HITEC

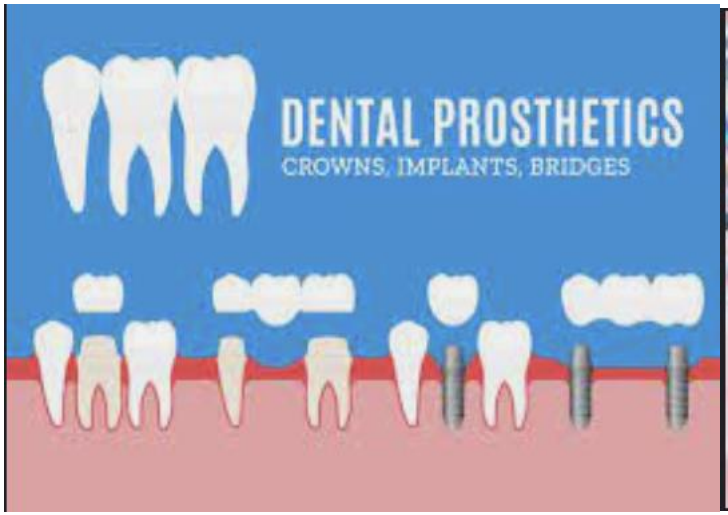
DENTAL COLLEGE HITEC-IMS

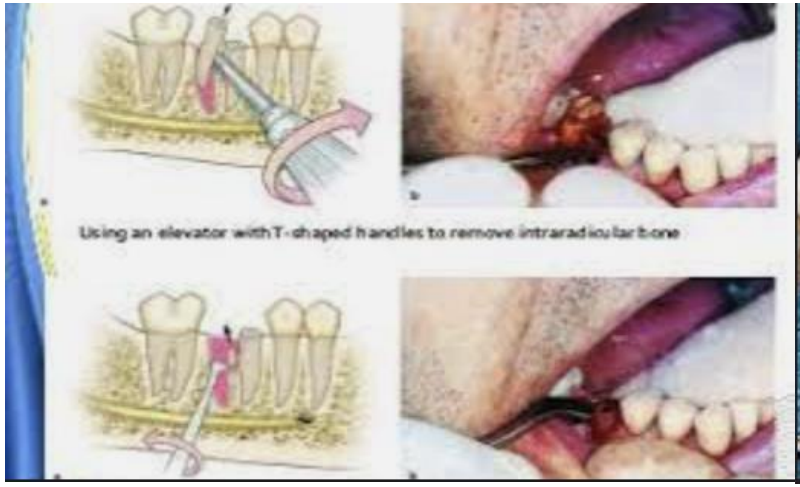
Study Guide Y4 - T3 - D22

Term 3

Final Year BDS

Coordinator: Prof. Dr. Beenish Qureshi


DENTAL PROSTHETICS
CROWNS, IMPLANTS, BRIDGES


Using an elevator with T-shaped handles to remove intraradicular bone

"Medical education does not exist to provide students with a way of making a living but to ensure the health of the community."

Rudolf Virchow

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List of Abbreviations

CBL	Case Base Learning
EECS	Early Exposure to Clinical Skills
EOT	End of Term Examination
FGD	Focus Group Discussion
LGIF	Large Group Instructional Format
LGIS	Large Group Interactive Session
MCQ	Multiple Choice Question
MIT	Mode of Information Transfer
NUMS	National University of Medical Sciences
OMFS	Oral & Maxillofacial Surgery
OSCE	Objectively Structured Clinical Examination
OSPE	Objectively Structured Practical Examination
PMC	Pakistan Medical Commission
SAQ	Short Answer Question
SDL	Self-Directed Learning
SEQ	Structured Essay Questions
SGD	Small Group Discussion
TOS	Table of Specification
WFME	World Federation of Medical Education

NUMS Vision

The vision of the National University of Medical Sciences is to improve the quality of life through education, research, innovation, and healthcare, thereby contributing to endeavors to make Pakistan and this world a better place to live in.

Institutional Vision

Leading advancement in Oral & Dental health through excellence in education, patient care and research

Institutional Mission

To serve the local and global communities by producing competent, ethical, socially responsible, research oriented and life long learning oral health care professiona

Term Committee

Coordinator: Professor Dr. Beenish Qureshi

HoD Operative Dentistry, Contact No: 0333-4368332

S. No.	Name	Designation	Departments	Contact Number
1	**Dr Rai Tariq**	Professor / Vice Principal	Community Dentistry	0333-5718658
2	**Dr Waheed Ullah**	Professor / Dean Clinical Sciences / HoD	Orthodontics	0333-5206136
3	**Dr Beenish Qureshi**	Professor / HoD	Operative Dentistry	0333-4368332
4	**Dr Aamir Rafique**	Associate Professor / HoD	Prosthodontics	0334-4353578
5	**Dr Maimoona Siddique**	Assistant Professor / HoD	OMFS	0333-2173509
6	**Dr Faizan Munir**	Assistant Professor / HoD Dental Education	Dental Education	0334-0031031
7	**Sana Irfan**	Student	Final Year	0333-5335466

8	**Tassawar Hussain**	Student	Final Year	0304-0150250

Curriculum Overview/Implementation

1. Preface

The curriculum meets the standards of the Pakistan Medical Commission, the Higher Education Commission of Pakistan, and the World Federation of Medical Education, so that our students, on completion of the program, have the required competencies as defined worldwide in a graduate doctor.

2. Model

The curriculum of Dental College HITEC-IMS is based on a traditional discipline-based model of educational strategies. Nevertheless, we have incorporated some elements of SPICES model student-centred, integrated, community-oriented and systematic aspects. As a result, our curriculum has evolved, considering traditional, experiential, behavioural, and constructivist perspectives of curricula.

3. Organisation

The curriculum is organised and integrated along important vertical and horizontal dimensions. The content taught is integrated concurrently in the horizontal organisation and vertically across the years of BDS program. The course of the final year is divided into three terms. In each term, the sequencing of the content is logical and integrated. Research methodology and professionalism will be inculcated as part of the longitudinal theme.

4. Teaching Strategies

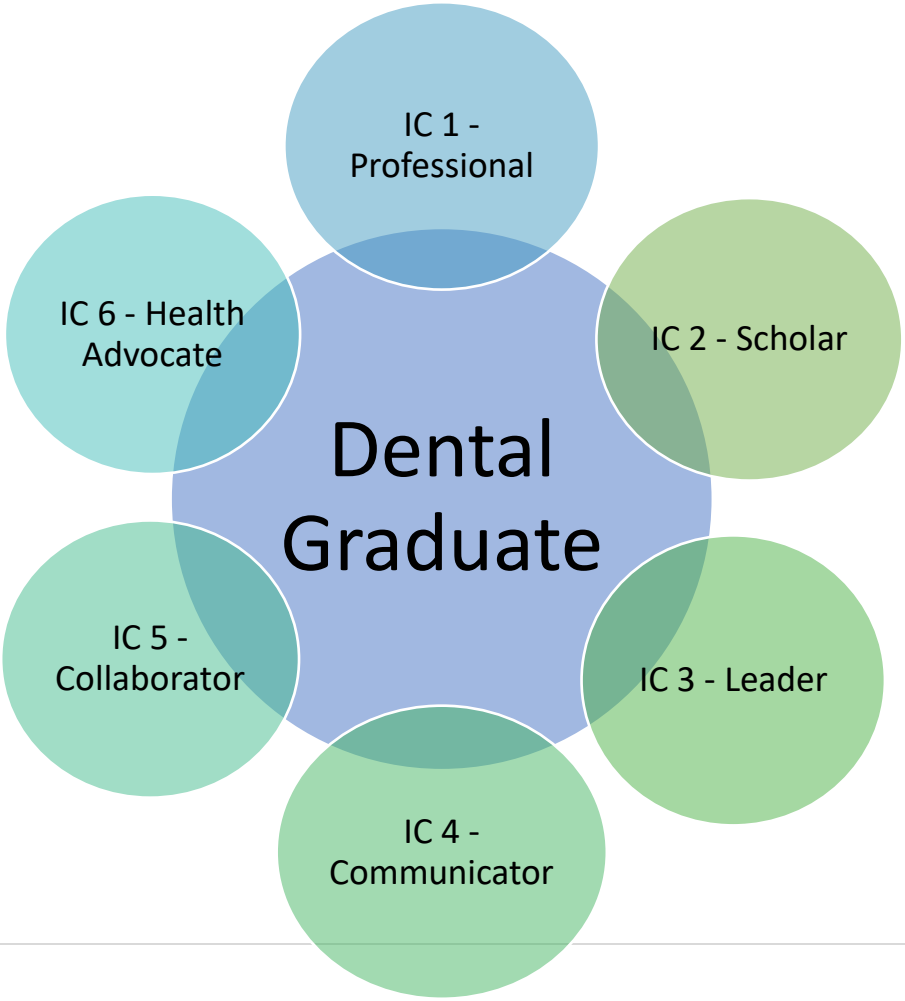
This curriculum aims to improve doctors' clinical skills, including communication, leadership, management, research skills, ethical values and professionalism. BDS final year deals with the clinical subjects of Operative Dentistry, Orthodontics, Prosthodontics and Oral & Maxillofacial Surgery to learn and develop clinical skills. In addition, clinical exposure is ensured, which helps them learn real-life clinical scenarios and implement the skills learnt during the academic session.

Multiple teaching strategies are used. First, LGIS are used to provoke thought and understanding among students. These help to understand topics which need effort including basic sciences review along with updated research, and best evidence medical information. Second, we are teaching clinical implications of each topic giving learning experience that is contextual, realistic, and relevant. Third, small group discussions encourage students to learn socially and discuss their concepts to refine their schemas.

5. Assessment

Constructive feedback is provided via formative assessments by assignments, presentation, CBL and class tests. The students are summatively assessed by term and pre annual examinations at the end of the academic year according to the standards outlined by NUMS.

Institutional Competency Framework



Alignment of Term Outcomes with Institutional Competencies

S. No.	Term Outcomes	Institutional Competencies
1.	Relate and implement the knowledge of sterilisation & cross-infection protocol in relevant clinical scenarios in the dental operatory	IC 1, IC 6
2.	Correlate the aetiology of oral diseases with applying knowledge, interception & management in relevant clinical conditions	IC 1 to IC 6
3.	Apply the concepts of occlusion in the development of dentofacial problems, orthodontic, restorative, and prosthetic management	IC 1 to IC 6
4.	Correlate the clinical presentation of dentate & edentulous patients with the application of principles of surgical practice and restorative management	IC 1 to IC 6
5.	Recognise a medical emergency in the dental setting and apply the knowledge of prevention & management in clinical departments	IC 1 to IC 6
6.	Apply the principles of research for writing research proposals	IC 1, IC 2, IC 4

Yearly Clinical Rotation Schedule

FINAL YEAR BDS SESSION 2022-23

Rotation (7th February to 5th June)

DURATION	7th February to 6th March (4 weeks)			
DEPARTMENT	Operative Dentistry	Prosthodontics	Orthodontics	OMFS
GROUP	A	B	C	D

DURATION	7th March to 3rd April (4 weeks)			
DEPARTMENT	Operative Dentistry	Prosthodontics	Orthodontics	OMFS
GROUP	D	A	B	C

DURATION	4th April to 1st May (4 weeks)			
DEPARTMENT	Operative Dentistry	Prosthodontics	Orthodontics	OMFS
GROUP	C	D	A	B

DURATION	9th May to 5th June (4 weeks)			
DEPARTMENT	Operative Dentistry	Prosthodontics	Orthodontics	OMFS
GROUP	B	C	D	A

2nd Clinical Rotation (6th June to 12th November)

DURATION	6th June to 25th June & 18th July to 31st July (5 weeks)			
DEPARTMENT	Operative Dentistry	Prosthodontics	Orthodontics	OMFS

GROUP	A	B	C	D

DURATION	**1st August to 4th September (5 weeks)**			
DEPARTMENT	Operative Dentistry	Prosthodontics	Orthodontics	OMFS
GROUP	D	A	B	C

DURATION	**5th September to 9th October (5 weeks)**			
DEPARTMENT	Operative Dentistry	Prosthodontics	Orthodontics	OMFS
GROUP	C	D	A	B

DURATION	**10th October to 12th November (5 weeks)**			
DEPARTMENT	Operative Dentistry	Prosthodontics	Orthodontics	OMFS
GROUP	B	C	D	A

GROUP A: Roll # 1-12

GROUP B: Roll# 13-24

GROUP C: Roll# 25-36

GROUP D: Roll# 37-47

Assessment

Types and Schedules

Assessment is continuous in the form of class tests, departmental assignments and practical tests. Continuous assessment is separate from the Term exam.

Formative assessment includes tests/written assignments, presentations and feedback to the student during the teaching time. The purpose of formative assessment is to provide feedback to the students for improvement and to teachers to identify areas where students need further guidance.

From the 4th week onwards, the class tests of Operative Dentistry, Prosthodontics, Orthodontics, and OMFS will be held on rotation basis. During the 12th week, the end-of-term exam will be taken. The EOT exam will comprise of theory and practical separately. All these will form part of summative assessment, along with pre-annual exams. This will contribute towards internal assessment.

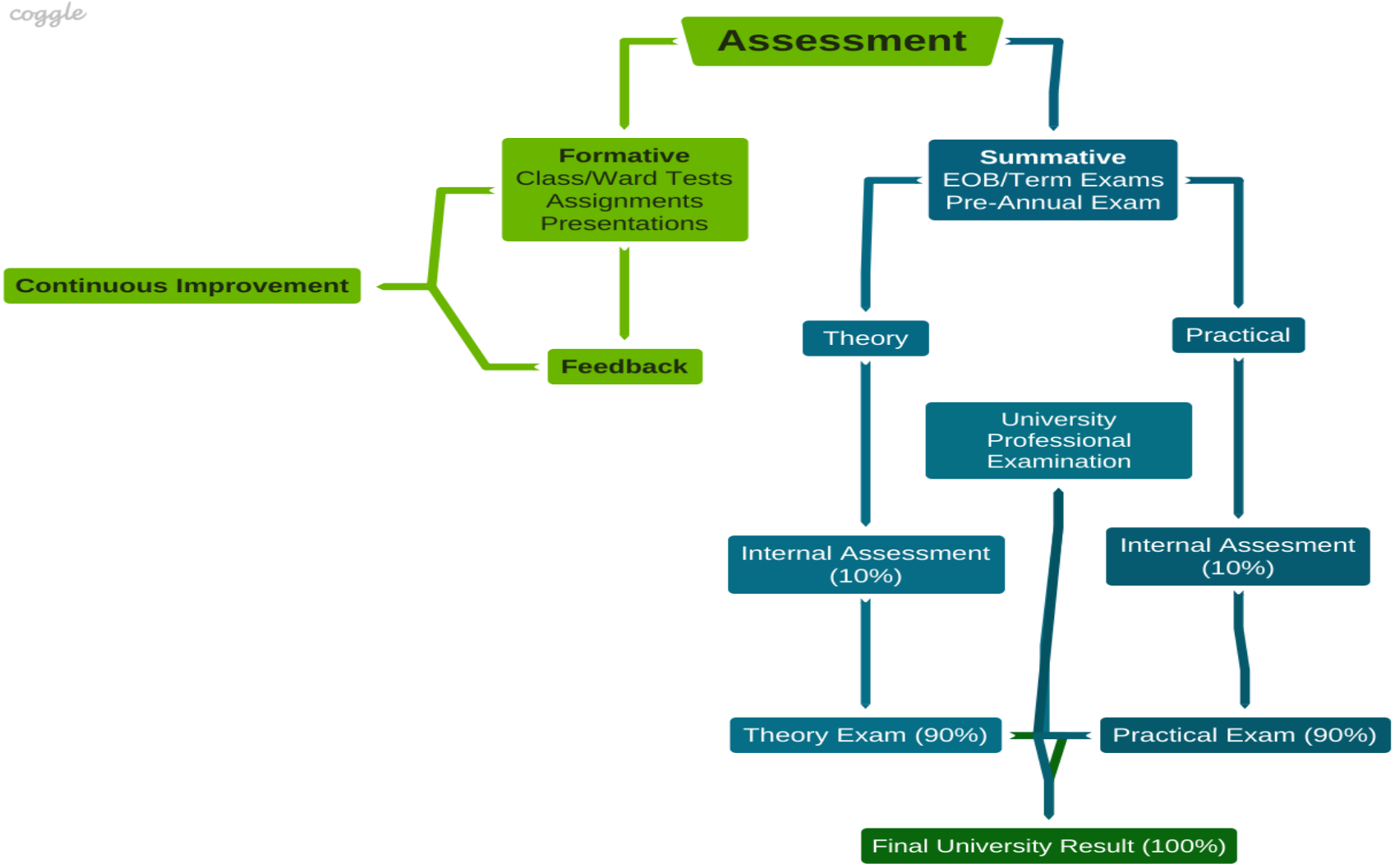
Students must secure 50% marks in theory and practical exams separately, per university criteria.

The student who fails the end-of-term exam will be allowed to attend the next term; however, his/ her internal assessment will be affected accordingly.

<u>Internal assessment criteria for submission of internal assessment marks of final Professional Examination NUMS:</u>

1. The weightage of internal assessment shall be 10% or ten marks for a 100 marks Paper in the annual examination.
2. End-of-term examination / practical quota, pre-annual examination and accumulative attendance shall contribute toward internal assessment.

Standard Assessment Map



Academic Calendar

Final Year BDS CLASS-2022

Academic Event	Duration
Commencement of new academic year	7th February 2022 Start of Session
First-term—12Weeks	7th February 22 to 30th April 22
Sports week	28th March to 31st March 25th April to 29th April
1st term exam	
Eid ul Fitr holidays 1 Week	1st May 22 to 8th May 22
Second term --12 Weeks + 3 Weeks	9th May 22 to 19th August 22
Academics 7/12	9-5-22 to 24-6-22
Summer break + Eid ul Adha holidays	25th June 22 to 17th July 22
Academics 5 /12 Second Term exams	18-7-22 to 21-8-22
Third term---12 Weeks	22nd August 22 to 11th November 22

Academics 12/12	**22-8-22 to 11-11-22**
Prep Leaves for Send up exam—1 Week	**12-11-22 to 20-11-22**
Send up/ Pre prof exam--- 2 Weeks	**21-11-22 to 2-12-22**
Prep Leaves for Prof---- 3 Weeks	**3-12-22 to 25-12-22**
Final professional exam	**26-12- 22 As proposed by NUMS**

Sample Timetable

Final year BDS (2022-2023)
Weekly Time Table (07th Feb 2022 to 11th Feb 2022)
DENTAL COLLEGE HITEC-IMS

<table>
<tr><th>DAY/DATE</th><th>8:30 – 9:15</th><th>9:15 – 10:00</th><th>10:00 -10:20</th><th colspan="3">10:20 – 3:30</th></tr>
<tr><td>MONDAY
07-02-22</td><td><u>Operative Dentistry</u>
Orientation and intro to Operative Dentistry
(Dr. Beenish)</td><td><u>Prosthodontics</u>
Orientation & intro to FPD
(Dr. Aamir)</td><td rowspan="5"><u>Break</u></td><td colspan="3" rowspan="2"><u>CLINICS</u>
<u>GROUP-A</u> <u>(Operative Dentistry)</u>
• Orientation to dept, chair positioning
• History taking & clinical examination
• Clinical quota
<u>GROUP-B</u> <u>(Prosthodontics)</u>
• Crown preparation
<u>GROUP-C</u> <u>(Orthodontics)</u>
• History and Clinical examination
<u>GROUP-D</u> <u>(OMFS)</u>
• Orientation to dept, chair positioning
• History taking & clinical examination
• Pre –perioperative patient evaluation</td></tr>
<tr><td>TUESDAY
08-02-22</td><td><u>Orthodontics</u>
Orientation and Intro to orthodontics
(Dr. Waheed)</td><td><u>OMFS</u>
Orientation and Exodontia
(Dr. Maimoona)</td></tr>
<tr><td>WEDNESDAY
09-02-22</td><td><u>Prosthodontics</u>
Systemic health consideration in CD patient
(Dr. Sameen)</td><td><u>Operative Dentistry</u>
Infection control
(Dr. Beenish)</td><td colspan="3"></td></tr>
<tr><td>THURSDAY
10-02-22</td><td><u>OMFS</u>
Exodontia
(Dr. Maimoona)</td><td><u>Orthodontics</u>
Intro to orthodontics
(Dr. Waheed)</td><td colspan="3"></td></tr>
<tr><td>FRIDAY
11-02-22</td><td><u>Prosthodontics</u>
History taking & medical exam
(Dr. Aamir)</td><td><u>Operative Dentistry</u>
Infection control
(Dr. Beenish)</td><td colspan="3"></td></tr>
<tr><td colspan="4"></td><td>10:20-1:00</td><td>1:00-2:00</td><td>2:00-3:30</td></tr>
<tr><td colspan="4"></td><td><u>Clinics</u></td><td><u>Jumma Break</u></td><td><u>Small Group Discussion/CBL</u>
Diagnosis and treatment planning
CPD designing
Patient evaluation
Macro-esthetics</td></tr>
</table>

Group: A Roll # 1-12; **Group: B** Roll # 13-24; **Group: C** Roll # 25-36; **Group: D** Roll # 37-47

Dr. Beenish Qureshi

Dr. Waheed Ullah
Vice Principal

Dr. Aamir Rafique
Principal

Dr. Mudassar Saleem

Term – III

Clinical Diagnosis and Management

Structured Summary – Term III

Term Code	Y4-T3-D22
Term Title	Clinical diagnosis & management
Duration Of Term	12weeks
Important Dates	22nd August 2022 – 21st October 2022
Horizontally Integrated Themes	1. Preprosthetic Surgical procedure 2. Cleft lip & palate 3. Orthognathic surgery 4. Implants
Vertically Integrated Themes	Research Methodology Communication Skills* Professionalism*
Prerequisite Blocks	First & Second Terms Final Year

Tentative Exam Schedule[1]

Final Year BDS – 3rd term/ Send up -2022

Date	Subject	Timing
25th October 2022 Tuesday	Operative Dentistry	8:30 am
28th October 2022 Friday	Orthodontics	8:30 am
1st November 2022 Tuesday	Prosthodontics	8:30 am
4th November 2022 Friday	OMFS	8:30 am
7th November 2022 Monday	Group A –Operative Dentistry Group B--Prosthodontics Group—C Orthodontics	8:30 am onwards

[1] This is a tentative schedule. Therefore, it is subject to change.

	Group –D OMFS	
8th November 2022 Tuesday	Group A—Prosthodontics Group B—Orthodontics Group C—OMFS Group D--Operative Dentistry	8:30 am onwards
9th November 2022 Wednesday	Group A— Orthodontics Group B—OMFS Group C—Operative Dentistry Group D--Prosthodontics	8:30 am onwards
10th November 2022 Thursday	Group A—OMFS Group B—Operative Dentistry Group C—Prosthodontics Group D--Orthodontics	8:30 am onwards

2

[2] This is a tentative schedule. Therefore, it is subject to change.

Learning Outcomes for Term III

1. Operative Dentistry

S. No.	Topics	Learning outcomes	Learning Objectives	IC Codes	MITs	Assessment tools
1.	Restoration of Endodontically treated teeth	At the end of session, student will be able to: • Discuss the need for restoration of endodontically treated teeth • Apply the knowledge to design and restore endodontically treated teeth using different techniques	At the end of the session student should be able to: **Knowledge** • Identify the restorability status of tooth • Describe Options available for restoration • Describe different clinical procedures to restore endodontically treated teeth • Evaluate Direct and indirect restorative options	IC 2	LGIS SGD	MCQs SEQs VIVA
			Skill • Prepare & restore endodontically treated teeth	IC 1 to IC 6	Demonstration	OSCE
			Attitude • Treat patients with empathy	IC 1 IC 4	Demonstration	OSCE
2.	Complex Amalgam Restorations	• Apply the knowledge of pins in restoring complex cavities • Explain factors affecting retention of pins	**Knowledge** • Define pin retained restorations • Enlist indications & contraindications of pin retainedrestorations • Enlist advantages & disadvantages of pin retainedrestorations • Explain the cavity preparationprocedure for pin retained restorations	IC 2	LGIS/ SGD	MCQs SEQs

		and problems associated with pins placement	• Enlist the types of pins • Enlist the factors affecting theretention of the pin in dentineand amalgam • Discuss the techniques for theplacement of pins • Discuss the clinical considerations before placementof pins • Discuss the problems that ariseduring the placement of pins			
3.	Tooth preparation for indirect restorations	• Discuss all the stages in the fabrication of indirect restorations	**Knowledge** • Explain advantages and disadvantages of indirect retainers • Enlist indications and contraindications of indirect retainers • Discuss steps of indirect toothcolored restoration • Discuss steps of cementation	IC 2	LGIS/ Demonstration/ SGD	MCQs/SEQs
4.	CAD/CAM Tooth preparation	• Demonstrate the knowledge to plan CAD/CAM to construct indirect restorations	**Knowledge** • Define CAD and CAM • Discuss the need for CAD/CAM • Discuss the applications ofCAD/CAM • Enlist the advantages ofCAD/CAM • Enlist the limitations ofCAD/CAM • Discuss the steps in CAD/CAM • Enlist the types of scanner • Discuss the materials used inCAD/CAM • Discuss the milling tools inCAD/CAM	IC 2	LGIS/SGD	MCQs/SEQ's /Viva
5.	Inlay and Onlay	• Demonstrate the knowledge to	**Knowledge**	IC 2	LGIS/SGD	MCQs/SEQs/Viva

		plan indirect restorations according to treatment need of patients	• Enlist the indications and contraindications of inlays • Enlist the advantages • Discuss the preparation, design and materials used • Explain the technique for cementation of indirect restorations			
6.	Veneers	• Apply the knowledge of veneers to construct an esthetic restoration	**Knowledge** • Enlist indications and contraindications of veneers • Enlist different types of veneers • Evaluate clinical techniques fordifferent types of veneers	IC 2 IC 4	LGIS/CBL	MCQs SEQs/Viva
7.	Minimal preparation bridges	• Apply the knowledge to describe indications & clinical technique for minimal preparation bridges	**Knowledge** • Enlist indications and contraindications • Enlist different materials used • Enlist clinical techniques	IC2	LGIS/SGD	MCQs /SEQ's/Viva
8.	Radiology and Radiography	• Demonstrate & apply the knowledge to interpret periapical & OPG	**Knowledge** • Discuss basic principles andinterpretations of dental radiography • Discuss clinical techniques forperforming periapical radiographs	IC2	LGIS / SGD	MCQs SEQs/ Viva

		radiographs & rectify the errors in radiographs	**Skill** • Demonstrate the interpretationand rectify the errors in periapical radiographs • Demonstrate the interpretation of OPG radiographs for diagnosis	IC 1 To IC 6	Demonstration	OSCE
			Attitude • Show empathy with patients	IC 1 IC 4	Demonstration	OSCE
9.	Non Odontogenic diseases mimicking pulpal and periodontal diseases	• Apply the knowledge to diagnose non odontogenic diseases	**Knowledge** • Enlist the differentiating features that help in diagnosing the non-odontogenic diseases	IC 2	LGIS / SGD	MCQs/SEQs/viva
10.	Root resorption	• Apply the knowledge to diagnose & devise treatment plan for root resorption	**Knowledge** • Identify different types of resorptions • Discuss the etiology of resorption • Discuss the management and prognosis	IC 2	LGIS/ SGD	MCQs/SEQs/viva
11.	Dental Emergencies	• Explain the causes of dental emergencies • Plan treatment for dental emergencies	**Knowledge** • Identify the problem, etiology and related factors • Discuss the management and prognosis	IC 2	LGIS/SGD	MCQs/SEQs/viva

12.	Discoloration of teeth	• Demonstrate the knowledge and skills related to tooth discoloration • Apply the knowledge to treat patients with discoloration	**Knowledge** • Identify different types of tooth discoloration • Describe different techniques used to treat discolored teeth • Describe Micro abrasion and Macro abrasion	IC 2	LGIS/SGD/ CBL	MCQs SEQs/Viva
13.	Bleaching	• Apply the knowledge of bleaching techniques to treat patients with discoloration • Demonstrate & apply the knowledge for selection of patient suitable for bleaching procedures	**Knowledge** • Explain different types of bleaching techniques (In office vital bleaching technique, Walking bleach technique, Home -applied technique) • Explain Non vital bleachingprocedure • Enlist advantages & disadvantages of bleaching	IC 2	LGIS	MCQs SEQs/Viva

14.	Medical Disability in Geriatric patients Childhood impairment and disability	• Apply knowledge to evaluate, diagnose & manage geriatric patients • Diagnose, plan and provide safe and effective treatment for children with conditions which may make them more prone to oral diseases or which may complicate the delivery of oral care	**Knowledge** • Discuss the procedure of preoperative patient evaluation	IC 2	LGIS	MCQs SEQs/Viva
			Skill • Evaluate a dental patient by: Medical history Physical examination • Manage a dental patient with problems of the following systems: 1. CVS 2. Pulmonary 3. Renal 4. Hepatic 5. Hematological	IC 1 to IC 6	Clinical Demonstration	OSCE
15.	Tooth Surface loss	• Explain etiology & treatment strategies for toot surface loss	**Knowledge** • Identify different types of tooth surface loss • Enlist Indices used for tooth surface loss • Describe different types of splints • Discuss management and follow up	IC 2	LGIS /SGD	MCQs SEQs/Viva

			Skill • Perform treatment strategies for tooth surface loss	IC 1 to IC 6	Demonstration/ practical	OSCE
			Attitude • Display a respectful behavior towards all the patients	IC 1 IC 4	Demonstration/ practical	OSCE

Practicals

S. No	Topic/theme	Learning Objective	IC Codes	MITs	Assessment tools
01.	Endodontic instruments and procedures	• Identify instrument design, function and formula • Canal preparation techniques, medicaments, obturation techniques and procedures	IC 1 to IC 6	Demonstration	OSCE/Practical
02.	Therapeutics and Anesthetics	• Effectively manage post-operative pain • Diagnose and medicate and carry out procedures • Indications and contraindications and interaction of drugs • Identify intracanal medicaments, their uses and application	IC 1 to IC 6	Demonstration	OSCE/Practical
03.	Radiographs & radiographic interpretation	• Demonstrate skill to use radiography in endodontics and its limitations • Identify endodontic pathology on radiographs	IC 1 to IC 6	Demonstration	OSCE/Practical

		• Identify pathological structures in periapical radiographs • Master technique for taking different periapical radiographs • Implement safety measures in clinical area			
04.	Emergency management	• Manage a case of trauma • Demonstrate skills to deal with interappointment emergencies • Manage a case of cracked tooth • Identify perforations in teeth • Clinically manage perforations	IC 1 to IC 6	Demonstration	OSCE/Practical

2. Prosthodontics

S. No.	Topic / Theme	Learning outcomes	Learning Objectives	IC Codes	MITs	Assessment tools
	COMPLETE DENTURE					
1.	The Try-in Appointment	At the completion of the session, the students should be able to: • Describe the steps involved in denture try-in	At the completion of the session, the students should be able to: **KNOWLEDGE** • Describe the steps involved in denture try-in	IC 2	LGIS SGD	MCQs SEQs VIVA
			SKILL • Perform try-in of waxed denture and verify the all the previous records	IC1 to IC6	Clinical Demonstration	OSCE
			ATTITUDE • Display a respectful behavior towards all the patients	IC 1 IC 4	Clinical Demonstration	OSCE
2.	Prosthesis Insertion and Follow-up appointments	• Describe the protocol for denture insertion • Use pressure indicating paste • Use BULL rule for occlusal equilibration	**KNOWLEDGE** • Describe the protocol for denture insertion • Enlist indications for use of pressure indicating paste • Describe various patterns observed while reading pressure- indicating paste • Enlist post-insertion instructions provided to patient about denture care • Describe occlusal equilibration using BULL rule	IC 2	LGIS SGD	MCQs SEQs VIVA

			• Describe protocol for follow-up appointment for a complete denture patient			
			SKILL • Follow the insertion protocol of complete denture • Use of pressure indicating paste and interpret the pattern for adjustment of denture bearing area • Adjust the occlusion by spot grinding and using BULL's rule • Call the patient for necessary follow up	IC1 to IC6	Clinical Demonstration	OSCE
			ATTITUDE • Display a respectful attitude towards patients • Educate the patient about denture hygiene and other possible problems that can be encountered during adaptive phase	IC 1 to IC 6	Demonstration	OSCE
3.	Single Dentures	• Diagnose and plan the single denture • Manage complications associated with single dentures	**KNOWLEDGE** • Define a single denture • Describe diagnosis and treatment planning for single dentures • Describe possible complications associated with single dentures and their management	IC 2	LGIS SGD	MCQs SEQs VIVA
4.	Life span of complete denture	• Discuss the concept of relining or rebasing of the complete denture • Describe the various indications and	**KNOWLEDGE** • Differentiate between relining and rebasing • Enlist indications for relining and rebasing • Describe clinical procedures for relining	IC 2	LGIS SGD	MCQs SEQs VIVA

		procedures of copy denture	• Describe the physical stages tissue conditioner goes through during setting • Discuss materials available for relining and rebasing • Describe various procedures involved in denture repair • Define copy dentures • Describe the steps involved in fabrication of copy dentures			
5.	Speech Consideration with Complete Dentures	• Diagnose and manage speech problems in patient with complete denture	**KNOWLEDGE** • Describe various sounds that may be affected by teeth position • Describe prosthetic considerations in diagnosing and managing speech problems	IC 2	LGIS SGD	MCQs SEQs VIVA
6.	Indirect retainer	• Recall the role of indirect retainers in partial denture designing	**KNOWLEDGE** • Define indirect retainers • Describe factors that influence the effectiveness of indirect retainers • Describe auxiliary functions of indirect retainers • Describe various forms of indirect retainers	IC 2	LGIS SGD	MCQs SEQs VIVA
7.	Denture Base Considerations	• Differentiate between tooth-supported and tooth & tissue supported denture bases	**KNOWLEDGE** •Describe functions of tooth-supported and tooth & tissue supported denture bases •Compare advantages and disadvantages of metal and resin	IC 2	LGIS SGD	MCQs SEQs VIVA

			denture bases •Describe methods of attaching artificial teeth •Describe stress breakers			
8.	Removable Partial Denture Design	• Discuss the principles of Removable Partial Denture Design	**KNOWLEDGE** •Describe the difference in prosthesis support and influence on design •Differentiate between two main types of removable partial denture	IC 2	LGIS SGD	MCQs SEQs VIVA
9.	Biomechanics of Removable Partial Denture	• Discuss possible movements of a partial denture and various components that counter these movements	**KNOWLEDGE** • Describe possible movements of a partial denture and various components that counter these movements	IC 2	LGIS SGD	MCQs SEQs VIVA
10.	Surveying	• Describe surveying and tripoding	**KNOWLEDGE** •Define surveying •Differentiate between various types of surveyors •Enlist objectives of surveying •Describe factors which determine the path of placement and removal •Describe tripoding and its types	IC 2	LGIS SGD	MCQs SEQs VIVA
	IMPLANT PROSTHODONTICS					

11.	Introduction	• Discuss dental Implants, their components and types	**KNOWLEDGE** •Define dental implant •Define components of a dental implant assembly •Classify dental implants •Enlist differences between teeth and implants	IC 2	LGIS	MCQs SEQs VIVA
12.	Osseointegration	• Discuss the science of osseointegration of dental implants	**KNOWLEDGE** •Define osseointegration •Describe factors that determine success and failure of osseointegration	IC 2	LGIS	MCQs SEQs VIVA
13.	Management / Complications in Implant Prosthodontics	• Plan treatment for Edentulous patient requiring fixed Full Arch implant Supported Prostheses • Manage of the problems and complications associated with dental implants	**KNOWLEDGE** •Describe treatment options for edentulous maxilla •Describe treatment options for edentulous mandible • Enlist possible problems and complications associated with dental implants	IC 2	LGIS SGD	MCQs SEQs VIVA
14.		• Plan treatment for patients requiring implant overdentures	**KNOWLEDGE** • Describe inclusion and exclusion criteria for implant treatment • Describe various available implant supported overdenture treatment options	IC 2	LGIS SGD	MCQs SEQs VIVA

			• Enumerate indications for ball, magnetic and bar attachments			
			• **MAXILLOFACIAL PROSTHODONTICS**			
15.	Maxillofacial Prosthodontics	• Χλασσιφψ μαξιλλοφαχιαλ δεφεχτσ ανδ plan προστηοδοντιχσ τρεατμεντ οπτιονσ φορ τηεσε πατιεντσ	**KNOWLEDGE** • Δεσχριβε προστηετιχ χονσιδερατιονσ φορ εδεντυλουσ μαξιλλοφαχιαλ προστηεσισ • Δεσχριβε Αραμανψσ χλασσιφιχατιον φορ παρτιαλλψ εδεντυλουσ μαξιλλεχτομψ δενταλ αρχηεσ • Δεσχριβε Χαντορ ανδ Χυρτισ χλασσιφιχατιον φορ παρτιαλλψ εδεντυλουσ μανδιβυλεχτομψ δενταλ αρχηεσ • Διφφερεντιατε βετωεεν ϖαριουσ τψπεσ οφ μαξιλλαρψ οβτυρατορ προστηεσισ • Δεσχριβε τρουβλεσηοοτινγ αν οβτυρατορ φορ: Λαχκ οφ ρετεντιον, Νασαλ ρεφλυξ, Ηψπερ νασαλιτψ • Ενλιστ τψπεσ οφ σοφτ παλατε προστηεσεσ • Δεσχριβε προστηοδοντιχ treatment considerations for irradiated edentulous and partially dentate patients	IC 2	LGIS	MCQs SEQs VIVA

Practical

Weeks	Topic /Theme	Learning Objectives	IC Codes	MIT	Assessment Tools
Week 1	• Orientation to prosthodontic department • History taking & clinical examination • Primary impressions of edentulous patients • Custom tray fabrication • Secondary impression	• Identify instruments & appliances • Demonstrate techniques of history taking & clinical examination • Take primary impression using impression compound • Fabricate custom tray using auto polymerizing resins • Take secondary impression with zinc oxide eugenol using green stick as border molding material	IC 1 to IC 6	Demonstration	OSCE/Practical
Week 2	• Maxillomandibular relationship • Teeth setup	• Record maxillomandibular relation using biometric guidelines • Perform teeth setup using records obtained from patients and also utilizing the biometric guidelines	IC 1 to IC 6	Demonstration	OSCE/Practical
Week 3	• Try-in • Laboratory procedures for denture processing	• Demonstrate the verification of esthetic, phonetics, centric record &VDO at try-in of dentures • Perform flasking, de waxing, packing, curing and finishing of dentures	IC 1 to IC 6	Demonstration/S	OSCE/Practical
Week 4	Insertion of dentures and follow up	• Perform insertion of dentures and post insertion follow up management	IC 1 to IC 6	Demonstration	OSCE/Practical

Week 5	Cast partial denture designing (Kennedy' class I &II)	• Perform designing of partial denture designing in Kennedy's class I & II	IC 1 to IC 6	Demonstration	OSCE/Practical
Week 6	Cast partial denture designing (Kennedy' class III &IV)	• Perform designing of earn about partial denture designing in Kennedy's class III & IV	IC 1 to IC 6	Demonstration	OSCE/Practical
Week 7 &8	Anterior teeth Crown preparation	• Perform the preparation of anterior teeth for metal ceramic and all ceramic crowns	IC 1 to IC 6	Demonstration	OSCE/Practical
Week 9 &10	Posterior teeth Crown preparation	• Perform the preparation of posterior teeth for metal ceramic crowns	IC 1 to IC 6	Demonstration	OSCE/Practical

3. Orthodontics

S. No.	Topic / Theme	Learning Outcomes	Learning Objectives	IC Codes	MIT	Assessment Tools
1.	Orthodontic Appliances	At the end of the term, the students will be able to: • Demonstrate the basic knowledge of different types of orthodontic appliances	At the end of the lecture, the students will be able to: **Knowledge** • Explain the design of a removable orthodontic appliance • Recall the indications, contra-indications, advantages and limitations of removable orthodontic appliances • Discuss the basic concepts of functional jaw orthopaedics • Explain the principles of fixed appliance therapy	IC 2	LGIS SGD	MCQs/SEQs Viva
			Skill • Practice wire bending techniques in removable orthodontic appliances • Identify indications of different orthopaedic & functional appliances	IC 1 to IC 6	Demonstrations Practical	OSCE
2.	Cleft Lip & Palate and Orthognathic Surgery	• Develop the diagnosis and treatment planning of cleft lip & palate • Demonstrate the principles of orthognathic surgery in the management of	**Knowledge** • Describe the etiological factors involved in Cleft Lip & Palate • Explain the role of an orthodontist in the diagnosis and management of cleft lip & palate	IC 2	LGIS	MCQs/SEQs Viva

		various skeletal malocclusions	• Describe the indications and various stages of orthognathic surgical treatment • Explain the treatment procedures required at different age groups in patients with cleft lip & palate • Plan the surgical treatment of the cases requiring it			
3.	Adjunctive and Multi-disciplinary orthodontic approaches	Apply the knowledge of adjunctive and multi-disciplinary orthodontics in the management of different oral health-related problems	**Knowledge** • Explain the treatment goals and principles of adjunctive orthodontics • Describe the different multi-disciplinary treatment procedures • Explain the Orthodontic-Periodontics and Orthodontics-Restorative inter-relationship	IC 2	LGIS	MCQs/SEQs Viva
			Skill • Plan treatment for the cases requiring multi-disciplinary treatment	IC 1 to IC 6	SGD	OSCE
4.	Retention and Relapse	Apply the knowledge of basic concepts of retention and relapse in orthodontics	**Knowledge** • Define retention and relapse in Orthodontics • Discuss the different causes of relapse • Describe different types of retainers along-with their indications • Correlate the different types of orthodontic problems with their retention protocol	IC 2	LGIS	MCQs/SEQs Viva

			• Plan retention protocol in different types of malocclusions			

Practical

Weeks	Topic /Theme	Learning Objectives	IC Codes	MIT	Assessment Tools
Week 1	Cast Analysis Basic wire bending exercises	• Demonstrate basic technique of performing cast analysis • Practice skills of basic wire bending in Orthodontics	IC 2 IC 4 IC 5	Demonstration	OSCE/ Practical
Week 2	Cast Analysis Basic wire bending exercises	• Demonstrate the basic technique of performing cast analysis • Practice skills of basic wire bending in Orthodontics	IC 2 IC 4 IC 5	Demonstration	OSCE/ Practical
Week 3	Mixed Dentition Analysis	• Demonstrate the basic technique of performing mixed dentition analysis	IC 1 IC 4 IC 5	Demonstration	OSCE/ Practical
Week 4	Case presentation	• Demonstrate skills of presenting orthodontic case presentation	IC 1 to IC 6	Demonstration	OSCE/ Practical
		Ward test			

4. OMFS

S. No.	Topic/ Theme	Learning Outcomes	Learning Objectives	IC Code	MITS	Assessment Tool
01	Pre-Prosthetic & Dental Implants (Pre-Prosthetic Surgery)	At the end of term, student will be able to: • Identify problem list and formulate a treatment plan for a patient acquiring dental prosthesis • Perform basic surgical pre-prosthetic procedures like Alveoloplasty, Tori removal • Order appropriate investigations and formulate treatment for a patient seeking dental implants	At the end of term, student will be able to: **KNOWLEDGE** • Enlist objectives of pre-prosthetic surgery • Describe ridge extension, augmentation and correction (osteotomies) procedures for mandible and maxilla • Describe the principles of following surgical procedures: alveloloplasty-simple, intraseptal (Dean's), tuberosity reduction, exostosis and undercuts correction, tori removal, mylohyoid ridge reduction, genial tubercle reduction, retromolar pad reduction, lateral palatal soft tissue excess removal, unsupported hypermobile tissue removal, inflammatory fibrous hyperplasia removal, labial and lingual frenectomy	IC 2	LGIS	MCQ SEQs VIVA
02	Dental Implants		**KNOWLEDGE** • Define dental implant and identify its components • Define osseointegration, list factors influencing osseointegration • Define the following terms related to dental implants: endosseous, root- form,	IC2	LGIS SGD	MCQs SEQs VIVA

			cover screw, healing abutment/gingival former, single/two stage, screw/cement retained biotypes			
			SKILL • Identify abnormalities of soft and hard tissues which interfere with denture • Construction and formulate a treatment plan	IC 1 to IC 6	Practical	OSCE
			ATTITUDE • Respect all patients • cquire informed consent from the patient	IC 1 IC 4	Demonstration	OSCE
03	Dental Implants		**KNOWLEDGE** • Describe the following considerations for implant placement: soft tissue, hard tissue and biomechanical • Describe the surgical procedure for one stage, two stage and immediate dental implant placement • Enlist complications of implant surgery and describe their management • Describe ridge augmentation and preservation, guided bone regeneration, onlay bone grafting, sinus lift and distraction osteogenesis for dental implant placement	IC 2	LGIS	MCQs SEQs VIVA
			SKILL	IC 1 IC 3	Clinical Demonstration	OSCE

			• Assess a patient in need of dental implant(s) with the help of history, clinical examination and imaging	IC 4 IC 5 IC 6		
			ATTITUDE • Respect all patients • Acquire informed consent from the patient	IC 1 IC 4	Clinical Demonstration	OSCE
04	Pain/TMJ/ Salivary gland disease (Orofacial Pain)	• Identify a patient with orofacial facial pain, diagnose the type and formulate a treatment plan • Make referral when required	**KNOWLEDGE** • Describe the pathophysiology of neuropathic pain • Classify oro-facial pain according to site and etiology • Diagnose trigeminal neuralgia and describe its management options. • Differentiate trigeminal neuralgia from pre-trigeminal neuralgia, odontalgia, post-herpetic neuralgia, neuroma, burning mouth syndrome, glossopharyngeal neuralgia and headache • Classify various types of headaches according to clinical features	IC2	LGIS	MCQs SEQs VIVA
05	(Tm joint)	• Acquire history, clinically examine & diagnose a patient with TMJ problem/pathology • Manage the patient conservatively	**KNOWLEDGE** • Evaluate a patient with TMJ disorder • Classify TMJ disorders as: myofascial, internal derangement (Wilke's), systemic arthritis conditions, chronic recurrent dislocation, ankylosis, neoplasia and infections	IC2	LGIS SGD	MCQs SEQs VIVA

		• Make referral when required				
			SKILL • Examine & evaluate a patient with TMJ disorder • Select management options for TMD and ankylosis (conservative and surgical) • Reduce manually TMJ dislocation on skull model	IC 1 to IC 6	Practical	OSCE
			ATTITUDE • Respect patients acquire informed consent	IC 1 IC 4	Demonstration	OSCE
06	(Salivary Gland)	• Examine Salivary Gland, acquire appropriate history & diagnose a patient with SG pathology • Order & interpret relevant investigations • Make referral when required	**KNOWLEDGE** • Describe pathophysiology and presentation of obstructive, retentive, infectious and neoplastic salivary gland disease • Describe various diagnostic modalities for salivary gland disorders • Describe the principles of management of the following salivary gland disorders: sialolithiasis, mucocele, ranula, infections, traumatic injuries to salivary glands, pleomorphic adenoma, Warthin's tumor, mucoepidermoid carcinoma, adenoid cystic carcinoma, adenocarcinoma	IC 2	LGIS	MCQ SEQS VIVA
CLASS TEST						

07	Dento-facial deformity & orthogna-thic surgery	• Diagnose and refer to relevant specialty for a patient with dentofacial deformity	**KNOWLEDGE** • Enlist causes of dentofacial deformities • evaluate a patient with dentofacial deformity • Order and interpret relevant investigations • Describe the pre-surgical preparation for orthognathic surgery patient • Describe the surgical treatment options (osteotomies) for the following: mandibular excess, mandibular deficiency, maxillary and mid-face deficiency, combination deformity & Facial asymmetry • Define Distraction Osteogenesis, describe the role and advantages of distraction osteogenesis in OMF region	IC2	LGIS	MCQs SEQs VIVA
08	Cleft lip & palate	• Describe etiology & incidence of Cleft Lip and Palate • Diagnose and formulate the problem list in a patient with CLP	**KNOWLEDGE** • Describe incidence and etiology of cleft lip & palate • Explain Cleft Lip and Palate (CLP) pathogenesis at embryological level • name the number of different types of rare facial clefts in addition to cleft lip and palate • Classify cleft lip and palate for communication and record keeping • Enlist the OMF problems faced by a cleft patient, from prenatal period till life long	IC2	LGIS	MCQs SEQs VIVA

			• Constitute a team for the treatment of a cleft patient • Describe the treatment of a cleft patient according to the sequence and surgical procedures • Enlist various syndromes associated with Cleft Lip and Palate (CLP) • Explain various surgical procedures for CLP repair			
10	Hopitalized patients & general anesthesia	• Follow the protocols for Major Oral & Maxillofacial Surgical procedures in a hospital setting • Discuss preparation of a patient undergoing General Anaesthesia	**KNOWLEDGE** • Describe when to hospitalize a dental patient for management • Evaluate a patient for Oral and Maxillofacial surgery under General Anaesthesia • List pre-operative management of patient for major oral surgery: investigations and consults with reference to ASA status • Describe assessment of fitness, normal, abnormal cardiac and respiratory signs, premedication, anesthetic and analgesia medication • Describe the technique of endotracheal intubation • Enlist and describe management of post GA problems	IC2	LGIS SGD	MCQs SEQs VIVA

			SKILL • Answer a referral consultation letter • Provide care for hospitalized patient • Record operative notes • Write a hospital discharge letter	IC 1 to IC6	Practical	OSCE
			ATTITUDE • Respect all patients • Acquire informed consent from patient	IC 1 IC 4	Demonstration	OSCE

PRACTICAL

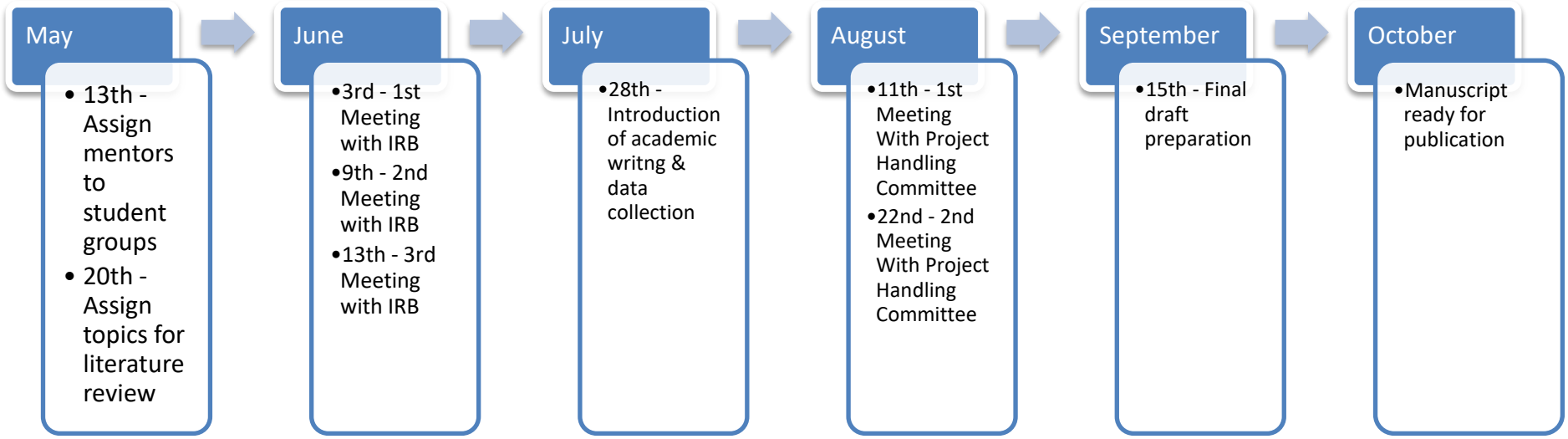
S. No.	Topic/ Theme	Learning Objective	IC Codes	MITs	Assessment Tools
01.	Basic Principles of Surgery	• Identify various suturing material types, their application, specification of suturing needle and suture • Perform various Suturing Techniques • Draw and label various surgical flaps used in minor oral surgery • Identify and use of appropriate size/number blade according to purpose and anatomical region • Handle the surgical Blade, placement and removal from BP handle	IC 1 to IC 6	Practical	OSCE
02.	Oral & Maxillofacial Trauma	• Identify various reduction & fixation techniques used in maxillofacial fracture management • Make Eye-lets with wire & wire handling Maxillo-Mandibular Fixation on Models • Practice placement of arch bar on models	IC 1 to IC 6	Practical	OSCE

03.	Examination of Oral & Maxillofacial Region	• Perform Clinical Examination of TMJ, Salivary Glands and Lymph Nodes • Identify of armamentarium for Major & Minor Surgical Procedures	IC 1 to IC 6	Practical	OSCE
04.	Student Presentations & Radiology	• Interpret Radiological findings related to exodontia: Periapical & OPG (impacted canine & 3rd molars)	IC 1 to IC 6	Practical	OSCE Student presentations
05.	Ward Test	END OF ROTATION WARD TEST	IC 1 to 6	-	-

Vertically Integrated Modules
Research Methodology

After studying research methodology in 1st & 2nd Year of BDS, students' interest groups are developed in third and final year to inculcate research culture among students. Research mentors from each year are also allocated. The mentors are available for students throughout the course and help and guide them in every step of research, from the topic selection to data collection and writing the manuscript. A timeline for different steps of research is given to them. Each year students are advised to complete & submit their research proposals by the end of October before their final term. Specific time slots for research are available for students during their academic period.

Timeline Research Methodology - Student Research Interest Group



Term III Syllabi

1. Operative Dentistry

Week	Topic	No. Of Lectures
	3rd TERM	
25th Week	Restoration of endodontically treated teeth	03
26th Week	Complex Amalgam Restorations Tooth Preparation for Indirect restorations	02 01
27th Week	Tooth Preparation for Indirect restorations CAD/CAM Tooth preparation	01 02
28th Week	Inlay and onlay Veneers	02 01
29th Week	Minimal Preparation bridges Class test	02 01
30th Week	Radiology and Radiography Non odontogenic diseases mimicking as Pulpal and periodontal diseases	02 01

31st Week	Non odontogenic diseases mimicking as Pulpal and periodontal diseases Root Resorption Dental Emergencies	01 01 01
32nd Week	Discoloration of teeth Bleaching	03
33rd Week	Medical Disability in Geriatric and pediatric patients Childhood impairment and disability	03
34th Week	Tooth surface loss	03
35th Week	Revision	01 02
36th Week	Pre annual exam	

2. Prosthodontics

WEEK 25	• Try-in of dentures • Denture insertion • Occlusal equilibration
WEEK 26	• Post insertion follow up • Single denture
	• Indirect retainers
WEEK 27	• Copy denture • Repair denture
	• Speech considerations in complete denture

WEEK 28	• Relining and Rebasing-I • Relining and Rebasing-II
	• Indirect retainers
WEEK 29	• Denture base Considerations-I • Denture base considerations-II
WEEK 30	• Removable partial denture Design-I • Removable partial denture Design-II • Removable partial denture design-III
WEEK 31	• Surveying-I • Surveying-II • Surveying-III
WEEK 32	• Introduction to Implantology • Osseointegration of implants
	• Fixed implant supported prosthesis(maxilla)
WEEK 33	• Fixed implant supported prosthesis(mandible) • Implant overdenture
	• Problems and complication of implants
WEEK 34	• Prosthetic considerations for edentulous maxillofacial prosthesis • Classification of partially edentulous mandibulectomy arches
	• Classification of partially edentulous maxillectomy arches
WEEK 35	• Types of maxillary obturators
	• Problems of obturators
WEEK 36	**Pre annual exam**

3. Orthodontics

WEEK	TOPIC	No. Of Lectures
1st Week	Removable appliances	02
2nd Week	Functional appliances	02
3rd Week	Functional appliances	02
4th Week	Headgear	01
	Facemask	01
5th Week	Chin cup	01
	Fixed appliances	01
6th Week	Fixed appliances	02
7th Week	Cleft lip and palate	02
8th Week	CLASS TEST	01
	Adjunctive & Multidisciplinary Orthodontic approaches	01
9th Week	Adjunctive & Multidisciplinary Orthodontic approaches	02

10th Week	Adjunctive & Multidisciplinary Orthodontic approaches	01
	Orthognathic surgery	01
11th Week	Orthognathic surgery	01
	Retention & relapse	01
12th Week	Retention & relapse	01
	Pre annual exam	

4. OMFS

Week	TOPIC	No. of Lectures
01	• Pre-prosthetic Surgery	02
02	• Pre-prosthetic Surgery • Dental Implants	02
03	• Dental Implants	02
04	• Oro-facial Pain	02
05	• Temporomandibular Joint	02
06	• Salivary Gland	02

07	**CLASS TEST**	
08	• Dentofacial Deformity & Orthognathic Surgery	01
09	• Dentofacial Deformity & Orthognathic Surgery	02
10	• Cleft Lip & Palate	02
11	• Hospitalized Patients & General Anesthesia	02
12	**Revision Lectures**	02

Learning Resources

1. Operative Dentistry Department

- Sturdevant's Art & Science of Operative Dentistry
- Cohan's Pathways of Pulp
- Grossman Endodontic practice
- Contemporary Fixed Prosthodontics Rosenstiel
- Paediatric Dentistry, Richard Welbury

2. Oral And Maxillofacial Surgery

1. Contemporary Oral and Maxillofacial Surgery, 7th Edition, James R. Hupp
2. Handbook of Local Anesthesia, 7th Edition, Stanley F.Malamed
3. Fractures of the Facial Skeleton, 2nd Edition, Peter Banks
4. Scully's Medical Problems in Dentistry, 7th Edition, Crispian Scully
5. Internet Sources

   https://www.sciencedirect.com/ https://emedicine.medscape.com/

3. Orthodontics

- Contemporary Orthodontics William R. Proffit
- An Introduction to Orthodontics Laura Mitchell

4. Prosthodontics

- Prosthodontic treatment for edentulous patients, Thirteen Edition by Zarb and Hobkirk
- McCracken's Removable Partial Prosthodontics, Thirteen Edition
- Contemporary Fixed Prosthodontics Rosenstiel