written examination has 2 parts an MCQ and a short answer or short essay type examination.

- OSCE/OSPE/Viva
- Internal Evaluation

RULES & REGULATIONS FOR EXAMINATION:

- Student must report to the examination hall/venue, 30 minutes before the exam.

- Exam will begin sharp at the given time.
- No student will be allowed to enter examination hall after 15 minutes of scheduled examination time.
- Students must sit according to their roll numbers mentioned on the admit card.
- Cell phones, all electronic gadgets, smart watches, etc., are prohibited in examination hall.
- Student must bring their own stationary for exam.
- Indiscipline in the exam hall is not acceptable.
- Student must not possess any written material or communicate with their fellow students.

PROGRAM EVALUATION & MONITORING: Quality Enhancement Cell with collaboration of Department of Medical/Dental Education is responsible to evaluate the graduate program of BDS which include;

- Faculty feedback
- Student Feedback on Curriculum
- Teachers Feedback on Curriculum
- Student Feedback of Facilitators.
- Analysis of Examination results
- Quality Enhancement Cell

CONTINUOUS DENTAL EDUCATION:

- Department of Periodontology will arrange Case-Presentations and Journal discussions for students to stay updated in Evidence-based Clinical Periodontology.
- Department of Medical education in compliance with Department of Periodontology will arrange workshops for students to improve learning.

STANDARD 7.4: ASSESSMENT POLICIES/EXAMINTAIONS FOR TRADITIONAL CURRICULUM

Examinations are of three kinds:

EVALUATION PLAN			
	Exams	**Pattern**	**Assessment**
1	Each Module	Written test (MCQ and SEQ)	Formative
1	After 7 weeks of Clinical Rotation, Ward test will be conducted	Ward test (OSCE and short case)	Formative
2	At end of 36 weeks	Pre-Prof Exam (MCQ and SEQ) Viva voce as per LUMHS Policy	Formative
3	Annual	University Professional Exam	Summative

1. Formative or Ongoing Assessment:

a. The written examination has 2 parts an MCQ and a short answer or short essay type examination.
b. OSPE examination
c. Viva voce exam.
d. Practical journals, marks for TBLs/PBLs sessions
e. Quizzes and tests, Continuous assessment tests (CATS

MCQ's and SEQ's: Multiple choice question and short essay question test will be used at the end of part of curriculum to assess the learning of knowledge. These all assessment exercises will be formative. The written tests like Multiple-Choice Questions (MCQs) and Short-Essay Questions (SEQs) test formats are used for the assessment of cognitive domain. The MCQs are more objective and essentially select type of item response format. MCQs have a cueing effect, which promotes guessing and leads to higher scores. In addition, writing MCQs of higher cognitive level of problem solving is challenging. On the contrary, the SEQs are more subjective and have a supply or construct type item response format, which does not have any cueing effect and can effectively assess problem solving skills.

OSCE AND SHORT CASE: Short case and OSCE will be used to evaluate clinical skills and procedural skills at the ward end of placement. The OSCE is a method of clinical skill assessment, and it has been reported to be appropriate for assessing learning achievement levels in the psychomotor and emotional domains, which are difficult to evaluate with written examinations.

CLINICAL LOG BOOK: Clinical log book is meant for self-directed learning (SDL) and assessment of students. The clinical logbook includes reflection which helps the students to set educational goals.

MINI-CEX: Mini-CEX is used to assess the clinical skills and problem solving skills of medical students. This is the tool used by clinical teachers. This can assess all three domains, Psychomotor, cognitive and affective. This also used as formative assessment.

INTERNAL ASSESSMENT:

i. The weightage of internal assessment shall be 20% of totals marks.
ii. Continuous internal assessment shall consist of evaluation at the end of each assignments, e.g. stages/sub-stage, class tests etc., attitudinal assessment from educational supervisors.
iii. Assessment of knowledge, Skills and Attitude shall contribute toward internal assessment. Methods used to assess these domains shall include Multiple Choice Questions of one-best type, Short essay questions, Oral/Viva, and Practical/Clinical examinations.
iv. The score of internal assessment shall contribute to the score in the final examination, Final university examination of each subject shall contribute 90 to total score, and the candidate shall pass in aggregate. v. Proper record of continuous internal assessment shall be maintained.

2. **Internal Examinations/Pre-Prof Examinations/Formative Assessment shall be compulsory for students of all classes.** Students who do not appear or fail in the examination will be regarded as students whose courses of instructions are incomplete and unsatisfactory and will not be allowed to appear in the university professional examination for promotion to the next higher class and may also loose the scholarship, if any, granted to them. Pass percentage for Pre-PROF examinations is 50%.
3. **University Examinations**

University Examinations are strictly governed by the statutes and regulations of the Liaquat University of Medical and Health Sciences (LUMHS).

a. First Professional BDS Examination will be held at the end of first academic year.
b. Second Professional BDS Examination held at the end of second academic year.
c. Third Professional BDS Examination will be held at the end of third academic year.
d. Fourth Professional BDS Examination will be held at the end of fourth academic year.

NOTE: Any student who fails to clear first professional BDS examination in four consecutive chances (availed or un-availed on becoming eligible for examination) shall not be eligible for continuation of Dental studies of the BDS Program.

STANDARD-8: CURRICULAR MANAGEMENT

According to PMC; the Curriculum Management is the sixth Standard of National Accreditation Framework for Medical and Dental Schools in Pakistan-2019.
The Muhammad Dental College (MDC) has functional curriculum committee which is duly represented on the Institutional organogram. The TORS of the Dental Curriculum management are as follows:

TERMS OF REFERENCES OF CURRICULUM COMMITTEE (CC)

Office of Accountability	Dean Muhammad Dental College (MDC)
Office of Administrative Responsibility	BDS Program
Approver	College Academic Council
Scope	Compliance with the National Accreditation Framework For Medical and dental Schools in Pakistan-2019

Date of Formation: September-2019

Mandate of DCC: The Curriculum Committee receives its mandate from Academic Council. The Chairman is at least Professor elected by curriculum committee. It has an executive function, making and enacting policies relevant to the design and delivery of the BDS program. It ensures that the program is aligned with the institute's vision and mission statements and that it complies with relevant accreditation standards of PMDC, LUMHS and HEC. It has responsibility for the design, management, integration, implementation, evaluation, and continuous improvement of the dental curriculum.

Reporting:

- The BDS Curriculum Committee reports on a regular basis, via the Chair of the Committee, its decisions and recommendations to the College Academic Council. It provides written annual report to the principal MDC.
- It participates in the accreditation interim review process in monitoring compliance with accreditation standards and in preparing for survey visits.

Decisions Taking: The decisions will be taken by consensus, failing which it will be referred to the Dean. Decisions will be taken in the meetings of CC, following which it would be moved to DBOS, then FBOS and after approval will be submitted to CAC for final approval.

Frequency of meetings: As required or at least quarterly

Mode of Communication:

- Meetings
- Emails
- Workshops

Committee Designations:

- Chairman of the DCC: Please Refer the Organogram
- Members:
- Representation of Medical Education
- Representation of Basic Dental Sciences (Anatomy, Physiology, Biochemistry, Pathology, Pharmacology, General Medicine, General Surgery, Dental Material, Oral Biology & Tooth Morphology).
- Representation of Dental Clinical Sciences (Oral Maxillofacial Surgery, Prosthodontics, Orthodontics, Periodontology, Oral Medicine, Oral Radiology, Oral Pathology, Operative Dentistry, Paediatric dentistry,).
- Representation of Community & Preventive Dentistry
- Representation of Behavioural Sciences
- Representatives of Students, Alumni and House Officers

Invited Members:

Medical Educationist both nationally and internationally will be invited from time to time to offer their expert advice.

While the BDS -CC has the primary authority for all of the above, it is able to delegate responsibility of certain elements of the accreditation standards to sub-committees.

Its standing subcommittees are:

- Student Awards/Promotions Committee
- Student Assessment Committee/Examination Cell.
- Program Evaluation and Curricular Outcomes Committee (Quality Assurance Committee).
- Student Elective Committee (House Job, Rotation to others Institute)

Number of Members:

Criteria for Selection of Members: Chairman/Incharge / Subject specialist

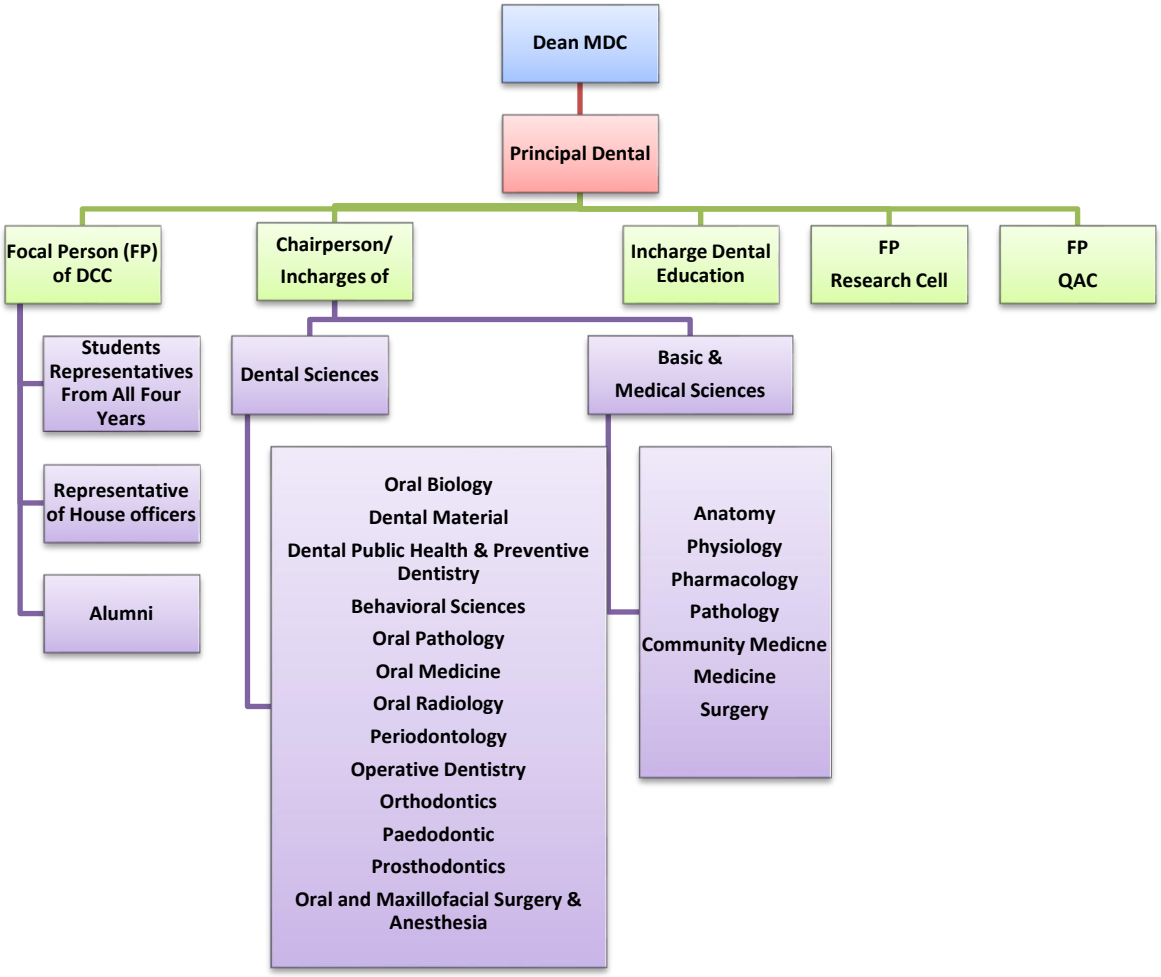
Review of Terms of Reference and Membership: Annually or when required.

Major Responsibilities: The major responsibilities of CDC Committee are:

- To revise and development of study guides of the BDS extended Program, mode of Information Transfer at all levels and incorporate the changes according to the PMDC/HEC/LUMHS guidelines.
- To oversee the Revision and Development of Learning objectives of the BDS extended Program, mode of Information Transfer at all levels.
- The selection and sequencing of educational content; the program length, the curriculum structure, outcome and desired assessment tools.
- To oversee the delivery of the curriculum in hospital area (MDC and Dental OPD), MITs, formulate the academic schedule, induction and designated the trained faculty. (Clinical Supervision).
- To ensure that planning, implementation and evaluation of the curriculum is in order to ensure that educational outcomes are achieved. (53).
- To ensure that planning, implementation and evaluation of the innovations in the curriculum. (54).
- To participate in the student Award/promotion policies, set the standard setting procedure of achievement/assessment and select the appropriate tools for assessment based on the learning objectives such as; (knowledge, attribute and skills).
- To participate in the students' academic progress and make the final decisions for the promotion and graduation. (Student Achievement).
- To formulate the document describing the Content, extent and sequencing of courses and other components of the Curriculum Map-(Standard-5).
- To participate in program evaluation by ensuring the Student Feedback on Learning activities and Learning climate.
- To ensure that the mission statement should reflect the vision statement of the Institute which demonstrate the clear Institutional Commitment to Social accountability. (Standard-1).
- To ensure the Student learning Outcomes which are in congruence with the mission of the Institute and are contextually appropriate for health care delivery in Pakistan. (Standard-2).
- To ensure that the Outcomes of the Program differentiates the Institution from Other Similar Institute. (Standard-2).
- To ensure that the curriculum is aligned with the University Vision, Institutional Mission and Local and National needs for contextual relevance. (Standard-4).
- To ensure that the develop curriculum is implemented and meets the Standards of PMDC. (Standard-4).
- To participate and implement the Curriculum which is Outcome Based, Patient Centered. (Standard-4).
- To ensure that the educational Content and Its delivery are aligned with the Competencies and or/outcomes agreed upon by the Institution. (Standard-5).

- To ensure that adequate supervision of learning experiences is provided throughout required laboratory work, skills lab, chair side teaching, clinical rotations and field visits. (Standard-6).
- To ensure the appropriate selection and sequencing of educational content; the program length, the curriculum structure, outcome and desired assessment tools. (Standard-7).
- To monitor the quality of learning and assessment activities across clinical sites to ensure that there is a comparability of experiences (Comparability of Education and Assessment). (Standard-7).
- To ensure student representation and appropriate participation in educational committees. (Standard-8).
- To ensure processes and schedules for review and update of all academic activities through an established mechanism of Program Evaluation. (Standard-10).
- To review the results of program evaluation on a regular basis and student assessments to ensure that the gaps are adequately addressed in the curriculum in consultation with the Curriculum Committee. (Standard-10).
- To revise the Evaluation Findings and incorporate the Changes in the educational Content by addressing the unintended gaps and eliminating the unnecessary redundancies) and to revise the teaching and assessment methods. (Standard-10).
- To consider the new development is science and healthcare delivery to review the learning objectives and curriculum content.(Standard-10).
- To consider new developments in medical education (Theory and Practices; review proposals for innovations and approves pilot projects and modification to the Curriculum. (Standard-10).
- To certifies the adequacy of educational resources (such as study space, digital learning materials, access to the internet and those that are unique to clinical teaching contexts (e.g. on-call rooms, remedies in situations of exposures to occupational hazards and immunization protocols.(Standard-11).
- To provide opportunities for multi-disciplinary and applied research. (Standard-12).
- Revise the horizontal and vertical integration of curriculum in all four years of Dental undergraduate program as per the accreditation requirement.
- To incorporate the Professionalism/Ethics, Research, Leadership, Patient Safety and Communication Skills.
- Execution of Self Academic Audit-Annually along with the members of Quality Assurance Committee.

ORGANOGRAM OF THE DENTAL CURRICULUM COMMITTEE



STANDARD-9: EXAMINATION QUALITY ASSURANCE

The committee of quality assurance is supervising and implementing the pre-, per- and post- exam quality assurance procedures in assessment.
In MDC Examination are conducted by LUMHS. Hence the LUMHS Examination Quality Assurance Steps are taken at LUMHS.

a. Pre Exam QA

- **Blue printing:** of the assessment will be carried out to ensure utility of each assessment tool (validity, reliability, feasibility, acceptability and education impact).
- **Item review:** All exam items and their key will be reviewed by the subject experts as well as by DME for alignment, clarity, and spelling and grammatical errors.
- **Faculty Development:** for training and calibration of the examiners in item writing.
- **Orientation:** Students and Examiners will be given appropriate orientation of the exam format.
- **Complete exam secrecy** will be ensured by keeping strict security checks.(software)

b. Intra Exam QA:

- **Assessment Administration:** Assessment will be conducted in the central assessment hall in a conducive and standardized environment under full monitoring to prevent any misconduct and cheating.
- **Instructions:** Written and practical exam student instructions and vignettes will be checked by subject experts and DME for clarity.

c. Post Exam

- **Item analysis:** Difficulty, discrimination and reliability analysis will be conducted.
- **Item Banking:** Continuous review and development of item bank based on post-hoc analysis
- **Feedback:**
    - Feedback will be obtained from the examiners and the students regarding the examinations (format, difficulty, environment etc.)
    - Post exam analysis report and feedback will be sent to the respective department and examiners.
- **Result:** include detailed component analysis with mean, average and standard deviation divided in components, as well as qualitative information like strengths and weakness , Use result for program evaluation
- **Result Announcement Policy:** Examination decision of Pass/Fail will be put up on student's notice board and the detailed analysis can be collected from the Examination Department of the Instiyute.
- **Failure Students:** In the final exam, if a candidate fails in any one or more components, he/ she will have to sit for the supplementary exam.
- **Appeal:** Students have the right to appeal if they don't agree to the results. The appeals will be handled according to the LUMHS policy.

STANDARD -10: PROGRAM EVALUATION AND CONTINOUS RENEWAL /CURRICULUM GOVERNANCE

Evaluation is integral to the implementation and development of educational activities, whether national program, an individual school's curriculum or a piece of work undertaken by a teacher with his/her students.

The evaluation of the BDS program is carried out at two different times; one is as formative evaluation in which teacher can evaluate the applied teaching strategy after the interactive session in the form of quiz or class test. Evaluation is performed by the help of descriptive studies, pre and post test to compare the learning approaches. The outcome of this formative evaluation is then incorporated to revise the teaching plan .The summative evaluation is performed for QAC for the teachers by the students and from the teachers regarding the curriculum at the end of the year or as per defined policy. The internal evaluation is conducted by the help of CIPP evaluation model.

The Curriculum Feedback and Faculty Governance is carried out by the department of Quality Assurance of MDC in collaboration with Muhammad Medical College, Department of QAC.

TERMS OF REFERENCES OF QUALITY ASSURANCE CELL (QAC/QEC) MMC

Office of Accountability	Director Quality Assurance Cell
Office of Administrative Responsibility	BDS Program
Approver	Dean MDC
Scope	Compliance with the Accreditation Standards Proforma Pakistan Medical Commission-2019

Date of Formation: 2019

Mandate of Quality Assurance Cell-QAC:

The establishment of QAC is to develop planned & systematic review process of an institution/program to determine whether or not acceptable standards of education, scholarship & infrastructure are being met, maintained & enhanced. A sustainable quality assurance program enhances employment opportunities.

Rationale of the establishment of QAC: To comply with the quality standards & continuous program monitoring, faculty monitoring, student evaluation about teachers, student evaluation of curriculum, departmental review, faculty feedback, employer feedback, Course review report etc.

Reporting: The QAC reports on a regular basis to Dean (MDC). It provides a written annual report to the Principal via Focal Person of MDC. It participates in the facilitation and leading of innovative & applied program evaluation exercises and analysis as per the designed proforma and QAC calendar.

Decisions Taking: The decisions will be taken by requirement & directives of accreditation standards or PM&DC, LUMHS & HEC. Decisions will be taken in the meetings of QAC, following which it would be moved to FBOS and after approval will be submitted to CAC (College Academic Council) for final approval.

Frequency of meetings: As required or at least quarterly

Mode of Communication:

- Meetings
- Emails
- Workshops

Committee Designations:

i. Director of the QAD:
ii. Please Refer the Organogram
iii. Members:
   - Dean MDC
   - Principal
   - Focal Person from Department of Dental Education
   - Subject specialist of all Basic Sciences
   - Subject specialist of all clinical Dental sciences department

Number of Members: As per Institute Decision

Criteria for Selection of Members: Professor/HOD of the Department

Review of Terms of Reference and Membership: Annually or when required.

Major Responsibilities:

1. BDS Program review
2. Institutional review
3. Employer feedback
4. Student's Feedback
5. Student perception
6. Faculty feedback

STANDARD-10.1: CURRICULUM AND FACULTY GOVERNANCE

This CIPP model emphasizes “learning-by-doing” in which the corrections are incorporated to solve the problematic features of the program. The CIPP model can provide the program effectiveness and reforms for continuous improvement and can guide in programs need assessment, planning, monitor the process of implementation and feedback.

Context, Input, Process, and Product (CIPP) Evaluation Model for Quality Practice	
Quality Standards	**CIPP Framework**
Processes and schedules for review and update of all academic activities through an established mechanism of program evaluation.	Context evaluation: Identify learning goals. Input evaluation: Design and implement instructional strategies according to the learning goals. Process evaluation: log books, assessment outcome. Product evaluation: Students result.
Regularly review results of evaluation and student assessment to ensure that the gaps are adequately addressed in the curriculum in consultation with curricular Committee.	
Allocate resources to address deficiencies and continuous renewal of program.	
Have program Evaluation in compliance with PMC accreditation standard.	
Ensure that that the students, faculty and administration are involved in program evaluation.	
Have a mechanism for curriculum monitoring and Progressive improvements.	
Ensure that the amendments based on results of program evaluation findings are implemented and documented.	

The program will be evaluated internally using the participation based (CIPP) model after the first cycle to make decisions regarding improvements or maintenance of the program. After three cycles external evaluators will be invited. During paper moderation for summative exam, the external evaluator checks the questions and gives a feedback regarding the question reliability acceptability and its educational impact.