



KHYBER MEDICAL UNIVERSITY

DENTAL TECHNOLOGY CURRICULUM

STUDY GUIDE SEMESTER 6

16 Weeks Activity Planner

2024-25

CENTRAL CURRICULUM & ASSESSMENT COMMITTEE FOR NURSING,
REHABILITATION SCIENCES & ALLIED HEALTH SCIENCES

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THE END

Team for TOS Development

S.No.	Name	Designation/Institute
1.	Dr. Sayyed Hamid Habib	Director KMU-IHS Mardan
2.	Mr. Muhammad Faisal Khan	(Team Lead) Coordinator Dental Technology KMU-IPMS Peshawar
3.	Ms. Wania Aiman	Demonstrator Dental Technology KMU-IPMS Peshawar
4.	Mr. Mazhar Ali	Demonstrator Dental Technology KMU-IHS Kohat
5.	Ms. Haleema Saeed	Demonstrator Dental Technology KMU-IHS Islamabad
6.	Mr. Fawad Ahmad	Lecturer Dental Technology KMU-IHS Hazara
7.	Mr. Ali Khan	HOD (AHS) Jibran College of Health Sciences Swat.
8.	Mr. Muhammad Numan	Asst. Professor RCAHS, Peshawar

S.No.	Reviewed by	Designation/Institute
1.	Muhammad Asif Zeb	Lecturer MLT, KMU-IPMS
2.	Mr. Babar Ali	Demonstrator Cardiac Perfusion, KMU-IPMS

Vision & Mission

Khyber Medical University (KMU) Vision:

Khyber Medical University will be the global leader in health sciences academics and research for efficient and compassionate health care.

Khyber Medical University (KMU) Mission:

Khyber Medical University goals are to encourage professional aptitude through learning and innovation for providing comprehensive quality health care to the nation.

Institute of Paramedical Sciences Peshawar (IPMS-PESH) Mission:

To produce allied health professionals who excel in their skills, research, compassionate care, and community involvement, thereby enhancing the healthcare system

Sixth Semester Subjects for BS Dental Technology

S. No	Subjects	Duration
1	DEN-613-Endodontics 3 (2+1)	16 weeks
2	DEN-614-Complete Denture Prosthodontics 3 (2+1)	16 weeks
3	DEN-615-Orthodontics-I 3 (2+1)	16 weeks
4	DEN-616-Paediatric Dentistry 3 (2+1)	16 weeks
5	DEN-619-Fundamental of Implantology 3 (2+1)	16 weeks
6	DEN-621-Minor Oral Surgery- II 3 (2+1)	16 weeks

DEN-613-Endodontics 3 (2+1)

COURSE DESCRIPTION:

This course will introduce students to the basic concept of endodontics and the basic techniques, principles and instrumentation used for endodontic procedures. Students will learn about vital pulp therapies including direct pulp capping, indirect pulp capping, and apexification. Students will learn about the different endodontic diagnostic procedures pulp testing procedures and instruments used for it. Students will also learn about the disease of pulp and periradicular spaces. Students will learn about the internal morphology of tooth and root canals. This subject further focuses on the endodontic procedures regarding pulpal therapies like pulpectomy. The subject further elaborates the process and techniques for access opening, cleaning, and shaping of canals and different instrumentation used in the concern procedure. Furthermore, this subject elaborates on the process of obturation and intracanal medication use in endodontics.

COGNITIVE DOMAIN:

By the end of this course, students should be able to

1. Recall anatomy, physiology and pathology of pulp and periodontium
2. Interpret radiographs, pulpal tests, and other diagnostic results
3. Comprehend the underlying principles and techniques of endodontic treatment
4. Critically evaluate the endodontic treatment options and prognosis
5. Analyze and manage the complication that arise during endodontic treatment
6. Develop innovative solutions for complex endodontic cases

PSYCHOMOTOR DOMAIN:

By the end of this course, students should be able to

1. Handle and use endodontic instrument.
2. Prepare access cavities on mounted teeth using drills and burs
3. Negotiate and shape root canals using endodontic files and reamers
4. Manipulate endodontic instruments with precision and control
5. Sterilization of endodontic instruments to prevent cross contamination

AFFECTIVE DOMAIN:

By the end of this course, students should be able to

1. Show a professional attitude towards patients, colleagues and patients
2. Show empathy and understanding towards patient anxiety and pain during endodontic treatment
3. Take responsibility for one own action, decisions during treatment
4. Respect and value patient autonomy and dignity during endodontic treatment
5. Develop strategies to manage patient anxiety during treatment and procedure

TABLE OF SPECIFICATIONS

S.No	Weeks	Contents	Learning Outcome	Domain			MIT's	Time/Hours	Assessment	No of Items
				C	P	A				
TOPIC: CLINICAL DIAGNOSTIC METHODS										
1	Week-1	Definition	Define endodontic	C1			Interactive Lecture	2	MCQs	4
		History taking	Discuss history taking and records	C1						
2		Clinical diagnostic methods	Describe most common clinical diagnostic methods use in endodontic	C2						
		Pulp testing	Describe different types of pulp testing,	C3						
4		Practical performance	Perform the palpation and percussion for the evaluation of pulpal and periodontal health		P4		Hands on Demo	1	OSPE	
5	SOPs compliance	Take care of instrumentation use for evaluation of pulpal health			A4	Role Play				
TOPIC: CLINICAL CLASSIFICATION OF PULPAL DISEASE										
6	Week-2	Pulpal disease	Define Pulpitis	C1			Interactive Lecture	2	MCQs	5
		Causes of pulpitis	Discuss the most common causes of pulpitis	C2						
7		Types of pulpitis	Describe the acute and chronic stage for both reversible and irreversible pulpitis	C3						
		Pathophysiology and treatment	Describe their sign and symptoms, histopathology, diagnosis, treatment and prognosis	C3						
8		Pulpal necrosis and degeneration	Explain the condition pulpal necrosis and pulpal degeneration	C4						
9		Practical performance	Perform the process of percussion and palpation and identify if there is any mobility or tenderness in tooth		P4		Hands on Demo	1	OSPE	
10		SOPs compliance	Take care of instrumentation use for evaluation of pulpal health			A4	Role Play			
TOPIC: CLINICAL CLASSIFICATION OF PERIAPICAL DISEASE										
11	Week-3	Peri-apical disease	Describe symptomatic and asymptomatic per apical disease	C2			Interactive Lecture	2	MCQs	5
12		Periodontitis	Discuss acute peri-apical periodontitis	C2						
13		Difference between acute apical periodontitis and abscess	Describe the sign and symptoms, histopathology, treatment and prognosis for per apical periodontitis and phoenix abscess,	C4						
14		Cystic apical periodontitis	Discuss sign and symptoms for cystic apical periodontitis Describe treatment option for cystic apical periodontitis	C2						

15		Practical performance	Demonstrate the radiographic findings related to pulpal and periodontal disease		P4		Demo	1	OSPE		
16		SOPs compliance	Take care of radiographs and other diagnostic instrument use in endodontic			A4	Role Play				
TOPIC: PULPAL THERAPY FOR YOUNG PERMENET TEETH											
17	Week-4	Vital pulp therapies	Discuss different types of vital pulp therapies	C1			Interactive Lecture	2	MCQs/SEQs	5	
18		Classification of vital pulp therapies	Classify vital pulp therapies on the base of material	C3							
19		Direct pulp capping	Describe direct pulp capping	C4							
		Indirect pulp capping	Describe indirect pulp capping								
20		Practical performance	Perform the procedure of indirect pulp capping on mounted teeth			P4		Hands on Demo	1	OSPE	
21		SOPs compliance	Take care of models and instrumentation use for vital pulp therapies				A4	Role Play			
TOPIC: PULPOTOMY, APEXIFICATION AND APEXOGENESIS											
22	Week-5	Pulpotomy	Define pulpotomy Define rationale and objective for pulpotomy	C1			Interactive Lecture	2	MCQs/SEQs	5	
23		Types of pulpotomy	Explain clinical protocols for partial pulpotomy Explain clinical protocols for complete pulpotomy	C3							
24		Classification	Classification of pulpotomy on the base of material use	C4							
25		Apexification	Discuss the process of apexification and its clinical protocols	C4							
		Apexogenesis	Define the process of apexogenesis								
26		Practical performance	Perform the procedure of pulpotomy			P4		Hands on Demo	1	OSPE	
27		Professionalism	Demonstrate professionalism and precision performing endodontic procedures				A4	Role Play			
TOPIC: INTERNAL MORPHOLOGY OF TOOTH AND PULP CAVITY											
28	Week-6	Internal tooth anatomy	Define pulp cavity	C1			Interactive Lecture	2	MCQs/SEQs	5	
29		Root canals	Describe the root canals and access foramen	C2							
30		Relationship between tooth anatomy and access opening	Describe the Relationship between tooth anatomy and access opening	C3							
32		Practical performance	Demonstrate the internal tooth anatomy through charts, models and videos			P4		Demo/video	1	OSPE	
33		SOPs compliance	Adopt how to take care of charts and models				A4	Role Play			
TOPIC: CLINICAL GUIDELINES FOR ACCESS CAVITY PREPERATION											
34	Week-7	Clinical Guidelines	Clinical guidelines for access cavity preparation and pre-operative consideration	C1			Interactive Lecture	2	MCQs/SEQs	4	
35		Clinical steps	Describe the clinical steps in access cavity preparation	C2							

36		Guidelines for access opening	Discuss the pre-operative assessment, occlusal anatomy and complicating factors	C3						
39		Practical performance	Perform access cavity preparation on mounted teeth		P4		Hands on Demo	1	OSPE	
40		SOPs compliance	Adopt how to take care of instrumentation use for access cavity preparation			A4	Role Play			
TOPIC: ACCESS CAVITY PREPARATION FOR MAXILLIARY TEETH										
41	Week-8	Maxillary anterior teeth	Explain the clinical guidelines for access cavity preparation of maxillary anterior teeth	C2			Interactive Lecture	2	MCQs/SEQs	4
42		Maxillary posterior teeth	Describe the clinical guidelines for access cavity preparation of maxillary posterior teeth	C2						
44		Practical performance	Perform access cavity preparation on mounted maxillary teeth		P4		Hands on Demo	1	OSPE	
45		SOPs compliance	Adopt how to take care of instrumentation use for access cavity preparation			A4	Role Play			
TOPIC: ACCESS CAVITY PREPARATION FOR MANDIBULAR TEETH										
46	Week-9	Mandibular Anterior teeth	Describe the clinical guidelines for access cavity preparation of mandibular anterior teeth	C2			Interactive Lecture	2	MCQs/SEQs	4
47		Mandibular posterior teeth	Explain the clinical guidelines in access cavity of mandibular posterior teeth	C2						
48		Anomalies	Explain the anomalies affecting the morphology of pulp cavity	C4						
50		Practical performance	Perform access cavity preparation on mounted mandibular teeth		P4		Hands on Demo	1	OSPE	
51		SOPs compliance	Adopt how to take care of instrumentation use for access cavity preparation			A4	Role Play			
TOPIC: PULPECTTOMY, CLINICAL TECHNIQUES AND PRECEDURE										
52	Week-10	Pulpectomy	Explain the procedure of pulpectomy	C2			Interactive Lecture	2	MCQs/SEQs	4
53		Instrumentation	Describe the instrument use for pulpectomy	C2						
54		Shaping of radicular spaces	Explain the goals of shaping and cleaning of radicular spaces	C3						
56		Practical performance	Perform the procedure of pulpectomy on single rooted tooth		P4		Hands on Demo	1	OSPE	
57		Empathy	Show empathy and understanding towards patient anxiety and pain during endodontic treatment			A4	Role Play			
TOPIC: CANAL PREPARATION, CLEANING AND SHAPING										
58	Week-11	Canals preparation	Describe the standardized technique for cleaning and shaping of peri radicular space	C3			Interactive Lecture	2	MCQs/SEQs	4
59		Instrumentation	Discuss endodontic instrument for shaping and cleaning of canal	C2						
60		Classification of endodontic instrument	Classify the endodontic instrument based on method of use	C2						

			hand operated instrument, engine driven instrument, sonic and ultrasonic instrument							
62		Practical performance	Perform the procedure of canal preparation on single rooted tooth		P4		Hands on Demo	1	OSPE	
63		Professionalism	Demonstrate a professional attitude towards patients, colleagues and other staff members			A4	Role Play			
TOPIC: INSTRUMENTATION GUIDELINES AND IDENTIFICATION OF WORKING LENGTH										
64	Week-12	Instrument guidelines	Explain the clinical guidelines for instruments use for canal shaping	C2			Interactive Lecture	2	MCQs/SEQs	4
65		Shaping guidelines	Explain the clinical guidelines for shaping and cleaning of root canals	C2						
66		Technique for root canal shaping	Elaborate different techniques use for root canal shaping	C3						
67		Working length measurement	Explain different methods use for determining working length	C2						
68		Practical performance	Perform the techniques for identification of working length using radiograph		P4		Hands on Demo	1	OSPE	
69		Professionalism	Demonstrate a professional attitude towards patients, colleagues and patients			A4	Role Play			
TOPIC: IRRIGATION AND INTRACANAL MEDICAMENTS										
70	Week-13	Irrigants	Explain the ideal requirements of irrigant use in endodontic procedures	C2			Interactive Lecture	2	MCQs/SEQs	5
71		Types of irrigants	Describe the most common types of irrigants material use in endodontic procedure	C2						
s72		Clinical guidelines	Describe the clinical guidelines for the processes of irrigation	C3						
73		Intracanal medicaments	Explain different types of intracanal medication and clinical guidelines for their use	C4						
74		Temporary filling material	Elaborate most common temporary filling material use in endodontic procedure	C4						
75		Practical performance	Perform the process of irrigation and medication placement during your visit to endodontic ward		P4		Hands on Demo	1	OSPE	
76		Communication	Communicate properly with patient regarding the treatment option for endodontic disease			A4	Role Play			
TOPIC: OBTURATION AND CANAL SEALING										
77	Week-14	Obturation	Define the processes of obturation	C1			Interactive Lecture	2	MCQs/SEQs	4
78		Explanation	Explain the clinical criteria for the process of obturation	C2						
79		Materials	Elaborate different kind of material use for the processes of obturation	C3						
80		Clinical technique	Describe different types of clinical technique use for obturation	C4						
81		Root canal sealers	Elaborate the root canal sealers explain the clinical technique for root canal sealing	C4						

82		Practical performance	Perform the processes of obturation and root canal sealing on your visit to Endodontic ward		P4		Hands on Demo	1	OSPE	
83		Professionalism	Demonstrate a professional attitude towards patients, colleagues and patients			A4	Role Play			
TOPIC: FAILURES IN ENDODONTICS										
84	Week-15	Endodontic failures	Elaborate common endodontic failures occur during procedure	C1			Interactive Lecture	2	MCQs/SEQs	4
85		Procedural error	Procedural error related to access opening of pulpal space in canal shaping and cleaning	C2						
86		Management of endodontic failures	Management and prevention of endodontic failures	C3						
89		Practical performance	Demonstrate the procedural error occur in endodontic treatment through radiograph		P4		Demo	1	OSPE	
90		Professionalism	Demonstrate a professional attitude towards patients, colleagues and patients			A4	Role Play			
TOPIC: ENDO-PERIO LESIONS										
91	Week-16	Endo-perio lesions	Explain the endo-perio lesions and its etiology	C1			Interactive Lecture	2	MCQs/SEQs	4
92		Classification	Classify endo-perio lesions	C2						
93		Treatment	Elaborate the best possible treatment options for endo-perio lesions	C3						
94		Internal and External resorption	Define the internal and external resorption explain the etiology and treatment options for internal and external resorption	C3						
95		Practical performance	Demonstrate the endo perio lesions through models charts and radiographs		P4		Demo	1	OSPE	
96		SOPs compliance	Adopt how to take care of charts, models and radiographs			A4	Role Play			

Recommended Books:

1. Operative dentistry by M.A marzouk , first edition
2. Art and science of operative dentistry by sturdevant, seventh edition

Assessment Breakdown				
S. No	Course Content	No of Mcqs	No of OSPE/OSCE Stations	Interactive/Static
1.	Clinical diagnostic methods	04	01	Static
2.	Clinical classification of pulpal disease	05	01	Static
3.	Clinical classification of peri-apical disease	05	01	Static
4.	Pulpal therapy for young permanent teeth	05	01	Static
5.	Pulpotomy, apexification and apexogenesis	05	01	Static
6.	Internal morphology of tooth and pulp cavity	05	01	Interactive
7.	Clinical guidelines for access cavity preparation	04	01	Static
8.	Access cavity preparation for maxillary teeth	04	01	Static
9.	Access cavity preparation for mandibular teeth	04	01	Interactive
10.	Pulpectomy, clinical technique and procedure	04	01	Static
11.	Canal preparation, cleaning and shaping	04	01	Interactive
12.	Instrumentation guideline and identification of working length	04	01	Static
13.	Irrigation and intracanal medicaments	05	01	Static
14.	Obturation and canal sealing	04	01	Static
15.	Failures in endodontics	04	-	-
16.	Endo-perio lesions	04	-	-
TOTAL	16	70	14	14

DEN-614-Complete Denture Prosthodontics 3 (2+1)

COURSE DESCRIPTION:

In this course students will learn the concepts and procedures involved fundamental concepts of prosthodontics with a focus on the design, fabrication, and insertion of complete dentures. It covers the biological and mechanical considerations of edentulous ridge, Tissue Reaction to Complete Denture, Component Parts of Complete denture, material selection, Steps in the fabrication of Complete Denture, techniques and designing dentures. Practical skills such as constructing wax patterns, casting metal frameworks, and repairing dentures are emphasized throughout the course. The course aims to develop students' theoretical knowledge, technical skills, and professional attitudes in prosthodontics. By the end of the course, students will be proficient in understanding and applying the principles of complete denture design and fabrication. They will gain the skills necessary to create functional, aesthetic, and comfortable dentures, while also addressing the biological needs of edentulous patients. Students will be prepared to provide high-quality care for patients requiring complete dentures, from initial consultation through to the final insertion.

COGNITIVE DOMAIN:

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

1. Recall basic concepts of complete dentures, such as the components and steps involved.
2. Explain the biomechanics of the edentulous state and tissue reactions to dentures.
3. Use knowledge to describe diagnostic impressions and secondary impressions in the context of complete denture fabrication.
4. Analyze the impact of jaw relation and centric jaw relation methods on denture fit and function.
5. Evaluate the different types of articulators and their role in recording jaw relations and ensuring accurate occlusion.
6. Pay attention to the significance of accurate diagnostic impressions and proper jaw relation in denture success

PSYCHOMOTOR DOMAIN:

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

1. Actively participate in hands-on procedures, like fabricating trays and taking secondary impressions, while observing patient comfort
2. Set up workstations and prepare necessary materials for procedures like jaw relation recording and special tray fabrication.
3. Follow step-by-step procedures under guidance to fabricate special trays and make secondary impressions.
4. Independently fabricate a special tray, record jaw relations, and adjust the try-in denture for proper occlusion.
5. Perform intricate tasks like relining and rebasing dentures with precision and ensure functional occlusion during the complete denture insertion.
6. Organize and integrate professional standards for denture fabrication, including careful handling of materials, patient interactions, and clinical documentation

AFFECTIVE DOMAIN:

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

1. Value the importance of proper tissue management and patient care in achieving functional and comfortable dentures.
2. Show respect for patients' individual needs during denture selection and fitting.
3. Display teamwork and collaboration in laboratory and clinical settings.
4. Commit to lifelong learning and staying updated with advances in prosthodontics.

TABLE OF SPECIFICATIONS

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time / Hours	Assessment	No of items
				C	P	A				
TOPIC: INTRODUCTION TO COMPLETE DENTURES										
1	Week-01	Introduction	Definition of complete dentures and their component parts.	C1			Interactive Lecture/SGD	2	MCQS	6
3		Function of Complete Denture	Understand and recall the primary functions that complete dentures serve in restoring oral health and improving patient well-being.	C2						
4		Component Parts Different types	Explain the function of each component part in a complete denture. Advantages and Disadvantages of each	C3						
8		Practical performance	Learn to identify the components of complete dentures and practice taking initial impressions of edentulous arches.		P4		Demo/Charts/Video	1	OSCE/ OSPE	
9		Affective Learning	Appreciate the importance of accuracy in denture fabrication and develop empathy for patients' comfort and care needs.			A3				
TOPIC: BIOMECHANICS OF EDENTULOUS STATE										
10	Week-02	Introduction	Biomechanical Consideration involved in the edentulous state	C2			Interactive Lecture/SGD	2	MCQS	4
11		Treatment Objective of Complete Denture Biological objective	Maintenance of oral tissue health, prevent bone resorption, and ensure proper function without harming remaining structures. Design and fabricate a denture that ensures	C3						

		Mechanical objective	stability, retention, and efficient function during chewing and speaking.								
12		Biomechanical Principal	Explore the concepts of stability, retention, and support in edentulous arches and their relationship to denture design.	C4							
14		Practical performance	Perform practical demonstrations on how dentures must be designed to accommodate these biomechanical factors.		P4		Hands-on Demo	1	OSCE/ OSPE		
15		Affective Learning	Empathy and professionalism are developed through the analysis of case studies, highlighting how biomechanics influence treatment planning and denture design			A4	Role play				
TOPIC: TISSUE RESPONSE TO COMPLETE DENTURE											
16	Week-03	Tissue Response	Define the tissue response to the complete denture	C1			Interactive Lecture/S GD	2	MCQS	6	
17		Types of tissue responses	Discuss the different types of responses to the complete denture	C3							
		Direct Sequelae of Wearing Denture	Understand the immediate effects of dentures on the oral tissues								
		Indirect Sequelae of Wearing Denture	Recognize the long-term effects of dentures								
18		Preventive Measure	To understand, appreciate, and demonstrate the proper techniques for denture care to prevent complications and maintain oral health.	C4							
19		Practical performance	Demonstrate tissue responses to dentures using charts, models, and videos to visually illustrate the effects on oral tissues.			P4		Demo/ Charts/ Video	1		OSCE/ OSPE
20	SOPS Compliance	Adopt how to take care of charts and models				A4	Role play				
TOPIC: DIGNOSTIC IMPRESSION IN COMPLETE DENTURE											
21	Week-04	Diagnostic Impression	Define Diagnostic Impression and Cast	C1			Interactive Lecture/S GD	2		4	
22		Making The Impression	Learn to accurately capture the shape and details of the edentulous arch to create a precise mold for denture fabrication.	C3							
23		Making Diagnostic Cast and Surveying	Learn to create accurate diagnostic casts and use surveying techniques to plan the design and fit of complete dentures.	C3							
		Ideal Requirement and purpose of Diagnostic cast	Recognize the importance of accurate diagnostic casts in evaluating edentulous arches and guiding effective denture design for optimal fit and function.	C3							
24		Practical performance	Accurately making diagnostic impressions, creating diagnostic casts, using surveying			P4		Demo/ Video	1		OSCE/ OSPE

			techniques, and understanding the ideal requirements for effective denture design.							
25		SOPs Compliance	Accurate impression taking, proper material handling, clean technique, and precise surveying for denture planning.			A3	Role play			
TOPIC: PRIMARY IMPRESSION MAKING IN COMPLETE DENTURE										
26	Week-05	Introduction and brief classification of impression material	To understand the types and classification of impression materials used in dentistry for creating accurate dental replicas.	C3			Interactive Lecture/SG D	2	MCQS	6
27		Principal of Impression Making	To grasp the key principles of accurate and effective impression making.	C2						
28		Objective of Impression making	Capturing precise details of oral structures for successful dental treatment.	C4						
29		Recording the Final Impression	To understand and apply the technique for recording a final impression with accuracy and precision for creating dental restorations.	C3						
30		Refining The Primary Impression	To refine the primary impression for improved accuracy and detail.	C3						
32		Practical performance	Take an accurate primary impression of the edentulous arch using an appropriate material		P2		Hands-on Demo/ Video	1	OSCE/ OSPE	
33		SOPs Compliance	Prepare the tray, load the impression material, seat the tray correctly to capture the full contour of the edentulous arch, and ensure proper retention and comfort during the impression process.			A3				
TOPIC: LAB PROCEDURE PRIOR TO MASTER IMPRESSION MAKING										
34	Week-06	Finishing the Primary Cast	To refine and finish the primary cast by removing any imperfections and ensuring its readiness for further denture procedures.	C5			Interactive Lecture/SG D	2	MCQS	6
35		Fabrication of a Special Tray	Introduction	C1						
36		Ideal Requirement	Ideal requirement of special tray	C2						
37		Conditioning the Primary Cast	To refine and modify the primary cast before special tray fabrication.	C3						
38		Adapting Relief wax, spacer and Separating medium Application	To apply relief wax, spacer, and separating medium to the primary cast for special tray fabrication.	C3						
39		Fabrication Of special tray	To understand and apply the techniques and materials used in fabricating a special tray for final impressions.	C2						

40		Practical performance	Demonstrating the fabrication of a special tray using appropriate materials and techniques.		P2		Hands-on Demo/ Video	1	OSCE/ OSPE	
41		SOPs Compliance	Clean the cast, apply relief wax, spacer, and separating medium, fabricate the tray, check the fit, and trim edges for proper comfort and function.			A2	Role play			
TOPIC: SECONDARY IMPRESSION IN COMPLETE DENTURE										
42	Week-07	Techniques for making master Impression	To understand the techniques for making a master impression	C2			Interactive Lecture/SGD	2	MCQS	6
43		Making Secondary Impression Using Special Tray	To understand and apply the technique for making a secondary impression using a special tray to capture detailed anatomical features for complete denture fabrication.	C3						
44		Secondary Impression Procedure for the Maxilla	To understand and apply the procedure for making a secondary impression of the maxilla	C3						
45		Secondary Impression Procedure for the Mandible	To understand and apply the procedure for making a secondary impression of the Mandible	C3						
		Inspect, Disinfect and Remark the Impression	To inspect, disinfect, and remark the impression to ensure its accuracy and readiness for further dental procedures.	C4						
48		Practical performance	Demonstrate the procedure for the fabrication of a special tray		P4		Hands-on Demo/ Video	1	OSCE/ OSPE	
49		SOPs Compliance	Comply SOPs while observing the procedure			A3	Role play			
TOPIC: LAB PROCEDURE PRIOR TO JAW RELATION										
50	Week-08	Preparing master cast	To understand the process of preparing a master cast	C2			Interactive Lecture/SGD	2	MCQS	3
51		Indexing Master Cast	Definition	C1						
52		Fabricating the temporary denture base	To understand the process of fabricating a temporary denture base for proper fit and function	C2						
53		Ideal Requirements	To comprehend the necessary steps, materials, and considerations involved in fabricating a temporary denture base	C2						
54		Material	To understand materials, use for fabrication	C3						
		Procedure	To understand and perform technique for denture base fabrication	C4						
55		Practical performance	Perform the necessary steps to prepare the cast and prosthetic components, ensuring they are ready for jaw relation		P2		Hands-on Demo/ Video	1	OSCE/ OSPE	
56	Professionalism	Organizing and arranging the steps systematically for optimal preparation before the jaw relation			A3	Role				

			procedure.				play			
TOPIC: FABRICATION OF OCCLUSAL WAX RIM										
57	Week-09	Introduction	To recall and understand the steps and materials involved in the fabrication of an occlusal wax rim for complete denture procedures.	C1			Interactive Lecture/SGD	2	MCQS	5
58		General Consideration and guidelines	To understand the general considerations and guidelines for fabricating an occlusal wax rim	C2						
59		Dimension of occlusal wax Rim	To understand the correct dimensions of occlusal wax rims for the maxilla and mandible in complete denture fabrication.	C2						
60		Technique of Fabrication of Occlusal Rim	To understand and apply the technique for fabricating an occlusal wax rim.	C3						
62		Practical performance	Prepare the base plate, apply and shape wax, refine the rim for occlusion, check vertical dimension, and make final adjustments.		P3		Demo/Charts/Video	1	OSCE/OSPE	
63		SOPs	Ensure proper base plate fit, apply wax evenly, shape accurately, refine occlusion, check vertical dimension, and smooth for final fit.			A3	Role play			
TOPIC: MAXILLOMANDIBULAR RELATION (MANDIBULAR MOVEMENT)										
64	Week-10	Mandibular movement	Introduction	C2			Interactive Lecture/SGD	2	MCQS	4
65		Structure and Function of TMJ	To understand the structure and function of the temporomandibular joint (TMJ), including its anatomical components and role in mandibular movement.	C2						
66		Determinants of Mandibular Movements	To understand the determinants of mandibular movements: how various factors affect the range, direction, and coordination of mandibular motion	C3						
67		Types of Mandibular Movements	To recall the different types of mandibular movements.	C1						
71		Practical performance	To demonstrate an understanding of the structure, function, and determinants of mandibular movements and perform the correct identification and execution of various types of mandibular movements.		P2		Demo/Charts/Group Discussion	1	OSCE/OSPE	
72		SOPs Compliance	Identify, demonstrate, and assess mandibular movements, ensuring proper TMJ function and patient comfort.			A2	Role play			
TOPIC: JAW RELATION										
73	Week-11	Jaw relation	To understand and apply the concept of jaw relation, including its definition, significance, and the different types used in complete denture fabrication.	C3			Interactive Lecture/SGD	2	MCQS	4
74		Orientation jaw relation	To understand and apply the concept of orientation	C3						

			jaw relation for maxillomandibular alignment.							
75		Vertical jaw relation	To understand and apply the technique for determining vertical jaw relation in complete denture fabrication.	C3						
		Horizontal jaw relation	To understand and apply the technique for determining horizontal jaw relation in complete dentures.	C3						
76		Practical performance	Demonstrate the different jaw relation with the help of charts, models & videos		P2		Demo / Charts/Group Discussion	1	OSCE/ OSPE	
77		SOPs Compliance	Prepare materials, demonstrate jaw relations using models and videos, ensure accuracy, and review key concepts.			A4	Role play			
TOPIC: ARTICULATOR AND ARTICULATION										
78	Week-12	Introduction	Purpose, uses, requirements, advantages, limitation of Articulator.	C2			Interactive Lecture/SG D	2	MCQS	4
79		Structure of articulator	To understand and apply knowledge of the structure and components of an articulator in simulating mandibular movements for accurate denture fabrication.	C3						
80		Procedure of articulation	To apply the procedure of articulation, including brief mounting of casts, teeth selection, and establishing occlusion for accurate denture fabrication.	C3						
		Arrangement of artificial teeth	Understand and apply the principles of arranging artificial maxillary and mandibular teeth	C3						
84		Practical performance	Demonstrate the different criteria for teeth selection with the help of charts, models, and videos.		P1		Demo/ Charts/Video	1	OSCE/ OSPE	
			Observe use of articulator in lab		P2					
85		SOPs Compliance	Comply with SOPS while learning criteria for teeth selection			A3	Role play			
TOPIC: TRY-IN										
86	Week-13	Definition	To understand the concept and importance of a try-in stage in complete denture fabrication, where the trial denture is assessed for fit, function, and aesthetics before final processing	C2			Interactive Lecture/SG D		MCQS	2
87		Procedure	Try-in procedure by critically assessing the fit, aesthetics, and occlusion of trial dentures, making necessary adjustments for optimal function, comfort, and appearance.	C4						
89		Practical performance	Place trial dentures, assess fit, aesthetics, and occlusion, make adjustments, and recheck for		P4		Case Study/	1	OSCE/ OSPE	

			optimal results.				Video			
90		SOPs compliance	Ensure patient comfort, check fit, evaluate aesthetics and occlusion, adjust as necessary, and finalize the try-in for optimal outcome.			A3	Role play			
TOPIC: COMPLETE DENTURE INSERTION										
91	Week-14	Check for the Fit of Prosthesis	Understand and discuss the proper techniques for checking the fit	C2			Interactive Lecture/SG D	2	MCQS	3
92		Checking of the Denture Function	Understand and discuss the proper techniques for checking the Denture Function.	C2						
93		Patient Instructions	To Understand and provide clear and accurate instructions to the patient on the care, use, and maintenance of the complete denture	C3						
94		Tissue Conditioners	To understand the use of tissue conditioners for improving the fit of the denture and promoting healing of the oral tissues	C3						
		Denture Adhesives	To understand the uses, application, and potential disadvantages of denture adhesives, ensuring their appropriate use for enhanced denture retention and patient comfort.	C3						
95		Practical performance	Properly insert, adjust, and evaluate a complete denture, ensuring its fit, function, and patient comfort, while also demonstrating the use of tissue conditioners and denture adhesives.		P4		Hands-on Demo/ Video	1	OSCE/ OSPE	
96		Professionalism	Professionalism, empathy, and responsibility in ensuring patient comfort during complete denture insertion.			A3	Role play			
TOPIC: SINGLE COMPLETE DENTURE										
97	Week-15	Introduction	To understand the process and significance of fabricating a single complete denture	C2			Interactive Lecture/SG D		MCQS	4
98		Indication and Disadvantage	To understand the indications and disadvantages of a single complete denture, including its impact on function, stability, and aesthetics	C2						
99		Occlusal Modification	Techniques of occlusal modification	C3						
100		Maxillary complete denture opposing a complete Mandibular natural dentition	To critically evaluate the interaction between a maxillary complete denture and a mandibular natural dentition, assessing factors like occlusion, stability, and function.	C5						
101		Maxillary complete denture opposing a mandibular partial denture	To critically analyze and evaluate the interaction between a maxillary complete denture and a mandibular partial denture, considering occlusion, stability, and function.	C5						
102		Pathogenesis	To understand the pathogenesis of a single complete denture, focusing on the sequence of changes in the oral structures that affect denture fit and function.	C3						

103		Practical performance	Observe the procedure of fabrication of single complete denture		P2		Practical Demo/ Video	1	OSCE/ OSPE	
104		SOP's Compliance	Comply SOPS while performing the procedure			A3	Role play			
TOPIC: RELINNING AND REBASING IN COMPLETE DENTURE										
105	Week-16	Definition	Define relining and rebasing	C1			Interactive Lecture/SG D	2	MCQS	3
106		Indication	Discuss the indication for relining and rebasing	C2						
107		Contra-indication	Discuss the contra-indication for relining and rebasing	C2						
108		Advantages	Discuss the advantages of relining and rebasing	C2						
109		Disadvantages	Discuss the disadvantages of relining and rebasing	C2						
110		Armamentarium	Discuss the armamentarium for relining and rebasing	C2						
		Procedure	Discuss the procedure of relining and rebasing							
111		Practical performance	Observe the procedure of relining and rebasing		P4		Practical Demo/ Video	1	OSCE/ OSPE	
112		SOP's Compliance	Comply SOPS while performing the procedure			A4	Role play			

Recommended Books:

1. Textbook of Prosthodontics by DEEPAK Nallaswamy
2. Prosthodontics treatment for Edentulous Patients by Zarb. Hobkik. Eckert. Jacob
3. McCracken's removable partial Prosthodontics by Alan B. Carr David T. Brown

Assessment breakdown				
S. No	Course content	No of mcqs	No of ospe/osce stations	Interactive/static
1.	Introduction to complete dentures	06	01	Static
2.	Biomechanics of edentulous state	04	01	Static
3.	Tissue response to complete denture	06	01	Static
4.	Dignostic impression in complete denture	04	01	Static
5.	Primary impression making in complete denture	06	01	Static
6.	Lab procedure prior to master impression making	06	01	Static
7.	Secondary impression in complete denture	06	01	Static
8.	Lab procedure prior to jaw relation	03	01	Static
9.	Fabrication of occlusal wax rim	05	01	Static
10.	Maxillomandibular relation (mandibular movement)	04	01	Static
11.	Jaw relation	04	01	Interactive
12.	Articulator and articulation	04	01	Static
13.	Try-in	02	-	-
14.	Complete denture insertion	03	01	Static
15.	single complete denture	04	01	Static
16.	Relinning and rebasing in complete denture	03	-	Static
Total	16	70	14	15

DEN-615-Orthodontics-I 3 (2+1)

COURSE DESCRIPTION:

This subject Introduces the principles of orthodontics with a focus on the development of occlusion, the classification and etiology of malocclusion, and orthodontic diagnostic methods. It covers the design, fabrication, and application of orthodontic appliances, including removable, myofunctional, and interceptive appliances like headgear, space maintainers, and Frankel appliances. Students will also explore the management of parafunctional habits and the use of appliances for early intervention. The course emphasizes practical skills, patient-centered care, and evidence-based practices essential for orthodontic treatment in dental technology.

COGNITIVE DOMAIN:

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

1. Understand the stages of occlusal development and their significance in orthodontics.
2. Explain the etiology and classification of malocclusion.
3. Describe the design and function of orthodontic appliances, including their role in interceptive orthodontics.
4. Evaluate the impact of parafunctional habits on occlusion and identify suitable interventions.
5. Develop treatment plans integrating diagnostic findings and theoretical knowledge
6. Identify orthodontic appliances and their components in clinical or laboratory settings.

PSYCHOMOTOR DOMAIN:

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

1. Demonstrate the fabrication and fitting of appliances such as removable retainers and space maintainers.
2. Perform diagnostic procedures like cephalometric tracing and impressions for orthodontic cases.
3. Apply orthodontic techniques to manage malocclusion and parafunctional habits.
4. Adjust and customize appliances based on patient-specific needs.
5. Engage actively in workshops and discussions to enhance practical and theoretical knowledge.

AFFECTIVE DOMAIN:

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

1. Appreciate the role of orthodontics in improving oral health and function.
2. Demonstrate empathy and professionalism in patient care and education.
3. Value early intervention in orthodontic treatment to minimize future complications.
4. Commit to ethical practices and evidence-based approaches in orthodontic care.

TABLE OF SPECIFICATIONS

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/Hours	Assessment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO ORTHODONTICS										
1	Week-1	Definition	Define Orthodontic	C1			Interactive Lectures	2	MCQS	4
2		Indication & Contraindication of Orth-Treatment	Describe the indication and contraindication of orthodontic treatment	C2						
3		Causes of malocclusion	What are the main cause of malocclusion	C1						
4		Management of Orthodontic Problems	What are the 4 main management stages	C1						
5		Practical performance	Identify orthodontic tools and demonstrate basic procedures under supervision			P3	Demo / Charts/Group Discussion	1	OSPE	
6		Empathetic Attitude	Demonstrate empathy and understanding toward patients by recognizing the emotional and psychological impact of orthodontic treatment on their overall well-being.			A3				
TOPIC: DEVELOPMENT OF OCCLUSION										
7	Week-2	Periods of occlusion developments	Describe key terms such as Neonatal, primary dentition, mixed dentition, and permanent dentition.	C2			Interactive Lectures	2	MCQS	6
8		Neo-Natal period	Explain the stages of neonatal period and their significance in dental health.	C2						
9		Primary Period	Describe the primary period and role of genetics and environmental factors to the development of occlusion	C2						
10		Mixed Period	Describe the Mixed period and role of genetics and environmental factors to the development of occlusion	C2						
11		Permanent Period	Describe the permanent period and role of genetics and environmental factors to the development of occlusion	C2						
12		Practical performance	Prepare diagnostic records, including impressions or digital scans, to evaluate occlusal development		P2		Demo / Charts/Group Discussion	1	OSPE	
13		Mindfulness	Demonstrate mindfulness by carefully considering the factors influencing the development of occlusion to support early detection and prevention of			A3				

			malocclusion							
TOPIC: CLASSIFICATION OF MALOCCLUSION										
14	Week-3	Occlusion	Define occlusion, normal, ideal, normal and malocclusion	C1			Interactive lectures	2	MCQS	5
15		Types and classification Malocclusion	Enlist the different systems used to classify malocclusion (e.g., Angle's classification, skeletal classification, etc.) and differentiate between skeletal, dental, and functional malocclusions based on clinical observations and radiographs.	C1						
16		Practical performance	Prepare diagnostic records, such as impressions and cephalograms, to classify malocclusion in a simulated or clinical setting			P3	Demo / Charts/Group Discussion	1	OSPE	
17		Professionalism	Exhibit professionalism by accurately classifying malocclusion and applying this knowledge to develop ethical and effective treatment plans for patients			A4				
TOPIC: CLASSIFICATION OF MALOCCLUSION										
18	Week-4	Malocclusion	Define intra-arch malocclusion and list common types (e.g., crowding, spacing, rotations, and supra-eruptions etc.).	C1			Interactive lectures	2	MCQS	6
19		Causes and clinical features	Explain the causes and clinical features of different types of inter-arch malocclusion. E.g. Sagittal, vertical and transverse plan malocclusion	C2						
20		Skeletal malocclusion	Define skeletal malocclusion and list its classifications (e.g., Class I, Class II, and Class III based on skeletal relationships)	C1						
21		Practical performance	Prepare diagnostic records, such as impressions and cephalograms, to classify malocclusion in a simulated or clinical setting			P3	Demo / Charts/Group Discussion	1	OSPE	
22		Professionalism	Appreciate the importance of accurate malocclusion classification in designing effective treatment strategies for patients			A4				
TOPIC: ETIOLOGY OF MALOCCLUSION										
23	Week-5	Etiology of Malocclusion	Enlist the different systems used to classify etiology of malocclusion e.g. Grabber, Gardiner's	C1			Interactive lectures	2	MCQS	5
24		Describe and list the multifactorial etiological factors of malocclusion eg Heredity, Development defect, Trauma, Physical agent, Habits, Disease, Malnutrition Etiology of malocclusion	C2							
25		Practical performance	Prepare and review diagnostic records such as patient history, radiographs, and study models to			P2	Demo /	1	OSPE	

			determine the etiology of malocclusion				Charts/ Group Discussion			
26		Behavioral Management	Apply effective behavioral management strategies to educate and motivate patients in preventing habits that contribute to the etiology of malocclusion			A3	Role Play			
TOPIC: ORTHODONTIC DIAGNOSIS										
27	Week-6	Essential Orthodontic Diagnose	Enlist the essential components of orthodontic diagnosis, such as patient history, clinical examination, facial photograph certain radiographic analysis, and model analysis.	C1			Interactive Lectures	2	MCQS	7
28		Practical performance	Prepare and organize diagnostic materials, including impressions, radiographs, and photographs, for orthodontic assessment		P2		Demo / Charts/ Group Discussion	1	OSPE	
29		Trust Buildup	Build trust with patients by communicating orthodontic diagnoses transparently and involving them in personalized treatment planning			A3	Role Play			
TOPIC: ORTHODONTIC DIAGNOSIS										
30	Week-7	Supplement Orthodontic Diagnose	Enlist supplemental diagnostic tools used in orthodontics, such as Specialized radiograph, hand-wrist radiographs, electromyography (EMG), and airway analysis	C1			Interactive Lectures	2	MCQS	4
31		Practical Performance	Prepare and organize diagnostic materials, including impressions, radiographs, and photographs, for orthodontic assessment		P2		Demo / Charts/ Group Discussion	1	OSPE	
32		Trust Buildup	Build trust with patients by communicating orthodontic diagnoses transparently and involving them in personalized treatment planning			A3	Role Play			
TOPIC: GENERAL CONCEPT OF ORTHODONTIC APPLIANCES										

3	Week-8	Orthodontic Appliances	Explain the purpose and mechanism of action of each type of orthodontic appliance in achieving orthodontic treatment goals.	C2			Interactive Lectures	2	MCQS	5
34		Practical performance	Prepare materials and equipment for orthodontic appliance fabrication or diagnostics.		P2		Demo	1	OSPE	
35		Teamwork and Collab	Effective teamwork and collaboration in the context of removable orthodontic appliances enhance the learning experience by promoting shared problem-solving, critical thinking, and practical application of concepts			A3	Role Play			
TOPIC: REMOVABLE APPLIANCES										
36	Week-09	Removable Appliances	Define removable orthodontic appliances and list their components (e.g. retentive base plates, active component)	C1			Interactive Lectures	2	MCQS	8
37			Describe different removable orthodontic appliances e.g. Labial bows, Robert retractor, mills retractor, finger spring, Z spring, T spring, coffin spring, canine retractor, Quad helix etc	C2						
38		Practical performance	Prepare materials and equipment for orthodontic appliance fabrication or diagnostics.		P2		Demo / Charts/Group Discussion	1	OSPE	
39		Teamwork and Collab	Effective teamwork and collaboration in the context of removable orthodontic appliances enhance the learning experience by promoting shared problem-solving, critical thinking, and practical application of concepts			A3	Role Play			
TOPIC: MYOFUNCTIONAL APPLIANCES										
40	Week-10	Myofunctional Appliances	Define myofunctional appliances and list their types (e.g., Activator, Twin Block, Frankel Appliance)	C1			Interactive Lectures	2	MCQS	2
41		Practical performance	Prepare and fit a Frankel appliance for a simulated case		P2		Demo / Charts/Group Discussion	1	OSPE	
43		Confidences	Confidence in understanding myofunctional appliances empowers students to apply their knowledge effectively in clinical practice and foster positive patient outcomes			A3	Role Play			
TOPIC: MYOFUNCTIONAL APPLIANCES										
44	Week-11	Activators	Define the activator appliance and list its components.	C1			Interactive Lectures	2	MCQS	2
45			Explain the mechanism of action of the activator in modifying jaw growth and correcting Class II malocclusion.	C2						
46			Identify clinical cases where the activator is	C3						

			indicated, such as mandibular retrognathia or overjet reduction							
47		Practical performance	Prepare and fit a activator appliance for a simulated case		P2		Demo / Charts/Group Discussion	1	OSPE	
48		Confidences	Confidence in understanding myofunctional appliances empowers students to apply their knowledge effectively in clinical practice and foster positive patient outcomes			A3	Role Play			
TOPIC: MYOFUNCTIONAL APPLIANCES										
49	Week-12	Bionator	Define the Bionator appliance and list its components	C1			Interactive Lectures	2	MCQS	2
50			Explain the mechanism of action of the Bionator in correcting Class II malocclusion and improving jaw growth	C2						
TOPIC: MYOFUNCTIONAL APPLIANCES										
52	Week-13	Frankel Function Regulator	Define the Frankel Functional Regulator and list its types (e.g., Frankel I, II, III, IV)	C1			Interactive Lectures	2	MCQS	2
53			Explain the mechanism of action of the Frankel appliance in altering muscle function and stimulating jaw growth.	C2						
56		Practical performance	Prepare and fit a Frankel appliance for a simulated case		P2		Demo / Charts/Group Discussion	1	OSPE	
57		Confidences	Confidence in understanding myofunctional appliances empowers students to apply their knowledge effectively in clinical practice and foster positive patient outcomes			A3	Role Play			
TOPIC: MYOFUNCTIONAL APPLIANCES										
58	Week-14	Vestibular Screen	Define the vestibular screen and describe its design and purpose	C1			Interactive Lectures	2	MCQS	4
59			Explain the role of the vestibular screen in interceptive orthodontics, particularly in addressing oral habits and malocclusion.	C2						
60		Practical performance	Prepare and fit a vestibular screen appliance for a simulated case		P2		Demo / Charts/Group Discussion	1	OSPE	
61		Confidences	Confidence in understanding myofunctional appliances empowers students to apply their knowledge effectively in clinical practice and foster			A3	Role Play			

			positive patient outcomes							
TOPIC: HEADGEAR										
62	Week-15	Headgear	Define headgear and list its types (e.g., cervical pull, high pull, combination pull).	C1			Interactive Lectures	2	MCQS	3
63			Differentiate between various types of headgear based on their design, force direction, and clinical indications	C2						
64		Practical performance	Prepare and fit a headgear appliance on a dental model under supervision		P2		Demo / Charts/Group Discussion	1	OSPE	
65		Advocacy	Advocacy for the use of headgear encourages students to promote its benefits in orthodontic treatment, fostering a deeper understanding of its role in achieving optimal dental alignment and patient care			A3	Role Play			
TOPIC: SPACE MAINTAINER										
66	Week-16	Space Maintainer	Define space maintainers and list their types (e.g., fixed and removable).	C1			Interactive Lectures	2	MCQS	
67			Differentiate between various types of space maintainers based on design, function, and clinical indications.	C3						
68		Practical performance	Independently fabricate and adjust a space maintainer for a patient case			P3	Demo / Charts/Group Discussion	1	OSPE	
69		Counselling	Counseling on the use of space maintainers helps students develop empathy and communication skills, enabling them to guide patients and their families through the importance of preserving space for proper dental development			A3				

Recommended Books:

- Orthodontics, The art and science by S.I bhalajhi
- Orthodontics at a glance by Daljit Gill, Blackwell

Assessment breakdown				
S. No	Course content	No of mcqs	No of ospe/osce stations	Interactive/static
1.	Introduction to orthodontic	04	01	Static
2.	Development of occlusion	06	01	Static
3.	Classification of malocclusion	05	01	Static
4.	Classification of malocclusion	06	01	Interactive
5.	Etiology of malocclusion	05	01	Interactive
6.	Orthodontic diagnostic	07	01	Static
7.	Orthodontic diagnostic	04	01	Static
8.	General concept of removable appliances	05	01	Static
9.	Revocable appliances	08	01	Static
10.	Myofunctional appliances	02	01	Static
11.	Myofunctional appliances	02	-	-
12.	Myofunctional appliances	02	01	Static
13.	Myofunctional appliances	02	-	-
14.	Myofunctional appliances	04	01	Static
15.	Headgear	03	01	Static
16.	Space maintainer	04	01	Static
Total	16	70	14	14

DEN-616-Paediatric Dentistry 3 (2+1)

COURSE DESCRIPTION:

In this course students will learn the concepts and procedures involved in maintaining paediatric patients' oral health. It covers the diagnosis, prevention, and management of paediatric dental conditions with an emphasis on developing a favourable attitude toward dental care. Students will well understand about behaviour management, child psychology, and strategies that are specific to the requirements of kids from birth to puberty. By the end of successful completion of this course students will be prepared to provide children with comprehensive dental care that emphasizes prevention, minimally invasive procedures, and the development of lifetime oral health practices.

COGNITIVE DOMAIN:

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

1. Differentiate between various types of local anaesthesia and their applications in paediatric dentistry.
2. Evaluate treatment options for different types of carious lesions, including approximal and rampant caries.
3. Recall treatment plans for managing pulp pathology, based on diagnostic findings.
4. Compare advanced restorative techniques for managing enamel and dentin anomalies.
5. Assess the effectiveness of fissure sealants and fluoride applications in caries prevention.
6. Describe the principles of space maintainers and classify appliances used for space management.

PSYCHOMOTOR DOMAIN:

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

1. Demonstrate the administration of local anaesthesia techniques with minimal discomfort to the child.
2. Apply fluoride varnish and fissure sealants effectively to prevent dental caries.
3. Restore carious primary and permanent teeth using appropriate materials and methods.
4. Conduct pulp therapy procedures, including indirect pulp capping, direct pulp capping, and pulpotomy.
5. Fabricate and fit space maintainers in paediatric patients with premature tooth loss.
6. Perform splinting procedures for stabilizing mobile teeth in cases of trauma.

AFFECTIVE DOMAIN:

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

1. Exhibit empathy and reassurance while managing children during local anaesthesia administration.
2. Display patience and understanding when handling behaviourally challenging paediatric patients.
3. Advocate for preventive dental care, encouraging parents to adopt healthy oral hygiene practices for their children.
4. Prioritize the psychological comfort of children during pulp therapy and other invasive procedures.
5. Value the importance of aesthetics in paediatric dental treatments to boost the child's confidence.
6. Demonstrate professionalism while discussing treatment options with parents and guardians.
7. Promote the use of evidence-based practices when selecting treatment plans for paediatric patients.

TABLE OF SPECIFICATIONS

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time / Hours	Assessment	No of Items
				C	P	A				
TOPIC: LOCAL ANESTHESIA FOR CHILDREN										
1	Week-01	Introduction	Identify the specific types and purposes of local anesthesia used in pediatric dentistry.	C2			Interactive Lecture/SGD	2	MCQS	6
2		Types of local anesthesia		C2						
3		Surface Anesthesia	Describe surface anesthesia techniques and the properties of local anesthetic solutions	C2						
4		Local Anesthetic Solution		C2						
5		Application techniques		C3						
6		Pain-Free Local Anesthesia	Illustrate pain-free local anesthesia techniques to pediatric patients	C3						
7		Complications of Local Anesthesia	Analyze complications related to local anesthesia and suggest preventive measures.	C4						
8		Practical performance	Demonstrate the procedure of Local Anesthesia in Children.		P4		Demo/Charts/Video	1	OSCE/OSPE	
9		Empathetic Attitude	Show empathy and reassurance while administering local anesthesia to children			A3	Role play			
TOPIC: DIAGNOSIS AND PREVENTION OF DENTAL CARIES										
10	Week-02	Development of Dental Caries	Explain the process of dental caries development	C2			Interactive Lecture/SGD	2	MCQS	4
11		Epidemiology of Dental Caries	Describe epidemiological trends of dental caries in children	C2						
12		Caries Detection and Diagnosis	Differentiate between healthy and carious teeth using diagnostic tools	C3						
13		Prevention of Dental Caries	Recommend preventive measures such as dietary modifications, oral hygiene practices, and professional interventions	C4						
14		Practical performance	Perform caries detection procedures and apply fluoride or sealants as preventive treatments.		P4		Hands-on Demo	1	OSCE/OSPE	
15		Parent Counselling	Encourage parents to adopt preventive dental health practices for children.			A4	Role play			
TOPIC: PATTERNS OF DENTAL DISEASE SEEN IN PRESCHOOL CHILDREN										
16	Week-03	Patterns of Dental Disease seen in preschool children	Describe the specific patterns of dental disease in preschool children.	C2			Interactive Lecture/SGD	2	MCQS	4
17		Identifying Preschool Children in need of Dental Care	Categorize preschool children based on their immediate dental care needs.	C4						

18		Management of Pain at First Attendance	Illustrate Managing the pain during the first attendance	C4						
19		Practical performance	Demonstrate Pain Management Strategies in Children		P4		Demo/ Charts/ Video	1	OSCE/ OSPE	
20		Encouragement	Encourage active participation from children and parents during preventive and therapeutic sessions.			A3	Role play			

TOPIC: TREATMENT OF DENTAL CARIES IN THE PRESCHOOL CHILD

21	Week-04	Preventive Care in preschool children	Provide preventive Care in preschool children		P4		Interactive Lecture/SG D	2		6
22		Managing Behaviors of preschool children	Apply behavior management techniques		P5					
23		Treatment of Dental Caries	Apply restorative treatments (e.g., fillings) in preschool children.	C3						
24		Practical performance	Perform restorative treatments for caries in preschool children with precision.		P4		Demo/ Video	1	OSCE/ OSPE	
25		Behavioral Management	Apply behavioral management strategies specific to preschool children.			A3	Role play			

TOPIC: OPERATIVE TREATMENT OF DENTAL CARIES IN THE PRIMARY DENTITION

26	Week-05	Philosophy of Care	Describe the philosophy of care	C2			Interactive Lecture/SG D	2	MCQS	6
27		Remove, Restore or Leave Phenomenon	Evaluate when to remove, restore, or monitor caries in primary teeth.	C4						
28		Diagnosis and Treatment Planning	Formulate a treatment plan for primary dentition based on clinical findings.	C5						
29		Durability of Restorations	Select materials and techniques that enhance restoration durability.	C3						
30		Operative Treatment of Primary Teeth	Discuss operative treatments using suitable restorative materials	C5						
31		Treatment of a child with High Caries Rate	Design a comprehensive treatment plan for children with rampant caries	C5						
32		Practical performance	Perform carious primary teeth restoration in a clinical or simulated setting		P4		Hands-on Demo/ Video	1	OSCE/ OSPE	
33	Professionalism	Exhibit professional Analysis and care in deciding treatment plans			A3	Role play				

TOPIC: PULP THERAPY FOR PRIMARY TEETH

34	Week-06	The Dental Pulp	Describe the anatomy and functions of the dental pulp	C2			Interactive Lecture/SGD	2	MCQS	4				
35		Diagnosis of Pulp Pathosis	Diagnose pulp pathologies using clinical signs and radiographic findings.	C3										
36		Indirect Pulp Capping	Differentiate between indirect pulp capping and direct pulp capping,	C3										
37		Direct Pulp Capping		C3										
38		The Vital Pulpotomy	Illustrate the vital pulpotomy technique	C3										
39		Management of Non-Vital and Abscessed Primary Molars (The Pulpectomy Technique)	Evaluate treatment outcomes and illustrate the Pulpectomy Technique	C4										
40	Practical performance	Perform pulpotomy and pulpectomy procedures for non-vital primary teeth		P4		Hands-on Demo/ Video	1	OSCE/ OSPE						
41	Trust Buildup	Ensure a child-friendly approach to maintain trust and reduce anxiety during pulp therapy			A3	Role play								
TOPIC: OPERATIVE TREATMENT OF DENTAL CARIES IN THE YOUNG PERMANENT DENTITION														
42	Week-07	Introduction	Explain the principles of operative treatment in young permanent dentition	C2			Interactive Lecture/SGD	2	MCQS	5				
43		Assessment of Caries Risk	Analyze caries risk factors specific to young permanent teeth	C4										
44		Treatment Decision	Evaluate various treatment options and decide the most suitable approach for occlusal or approximal caries	C5										
45		Important points in relation to remineralization	Outline the process of remineralization and its application in minimally invasive dentistry	C3										
46		Fissure Sealing	Explain the indications, materials, and technique for fissure sealing	C3										
47		Occlusal Caries and Occlusal Restoration in young Permanent Dentition	Describe the steps involved in restoring occlusal caries in young permanent teeth	C3										
48		Practical performance	Demonstrate restorative procedures, including fillings and crowns in young permanent dentition		P4						Hands-on Demo/ Video	1	OSCE/ OSPE	
49		Responsible and Ethical Behavior	Show responsibility in adhering to safety protocols and ethical guidelines in treatment procedures			A3					Role play			
TOPIC: OPERATIVE TREATMENT OF APPROXIMAL AND EXTENSIVE DEEP CARIES IN THE YOUNG PERMANENT DENTITION														
50	Week-08	Approximal and Extensive Deep Caries	Differentiate between various restorative approaches for approximal versus deep caries.	C4			Interactive Lecture/SGD	2	MCQS	3				
51		Conventional Treatment	Compare conventional treatment options, including	C4										

		Options	cavity preparation and material selection							
52		Hypo mineralized, Hypo mature, or Hypoplastic First Permanent Molars	Identify treatment strategies for managing hypo mineralized or hypoplastic first permanent molars	C4						
53		Alternatives to Conventional Cavity Preparation	Describe Alternatives to Conventional Cavity Preparation	C3						
54		Rampant Caries	Formulate a comprehensive treatment plan for managing rampant caries.	C5						
55		Practical performance	Demonstrate occlusal and approximal restorations using appropriate materials		P4		Hands-on Demo/ Video	1	OSCE/ OSPE	
56		Professionalism	Show professionalism in treating complex cases of caries			A4	Role play			
TOPIC: ADVANCED RESTORATIVE DENTISTRY IN CHILDREN										
57	Week-09	Advanced Restorative Techniques	Describe techniques for advanced restorative care	C2			Interactive Lecture/SG D	2	MCQS	7
58		Tooth Discoloration	Explain the causes of tooth discoloration and available treatments for pediatric patients	C3						
59		Tooth Surface Loss	Analyze the etiology of tooth surface loss and suggest preventive measures.	C4						
60		Inherited Anomalies of Enamel and Dentin	Discuss inherited enamel and dentin anomalies	C3						
61		Hypodontia	Plan treatment strategies for children with hypodontia	C5						
62		Practical performance	Demonstrate advanced restorative procedures, such as composite resin placement		P4		Demo/ Charts/ Video	1	OSCE/ OSPE	
63		Mindfulness	Value the importance of aesthetics in children's oral health			A3	Role play			
TOPIC: PERIODONTAL DISEASES IN CHILDREN										
64	Week-10	Introduction	Explain the anatomical differences in the periodontium of children compared to adults.	C2			Interactive Lecture/SG D	2	MCQS	4
65		Anatomy of Periodontium in Children	Explain the anatomy of the periodontium and its role in periodontal health	C2						
66		Acute Gingival Conditions	Classify acute gingival conditions	C3						
67		Chronic Gingivitis	Outline the pathogenesis, clinical features, and treatment of chronic gingivitis in children.	C3						
68		Drug induced Gingival Enlargement	Identify drugs associated with gingival enlargement and discuss management strategies.	C4						

69		Traumatic Gingivitis	Describe the causes and management of traumatic gingivitis.	C3						
70		Mucogingival Problems in Children	Explain mucogingival anomalies such as inadequate keratinized gingiva and their treatment.	C3						
71		Practical performance	Demonstrate periodontal health assessment and gingival evaluation with precision		P4		Demo/Charts/Group Discussion	1	OSCE/OSPE	
72		Advocacy	Advocate for regular periodontal health check-ups in children			A3	Role play			
TOPIC: PERIODONTITIS AS MANIFESTATIONS OF SYSTEMIC DISEASE										
73	Week-11	Chronic Periodontitis and Risk Factors for Chronic Periodontitis and Diseases	Analyze the risk factors for chronic periodontitis in children and suggest preventive measures	C4			Interactive Lecture/SGD	2	MCQS	3
74		Periodontal Complications of Orthodontic Treatment	Assess the impact of orthodontic appliances on periodontal health in pediatric patients.	C4						
75		Periodontitis as Manifestations of Systemic Disease	Correlate systemic diseases such as diabetes with periodontal conditions in children	C5						
76		Practical performance	Perform plaque scoring and gingival health evaluations		P4		Demo / Charts/Group Discussion	1	OSCE/OSPE	
77		Teamwork and Collab	Value teamwork and collaboration in providing multi-disciplinary care for complex periodontal cases.			A3	Role play			
TOPIC: ANOMALIES OF TOOTH FORMATION AND ERUPTION										
78	Week-12	Introduction	Define anomalies of tooth formation and their clinical implications.	C1			Interactive Lecture/SGD	2	MCQS	4
79		Missing Teeth	Identify common causes of congenitally missing teeth and their treatment options.	C4						
80		Extra Teeth	Describe the management of supernumerary teeth, including surgical and orthodontic approaches.	C3						
81		Abnormality of Tooth Size	Categorize conditions like microdontia and macrodontia and propose treatment options	C4						
82		Abnormality of Tooth Form	Explain conditions and their impact on dental health.	C3						
83		Abnormality of Root Form	Discuss root abnormalities and their clinical management	C4						
84		Practical performance	Perform diagnostic imaging to evaluate anomalies and guide treatment decisions		P4		Demo/Charts/Video	1	OSCE/OSPE	
85		Confidence	Exhibit confidence while managing challenging Tooth abnormalities			A3	Role play			

TOPIC: ANOMALIES OF TOOTH ERUPTION AND EXFOLIATION										
86	Week-13	Abnormality of Tooth Structure	Correlate genetic and environmental factors with structural anomalies	C5			Interactive Lecture/SGD		MCQS	4
87		Disturbances of Eruption	Describe the causes and treatment options for disturbances in eruption	C3						
88		Disturbances of Exfoliation	Suggest treatment strategies for retained primary teeth	C5						
89		Practical performance	Demonstrate different treatment strategies for managing complex dental anomalies		P4		Case Study/ Video	1	OSCE/ OSPE	
90		Effective Communication	Communicate effectively with parents about treatment options for dental anomalies			A3	Role play			
TOPIC: FISSURE SEALANTS AND FLUORIDE APPLICATIONS										
91	Week-14	Introduction	Explain the role of fissure sealants and fluoride in caries prevention.	C2			Interactive Lecture/SGD	2	MCQS	3
92		Benefits of sealants		C2						
93		Clinical Technique	Illustrate the clinical procedure for sealant application	C3						
94		Fluoride toxicity awareness	Describe Fluoride toxicity over time and its disadvantages	C3						
95		Practical performance	Demonstrate the application techniques for sealants and fluoride		P4		Hands-on Demo/ Video	1	OSCE/ OSPE	
96		Counselling	Counsel the parents for the use of preventive treatments among children as preventive measure			A3	Role play			
TOPIC: SPACE MANAGEMENT AND SPACE MAINTAINERS										
97	Week-15	Definition and Objectives of Space Maintenance	Define the objectives of space maintenance	C2			Interactive Lecture/SGD		MCQS	4
98		Causes of Space Loss	Identify common causes of space loss	C2						
99		Planning for Space Maintenance	Develop treatment plans for managing space loss in children	C5						
100		Requirements of space Maintainers	List the ideal requirements for effective space maintainers	C3						
101		Classification of Space Maintainers	Describe the types of space maintainers and their specific applications	C3						
102		Different Types of Space Maintenance Appliances	Explain the indications and usage of fixed and removable space maintainers	C3						
103		Practical performance	Demonstrate the fabrication and use space maintainers for children		P4		Practical Demo/ Video	1	OSCE/ OSPE	
104		Counselling	Motivate families to prioritize timely intervention in space management			A3	Role play			

TOPIC: SPLINTING										
105	Week-16	Definition of Tooth Mobility	Explain the causes, types, and classifications of tooth mobility	C2			Interactive Lecture/SG D	2	MCQS	3
106		Causes and Types of Tooth Mobility		C2						
107		Definition of Splints	Identify Splint	C2						
108		Indications and Contraindications of Splints	Describe the indications and contraindications for various types of splints	C3						
109		Classification of Splints	Compare different types of splints	C4						
110		Commonly used Splints	Select the appropriate type of splint for different clinical scenarios.	C4						
111		Practical performance	Apply splinting techniques for stabilizing mobile teeth		P4		Practical Demo/ Video	1	OSCE/ OSPE	
112		Effective Communication	Provide reassurance and clear communication to children and parents during trauma management			A3	Role play			

Recommended Books:

1. Pediatric Dentistry - 3rd ed. (2005) Richard R Welbury, Monty S. Duggal
2. Dentistry for the Child by Ralph E McDonald

Assessment Breakdown				
S. No	Course Content	No of Mcqs	No of OSPE/OSCE Stations	Interactive/Static
1.	Local anesthesia for children	06	01	Static
2.	Diagnosis and Prevention of Dental Caries	04	01	Interactive
3.	Patterns of Dental Disease seen In Preschool Children	04	01	Static
4.	Treatment of Dental Caries in the Preschool Child	06	01	Interactive
5.	Operative treatment of Dental caries in the Primary Dentition	06	01	Static
6.	Pulp therapy for primary teeth	04	01	Static
7.	Operative treatment of dental caries in the Young Permanent Dentition	05	01	Static
8.	Operative Treatment of Approximal and Extensive Deep Caries in the Young Permanent Dentition	03	01	Static
9.	Advanced Restorative dentistry in children	07	01	Static
10.	Periodontal Diseases in children	04	01	Static
11.	Periodontitis as manifestations of Systemic Disease	03	-	-
12.	Anomalies of Tooth Formation and Eruption	04	01	Static
13.	Anomalies of Tooth Eruption and Exfoliation	04	-	-
14.	Fissure sealants and fluoride applications	03	01	Static
15.	Space Management and Space Maintainers	04	01	Static
16.	Splinting	03	01	Static
TOTAL	16	70	14	14

DEN-619-Fundamentals of Implantology 3 (2+1)

COURSE DESCRIPTION

This course provides a basic introduction to dental implantology, focusing on the principles, materials, and processes involved in dental implants. Students will learn about the structure of the mouth, the purpose of implants, and how they support oral health. The course emphasizes understanding the science behind implants, treatment planning, and maintenance without a heavy focus on clinical procedures. It is designed to give learners a strong theoretical foundation for future studies or general knowledge in the field of implantology.

COGNITIVE DOMAIN

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

1. Grasp the basic concepts of dental Implantology, including types of implants and their indications
2. Understanding the types and classifications of dental implants
3. Explaining implant placement and integration processes (e.g., Osseo integration)
4. Recognizing biomechanical considerations of implants
5. Identifying surgical procedures, timing, and stages (e.g., immediate placement, two-stage surgery)
6. Learning the risks and complications associated with dental implants
7. Exploring prosthetic procedures for both fixed and removable dentures
8. Understand the biological mechanisms of Osseointegration and factors affecting implant stability
9. Learn to interpret radiographs, CT scans, and other imaging modalities for implant planning
10. Acquire knowledge of various surgical protocols, including flap design, implant placement techniques, and minimally invasive procedures
11. Identify potential complications (e.g., infection, implant failure) and understand strategies for prevention and management
12. Gain insight into the materials used in implants and their properties, including biocompatibility and mechanical strength.

PSYCHOMOTOR DOMAIN:

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

1. Perform comprehensive oral examinations and assessments to determine implant suitability
2. Master techniques for managing soft tissues around implants to ensure optimal healing and aesthetics
3. Design and fabricate implant-supported crowns, bridges, and other prostheses with accuracy
4. Operate specialized Implantology equipment, including surgical guides and computer-assisted devices
5. Apply protocols for immediate or early loading of implants when appropriate
6. Demonstrate the ability to address and rectify intraoperative and postoperative complications effectively

AFFECTIVE DOMAIN

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

1. Developing an appreciation for the importance of precision in implant placement and prosthesis fabrication
2. Valuing patient safety by minimizing risks and complications
3. Demonstrating professionalism and ethical responsibility in handling Implantology procedures
4. Encouraging a positive attitude toward continuous learning and advancements in Implantology techniques.

TABLE OF SPECIFICATIONS

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time / Hours	Assesment	No of Items
				C	P	A				
TOPIC: DENTAL IMPLANTOLOGY										
		Definition	Define dental implant	C1						2
1	Week-1	Indication & contraindication	Describe indication and contraindication of implants	C2			Interactive Lecture/SGD	2	MCQS	
2		Advantages and disadvantages	Illustrate the advantages and disadvantages of implants	C3						
3		Classification	Explain the classification of implants	C4						
4		Practical performance	Demonstrate Misch and Judy classification of implants based on Kennedy-Applegates rules.		P4		Demo/ Charts/ Video	1	OSPE	
5		Arrangment	Arrange and prioritize patient care, during implant procedures, including empathy, communication, and pain management			A4				Role play
TOPIC: MECHANISM OF INTEGRATION										
6	Week-2	Osseo- integration	Define Osseointegration	C1			Interactive Lecture/SGD	2	MCQS	4
7		Branemark's theory	Explain Branemark's theory of Osseointegration	C3						
8		Fibro osseous integration	Illustrate different steps of fibro osseous integration	C2						
9		The interface	Explain the interface and factors effecting Osseointegration	C4						
10		Practical performance	Demonstrate steps involved in Osseointegration		P2		Demo/ Charts/ Video	1	OSPE	
11		Skills improvement	Exhibit a willingness to learn and improve skills in Occlusal load management			A2				
TOPIC: PARTS OF AN IMPLANT										
12	Week-3	Parts	Explain various components of implant assembly	C4			Interactive Lecture/SGD		MCQS	5
13		Superstructures	Analyze different types of implant super-structures	C3						
14		Indications	Illustrate indications for different types of implant super- structures	C2						
15		Detachable bridges	Describe implant supported fixed detachable bridges	C2						
16		Practical performance	Indicate the role of laboratory analogues to accommodate different patient needs and situations		P4		Demo/ Charts/	1	OSPE	

							Video			
18		Analysis	Demonstrate a willingness to learn and improve skills in analyzing different parts of implant			A2	Role play			

TOPIC: DIAGNOSIS AND TREATMENT PLANNING FOR IMPLANTS

19	Week-4	Evaluation	Discuss evaluation steps of the patient for implant therapy	C4			Interactive Lecture/SGD	2	MCQS	3
20		Treatment Planning	Evaluate various treatment planning for implant therapy	C3						
21		Practical performance	Display proper techniques for diagnostic evaluation		P2		Demo/ Charts/ Video	1	OSPE	
22		Anxiety reduction	Analyze and respond to patient concerns and anxiety related to endosteal implant technique, and demonstrate empathy and understanding			A1	Role play			

TOPIC: SURGICAL PLACEMENT OF IMPLANT

23	Week-5	Study Model	Evaluate preparation of the study models	C1			Interactive Lecture/SGD	2	MCQS	7
24		Surgical stents	Explain surgical stents, ideal requirements and fabrication	C4						
25		Preoperative and postoperative measures	Describe pre and post-operative measures of patients for implant therapy	C3						
26		Surgical Procedure	Explain one step and two steps surgical procedures for implant treatment	C4						
27		Primary Incisions	Discuss different types of primary incisions used in implant placement	C2						
28		Insertion Procedure	Evaluate the procedures used for insertion of implant	C4						
29		Hygiene protocol	Discuss hygiene protocols for surgical placement of implant	C2						
30		Practical performance	Demonstrate proper technique for surgical exposure of implant insertion area		P2		Demo/ Charts/ Video	1	OSPE	
31		Prioritization	Organize and prioritize patient care, and demonstrate a commitment to providing high-quality patient care			A4	Role play			

TOPIC: FAILURES IN IMPLANTS

32	Week 6	Failure in implants	Explain causes of failure for implant	C4			Interactive Lecture/SGD	222	MCQS	4
33		Management	Analyze the management of failed implants due to various causes	C3						
34		Practical performance	Demonstrate guided responses in management of failed implant, including the ability to identify and manage complications		P3		Demo/ Charts/ Video	1	OSPE	
35		Effective communication	Value the importance of effective communication and patient education in condition of failure of implant treatment			A3				
TOPIC: MATERIALS USED IN DENTAL IMPLANTS										
36	Week 7	Types	Recall different types of materials used in the composition of implant, metals, ceramics implants	C4			Interactive Lecture/SGD	2	MCQS	5
37		Recent advances in implants	Comprehend the recent advances in implants	C2						
39		Practical performance	Demonstrate proper techniques for the structural composition of implants		P2					
40		Patient Education	Value the importance of effective communication and patient education in preventing and managing complications of implant therapy			A3				
TOPIC: IMPLANT TREATMENT: BASIC CONCEPTS AND TECHNIQUES										
41	Week 8	Peri-implantation	Explain biological and functional consideration, hard tissue interface, soft tissue to implant interface	C4			Interactive Lecture/SGD	2	MCQS	4
42		Biomechanical consideration	Recall the biomechanical consideration of implant	C2						
43										
44		Practical performance	Demonstrate different steps for peri-implantation		P3		Demo/ Charts/ Video	1	OSPE	
45		Skills improvement	Demonstrate a willingness to learn and improve skills in managing peri-implantation			A2				
TOPIC: PREOPERATIVE ASSESSMENT AND TREATMENT PLANNING										
46	Week-9	Medical history and medical risk assessment	Recall the medical history and risk evaluation	C3			Interactive Lecture/SGD	2	MCQS	5
47		Radiographic examination	Explain different radio graphical techniques used for implant therapy	C3						
48		Practical performance	Demonstrate fabrication of diagnostic casts		P1		Demo/	1	OSPE	

							Charts/ Video			
49		Skills improvement	Demonstrate a willingness to learn and improve skills in risk assessment			A2				
TOPIC: PROSTHETIC CONSIDERATION IN IMPLANT TREATMENT PLANNING										
50	Week-10	Prosthetic consideration	Recall different prosthetic consideration in implant treatment planning	C1			Interactive Lecture/SGD	2	MCQS	4
51		Surgical treatment	Analyze surgical treatment planning consideration for implant treatment	C3						
52		Practical performance	Demonstrate proper techniques for implant treatment planning		P1		Demo/ Charts/ Video			
53		Skills improvement	Demonstrate a willingness to learn and improve skills in evaluation of oral cavity for implant treatment			A2		111	OSPE	
TOPIC: SURGICAL TECHNIQUES(BASIC)										
54	Week-11	Surgical Techniques	Explain surgical armamentarium, surgical preparation, implant placement	C1			Interactive Lecture/SGD	2	MCQS	7
55		Post-operative management	Analyze different post-operative management and uncovering	C3						
56		Practical performance	Demonstrate proper techniques for implant placement		P1		Demo/ Charts/ Video	1	OSPE	
57		Effective communication	Value the importance of effective communication and patient education in flap reflection management				A3			
TOPIC: COMPLICATIONS										
58	Week-12	Implant stability	Analyze various factors responsible for implant stability	C2			Interactive Lecture/SGD	2	MCQS	4
59		Complications	Analyze surgical technique complication, invasion of critical anatomic structure, mechanical complication and esthetic complications	C3						
60		Practical performance	Demonstrate proper techniques and angulation for stable implant		P1		Demo/ Charts/ Video	1	OSPE	
61		Effective communication	Value the importance of effective communication and patient education in complication management				A3			
TOPIC: IMPLANT COMPONENTS										
62		Components assembly	Evaluate various structural components of implant	C4			Interactive Lecture/SGD	2	MCQS	6

63	Week-13	Implant Prosthetic Options	Analyze options for the edentulous patient, options for partially edentulous patient and prosthetic complications	C3						
64		Practical performance	Demonstrate different implants options that suits patients with different abnormalities		P1		Demo/Charts/Video	1	OSPE	
65		Effective communication	Value the importance of effective communication and patient education in implant treatment			A3				
TOPIC: ADVANCED CONCEPTS AND COMPLEX CASES										
66	Week-14	Placement of implant	Discuss immediate, early and late placement of implant	C2			Interactive Lecture/SGD	2	MCQS	5
67		Bone grafting	Explain autogenous graft, allografts, xenografts and bone morphogenetic proteins	C4						
68		Augmentation	Describe mandibular and maxillary augmentations	C3						
69		Alveolar ridge distraction	Explain alveolar ridge distraction technique	C4						
70		Practical performance	Demonstrate proper technique for sinus lift		P1		Demo/Charts/Video	1	OSPE	
71		Effective communication	Value the importance of effective communication and patient education onlay bone grafting			A3	Role play			
TOPIC: DIAGNOSTIC IMAGING AND VIRTUAL TREATMENT PLANNING										
72	Week-15	Diagnostic imaging	Recall various diagnostic imaging for implant treatment	C2			Interactive Lecture/SGD	2	MCQS	3
73		Planning	Discuss virtual treatment planning	C2						
75		Practical performance	Demonstrate proper technique for performing CBCT		P1		Demo/Charts/Video	1	OSPE	
76		Skills improvement	Demonstrate a willingness to learn and improve skills in performing Scanning			A2	Role play			
TOPIC: SPECIAL IMPLANTS										
72	Week-16	Zygomatic Implants	Explain Zygomatic implants	C3			Interactive Lecture/SGD	2	MCQS	2
73		Extra oral implants	Discuss extra oral implant	C2						
74		Complex cases	Explain complex cases in implant therapy	C4						

75		Practical performance	Demonstrate proper technique for missing anterior teeth requiring grafting and implant placement		P1		Demo/ Charts/ Video	1	OSPE	
76		Skills improvement	Demonstrate a willingness to learn and improve skills in performing preparation for special implant cases			A2	Role play			

Recommended Books:

1. Misch, Carl E (2007). Contemporary Implant Dentistry. St. Louis, Missouri: Mosby Elsevier.
2. Balaji, S. M. (2007). Textbook of Oral and Maxillofacial Surgery. New Delhi: Elsevier India.

Assessment Breakdown:

S.No	Topics	No of MCQ	No of OSPE / OSCE Stations	Static / Interactive
1	Dental Implantology	2	1	Static
2	Mechanism of Integration	4	1	Static
3	Parts of an Implant	5	1	Interactive
4	Diagnosis and treatment planning for implants	3	0	Interactive
5	Surgical Placement of Implant	7	2	Interactive
6	Failures in Implants	4	0	Interactive
7	Materials used in Dental Implants	5	1	Static
8	Implant treatment: Basic concepts and Techniques	4	1	Static
9	Preoperative assessment and treatment planning	5	1	Interactive
10	Prosthetic consideration in implant treatment planning	4	1	Interactive
11	Surgical Techniques(Basic)	7	2	Interactive
12	Complications	4	0	Interactive
13	Implant Components	6	0	Static
14	Advanced concepts and complex cases	5	1	Static
15	Diagnostic imaging and virtual treatment planning	3	0	Interactive
16	Special Implants	2	2	Interactive
Total	16	70	14	14

DEN-621-Minor Oral Surgery-II 3 (2+1)

COURSE DESCRIPTION

In this course, students will gain comprehensive knowledge and hands-on experience in the concepts and procedures involved in dental extractions and minor oral surgical interventions. It encompasses the techniques and principles required for the efficient removal of teeth, management of impacted teeth, and addressing related complications. Students will learn specific techniques for the extraction of permanent and primary teeth, including modifications for primary extractions, flap design and management, and techniques for open and multiple extractions. The course covers the classification, indications, contraindications, and surgical procedures for the removal of impacted third molars, as well as post-operative patient care. Additionally, students will acquire skills in managing extraction complications, fractured dental alveoli, and broken-down roots. Procedures such as suturing, excision of mucocele, apicectomy, operculectomy, epulis removal, frenectomy, and biopsy techniques will also be covered. By the successful completion of this course, students will be equipped to handle complex dental extractions and minor surgical procedures with precision and confidence. Emphasis will be placed on minimizing complications, ensuring patient comfort, and fostering lifelong oral health practices through preventive and effective management strategies.

COGNITIVE DOMAIN

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

1. Recall the indications, contraindications, and complications associated with tooth extraction
2. Comprehend the specific techniques for removal of each tooth, including maxillary and mandibular teeth.
3. Analyze the principles of flap design and management, including the different types of flaps and their indications.
4. Evaluate the indications and contraindications for impacted teeth removal, including third molar impactions.
5. Synthesize the knowledge of surgical procedures for removal of impacted teeth, including the classification of third molar impactions.
6. Evaluate the effectiveness of different techniques for post-operative patient management, including pain control and wound care.
7. Analyze the management of extraction complications, including bleeding, dry socket, and nerve damage.
8. Receive and respond to patient concerns and anxiety related to minor oral surgery procedures.

PSYCHOMOTOR DOMAIN:

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

1. Demonstrate proper technique for tooth extraction, including the use of forceps and elevators.
2. Demonstrate the ability to modify extraction techniques for primary teeth, including the use of specialized instruments.

3. Demonstrate precision and control in performing surgical procedures, including flap design and management, and removal of impacted teeth.
4. Demonstrate the ability to perform complex surgical procedures, including multiple extractions and management of dent alveolar fractures.
5. Demonstrate the ability to adapt and modify surgical techniques for different patient needs and situations, including extractions of broken down roots and suturing.
6. Demonstrate fine motor skills in performing delicate surgical procedures, including excision of mucocele, apicectomy, operculectomy, Epulis removal, frenectomy, and biopsy.
7. Demonstrate hand-eye coordination in performing surgical procedures, including the use of surgical microscopes and other specialized equipment.

AFFECTIVE DOMAIN

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

1. Demonstrate empathy and understanding in communicating with patients undergoing minor oral surgery procedures.
2. Value the importance of effective communication and patient education in minor oral surgery procedures.
3. Demonstrate a commitment to providing high-quality patient care and respecting patients' autonomy and dignity.
4. Organize and prioritize patient care to ensure efficient and effective management of minor oral surgery procedures.
5. Demonstrate a commitment to ongoing professional development and staying current with best practices in minor oral surgery. Characterize the importance of empathy, compassion, and respect in providing care to patients undergoing minor oral surgery procedures.
6. Demonstrate a commitment to upholding ethical standards and principles in the practice of minor oral surgery.

TABLE OF SPECIFICATIONS

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time / Hours	Assessment	No of Items
				C	P	A				
TOPIC: TOOTH EXTRACTION										
		Procedure	Explain the procedure for closed extraction	C2						5
1	Week-1	Technique	Describe the specific technique for removal of each tooth	C2			Interactive Lecture/SGD	2	MCQS	
2		Primary teeth extraction	Illustrate the modification techniques for primary teeth extraction	C3						
3		Post extraction	Explain the post extraction tooth socket care	C2						
4		Practical performance	Under the supervision Practice the ability to modify tooth extraction techniques to accommodate different patient needs and situations, including the use of elevators, forceps		P4		Demo/ Charts/ Video	1	OSPE	
5	Organize and prioritize	Organize and prioritize patient care, during tooth extraction procedures, including empathy, communication, and pain management			A4	Role play				
TOPIC: PRINCIPLES OF FLAP DESIGN & MANAGEMENT										
		Parameter for soft tissue flap	Design the parameter for soft tissue flap	C5			Interactive Lecture/SGD	2	MCQS	8
7	Week-2	Types of mucoperiosteal flaps	Comprehend the different types of mucoperiosteal flaps (e.g. triangular, rectangular, rotational) and their indications	C2						
8		Mucoperiosteal flaps	Developing of mucoperiosteal flaps	C5						
9		Principle of suturing	Elevate the Principle of suturing	C4						
10		Practical performance	Under the supervision practice the proper technique to design different types of flaps, including accurate incision, tissue handling, and suturing.		P5		Demo/ Charts/ Video	1	OSPE	
11		willingness to learning	Show willingness to learn and improve skills in flap design and management			A3	Role play			
TOPIC: PRINCIPLE AND TECHNIQUES FOR OPEN EXTRACTIONS										

12	Week-3	Indications for open extraction	Recall the indications for the open extraction technique.	C1			Interactive Lecture/SGD		MCQS	7	
13		Technique for single-rooted teeth	Analyze the Technique for open extraction of single-rooted tooth	C3							
14		Technique for multi-rooted teeth	Analyze the Technique for open extraction of multi-rooted teeth	C3							
15		Removal of root fragments	Explain the removal of root fragments and tips and Justification for leaving root fragments	C2							
16		Practical performance	Show the ability to modify open extraction techniques to accommodate different patient needs and situations		P4		Demo/ Charts/ Video	1	OSPE		
18		Comply to SOP	Show willingness to learn and improve skills in open extraction technique			A3	Role play				
TOPIC: MULTIPLE EXTRACTIONS											

19	Week-4	Treatment planning	Evaluate the treatment planning and extraction sequencing	C4			Interactive Lecture/SGD	2	MCQS	2
20		Technique for multiple extractions	Discuss the Technique for multiple extractions	C2						
21		Practical performance	Observe the technique for designing and executing multiple extraction flaps, including accurate incision, tissue handling, and suturing.		P1		Demo/ Charts/ Video	1	OSPE	
22		Empathy and understanding	Receive and respond to patient concerns and anxiety related to multiple extractions technique, and demonstrate empathy and understanding			A1	Roleplay			

TOPIC: PRINCIPLE OF MANAGEMENT OF IMPACTED TOOTH											
23	Week 5-6	Preoperative patient management	Evaluate Preoperative patient management	C4			Interactive Lecture/SGD	2	MCQS	9	
24		Indication and contraindication	Recall the Indication and contraindication for removal of impacted teeth	C1							
25		Classifications of the mandibular 3 rd molar impaction.	Recall the definitions and classifications of the mandibular 3 rd molar impaction.	C1							
26		Root morphology	Explain the Root morphology of impacted teeth	C2							

27		Other impacted teeth	Discuss the removal of other impacted teeth	C2						
28		Surgical procedure technique	Evaluate the treatment planning and explain Surgical procedure technique	C4						
29		Perioperative patient management	Evaluate Perioperative patient management	C4						
30		Practical performance	Observe the proper technique for surgical exposure and removal of impacted teeth		P1		Demo/ Charts/ Video	1	OSPE	
31		Patient care	Organize and prioritize patient care, and demonstrate a commitment to providing high-quality patient care			A4	Role play			
TOPIC: POST-OPERATIVE PATIENT MANAGEMENT										
32	Week-7	Post-operative complications	Recall the common post-operative complications and their management (hemorrhage, pain and discomfort, diet, oral hygiene, edema, trismus, ecchymosis, infection)	C1			Interactive Lecture/SGD	2	MCQS	5
33		Follow up	Analyze the importance of post-operative follow up	C3						
34		Practical performance	under the supervision Perform post-operative patient management, including the ability to identify and manage complications		P3		Demo/ Charts/ Video	1	OSPE	
35		Communication and patient education	Value the importance of effective communication and patient education in post-operative patient management			A3	Role play			
TOPIC: PREVENTION AND MANAGEMENT OF EXTRACTION COMPLICATIONS										
36	Week-8	Extraction complications	Recall the common complications associated with tooth extractions, including soft tissue injuries, Problem with the tooth being extracted, Injury to the adjacent tooth, Injury to the osseous structure, Injury to the adjacent structure, Oroantral communication, Post-operative bleeding, Delay healing and infection, mandible fracture)	C1			Interactive Lecture/SGD	2	MCQS	5
37		Prevention and management	Comprehend the principles of prevention and management of extraction complications	C2						
38		Practical performance	Perform proper technique for controlling bleeding		P5		Demo/	1	OSPE	

			during and after tooth extraction.				Charts/ Video				
39		Practical performance	Perform proper technique for managing dry socket, including irrigation and dressing		P5						
40		Communication and patient education	Value the importance of effective communication and patient education in preventing and managing extraction complications			A3	Role play				
TOPIC: MANAGEMENT OF DENT ALVEOLAR INJURIES											
41	Week 9-10	Examination	Recall History, clinical examination, radiographic examination	C1			Interactive Lecture/SGD	2	MCQS		
42		Classification of traumatic injuries	Recall the Classification of traumatic injuries to the teeth and supporting structure like fractures, laxation and avulsion	C1							
43		Treatment plan	Analyze the different treatment options to manage the dento alveolar injures	C3							
44		Practical performance	Demonstrate proper technique for managing avulsed tooth including extra oral time for replantation's		P4		Demo/ Charts/ Video	1	OSPE		5
45		Skills improvement	Show willingness to learn and improve skills in managing dent alveolar injuries			A3	Role play				
TOPIC: EXCISION OF MUCOCELE											
46	Week-11	Definition	Recall the definition, etiology and clinical features of mucocele	C1			Interactive Lecture/SGD	2	MCQS	2	
47		Procedure	Explain the procedure of its excision	C2							
48		Practical performance	Perform proper technique for excising mucocele		P5		Demo/ Charts/ Video	1	OSPE		
49		Skills improvement	Show willingness to learn and improve skills in managing mucocele			A3	Role play				
TOPIC: EXTRACTIONS OF BROKEN-DOWN ROOT											
50	Week-12	Definition	Recall the definition, etiology and clinical features of BDR	C1			Interactive Lecture/SGD	2	MCQS	3	
51		Procedure	Analyze different surgical technique for BDR including sectioning and elevation	C3							
52		Practical performance	Perform proper technique for extracting BDR		P5		Demo/ Charts/ Video				

53		Skills improvement	Show willingness to learn and improve skills in extracting the BDRs			A3	Role play	111	OSPE		
TOPIC: FRENECTOMY											
54	Week-13	Definition	Recall the definition of Labial frenectomy, Lingual frenectomy	C1			Interactive Lecture/SGD	2	MCQS	4	
55		Surgical technique	Analyze different surgical technique for excising frenum including simple excision and z plasty technique	C3							
56		Practical performance	Demonstrate proper technique for excising frenulum			P1		Demo/ Charts/ Video	1		OSPE
57		Communication and patient education	Value the importance of effective communication and patient education in frenectomy t management				A3	Role play			
TOPIC: OPERCULECTOMY											
58	Week-14	Definition	Recall the definition, etiology, and clinical features of operculum	C1			Interactive Lecture/SGD	2	MCQS	4	
59		Surgical technique	Analyze the different surgical technique for excising operculum including simple excision and laser assisted surgery	C3							
60		Practical performance	try to perform proper technique for excising operculum			P3		Demo/ Charts/ Video	1		OSPE
61		Communication and patient education	Value the importance of effective communication and patient education in operculum management				A3	Role play			
TOPIC: EPULIS REMOVAL											
62	Week-14	Definition	Recall the definition, etiology and clinical features of Epulis	C1			Interactive Lecture/SGD	2	MCQS	3	
63		Surgical technique	Analyze the surgical technique for excising Epulis	C3							
64		Practical performance	try to perform proper technique for excising Epulis			P3		Demo/ Charts/ Video	1		OSPE
65		Communication and patient education	Value the importance of effective communication and patient education in Epulis management				A3	Role play			
TOPIC: BIOPSY											
66		Definition	Recall the definition of biopsy	C1				2	MCQS		

67	Week -15	Type of biopsy	Explain the Type of biopsy (oral cytology based, incisional biopsy, excisional biopsy, aspirational biopsy)	C2			Interactive Lecture/SGD			
68		Techniques	Explain Soft tissue biopsy techniques	C2						
69		Techniques	Explain Hard tissue biopsy technique	C2						
70		Practical performance	Try to Perform proper technique for performing biopsy procedure including preparation, incision, and specimen handling		P3		Demo/ Charts/ Video	1	OSPE	5
71		Communication and patient education	Value the importance of effective communication and patient education in biopsy procedure			A3	Role play			
TOPIC: APICECTOMY										
72	Week -16	Definition	Recall the definition of apicectomy	C1			Interactiv e Lecture/SG D	2	MCQS	4
73		Indication and contraindication	Explain the indication and contraindication for apicectomy	C2						
74		Techniques	Analyze different surgical techniques for apicectomy	C3						
75		Practical performance	Demonstrate proper techniques for performing apicectomy including incision ,dissection , and root end preparation		P1		Demo/ Charts/ Video	1	OSPE	
76		Skills improvement	Show willingness to learn and improve skills in performing apicectomy			A3	Role play			

Recommended Books:

- J Peterson, Tucker, Edward Ellis. Contemporary Oral & Maxillofacial surgery
- Oral and maxillofacial surgery by Kruger

Assessment Breakdown				
S. No	Course Content	No of Mcqs	No of OSPE/OSCE Stations	Interactive/Static
	Tooth extraction	05	01	Static
2.	Principles of flap design & management	06	01	Interactive
3.	Principles and techniques for open extractions	07	01	Static
4.	Multiple extractions	02	01	Static
5.	Principle of management of impacted tooth	08	02	Static
6.	Post-operative patient management	05	01	Interactive
7.	Prevention and management of extraction complications	05	01	Interactive
8.	Management of dental alveolar injuries	04	01	Static
9.	Excision of mucocele	02	-	Static
10.	Extractions of broken-down root	03	01	Static
11.	Frenectomy	04	-	-
12.	Operculectomy	04	01	Static
13.	Epulis REMOVAL	03	-	-
14.	Biopsy	05	01	Static
15.	Apicectomy	04	01	Static
16.	Suturing	04	01	Interactive
TOTAL	16	70	14	14

THE END