

Jinnah Medical and Dental College

Oral Biology

**Departmental Guide Book for First Year BDS Oral
Biology Students**



Table of Contents

Introduction	3
Oral Biology	3
Vision	3
Mission Statement	3
Department Hierarchy	4
Department to Student Communication	4
Learning Outcomes	5
For A First Year Students	5
Strategies for Learning and Teaching	6
Assessment Tools to Evaluate Student Learning	7
Course Content Taught In First Year	9
Oral Biology Practical	23
Rules and Regulations for Students	27
Dress Code Policy For Students Working In The Lab	28
Tutorial Topics	30
Departmental Resource Books	31

Introduction

Oral biology:

Oral biology is a graduate program in basic sciences, integrated with the curriculum of first professional year bds. It comprises of oral histology and tooth morphology. The department of oral biology focuses on the scientific study of the growth, development, diseases, healing properties, and neurological components of the oral cavity, related tissues and organs, and associated craniofacial areas. Consequently, the department of oral biology has two fundamental missions within the school of dental medicine: the first is to educate dental students in these disciplines and prepare them for clinical application. The second is to bridge the gap between the basic sciences and the clinical practice and research in dentistry. The department faculty interacts with members of all clinical departments and promotes research in their respective areas with the aim of understanding and improving all aspects of oral and craniofacial health and treatment. Use of innovative teaching strategies such as lectures on multimedia, interactive sessions and educational videos enables us to maintain a comprehensive learning environment.

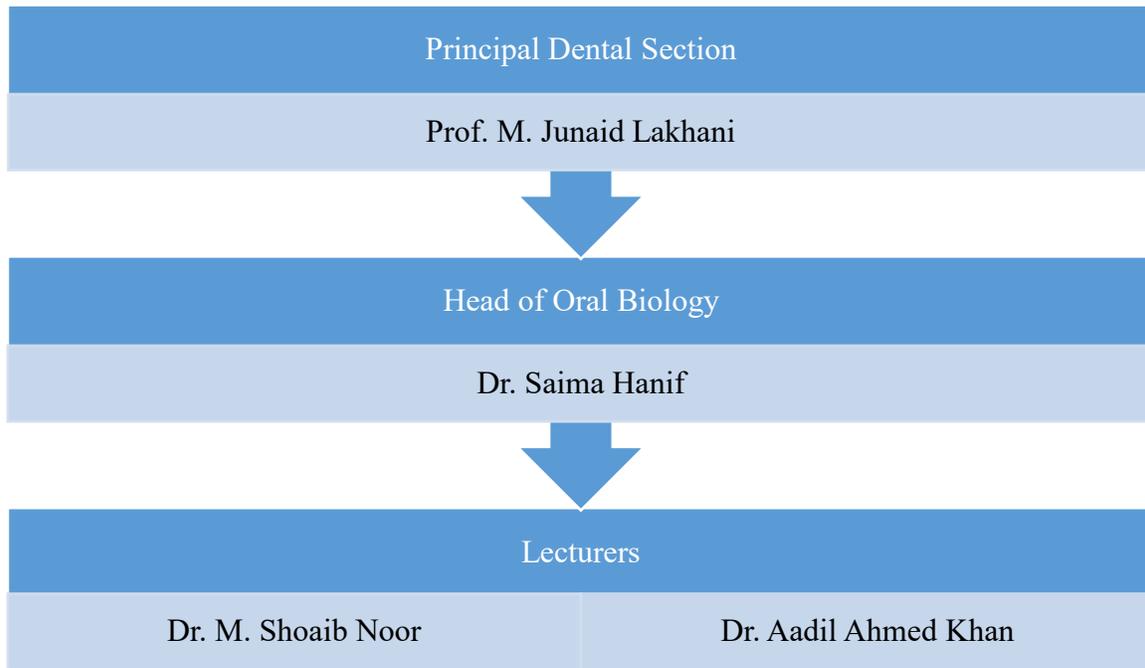
Vision:

To set local and global standards for quality patient outcomes – creating a culture of excellence to promote a transformative experience for the 21st century clinicians, educators and researchers to benefit all humanity.

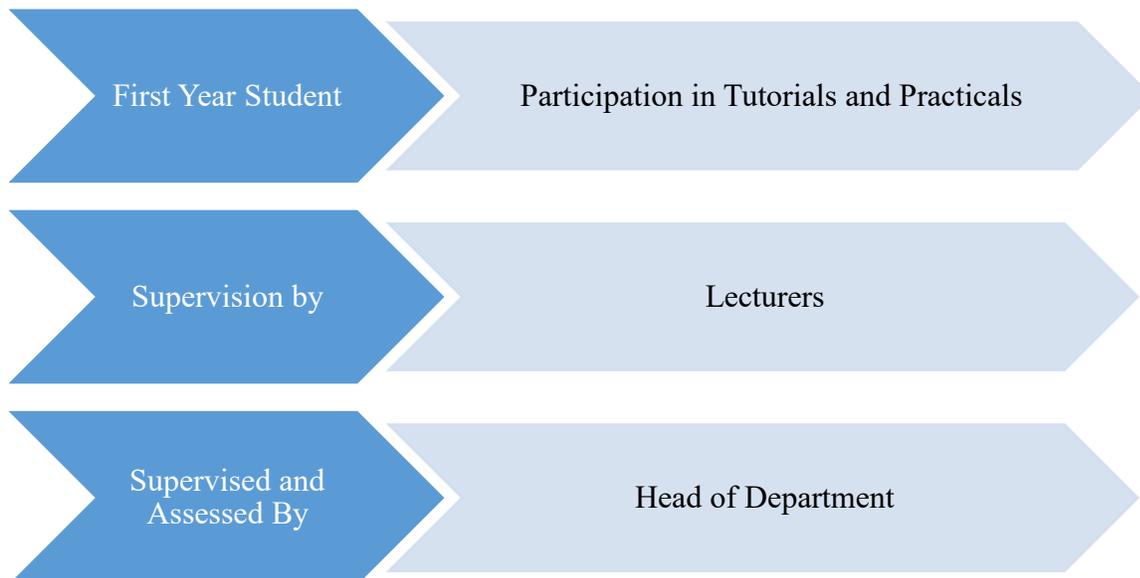
Mission statements:

We are committed to develop well-rounded academicians, thinkers, clinicians and researchers by strengthening a global view, broadening intellectual foundation and teaching effective communication. It is our aspiration to cultivate creative and critical thinking skills for problem solving, sensitive to cultural and ethical values and responsibilities. Our graduates will be role models and leaders for society.

Department Hierarchy:



Department to Student Communication:



Learning outcomes:

For a first year student:

By the end of the academic year and lectures in oral biology, the student should be able to:

1. Obtain detailed knowledge of the different structures of tooth.
2. Describe sequence of developmental changes occurring in maxillary and mandibular processes in areas of future dental arches, formation of tooth and its supporting tissues.
3. Practice various tooth diagrams according to given dimensions.
4. Describe oral structures
5. Define the terms and related land marks of oral anatomy and tooth morphology
6. Identify on a histological picture/slide of oral structures; also draw and label the various tissues of tooth
7. Distinguish between different dental and vestibular tissues on basis of development, location, histology, function, and fate
8. Enlist chemical composition of enamel, dentin, cementum and bone including percentage of each content
9. Classify dentition and time frame and significance of dentition periods (primary, mixed and permanent)
10. Describe dental formulae, sequence of eruption and age

Strategies for Learning and Teaching:

1. Interactive Lectures (Teaching Large Group):

The interactive lectures strategy is adapted, it comprises of lecture having duration of 50 minutes three times a week for final year and twice a week for third year. To keep a check of assessment of student learning through lectures following techniques are utilized;

- a. Quizzes.
- b. Interactive sessions.
- c. Student engagement to stimulate critical thinking.
- d. Activities for better understanding of topics.

2. Practical learning:

In practical sessions students observe histological slides under microscope or on multimedia for better understanding of the subject. They are also required to maintain practical manuals in which they draw and label histological diagrams and different aspects/views of teeth for better understanding.

3. Self-directed learning:

To complement the lectures, students are provided with videos, relatable book chapters and materials for better understanding. Along with these assignments, presentations and group activities are conducted.

4. E-learning:

In the current times of pandemic covid-19, distance learning has been incorporated in the strategies of learning and teaching.

In these challenging times an easy access has been provided to the students through e-portal. Each student has the access to the portal through their individual ids, on which they can go through the recorded lectures and material whenever they want.

Assessment tools to evaluate student learning

1. In-class assessment:

- a. Attendance.
- b. Quizzes.
- c. Presentations.
- d. Assignments.

2. Practical Assessment:

A test is conducted in mid and end of the practical rotation to assess the learning of students. It is to ensure that the students develop the required proficiencies under a supervised environment.

3. Summative examination assessment:

a. Midterm examinations:

These are conducted in the mid of the academic year. It comprises of two components;

Component	Marks
Bcqs	100
OSPE	50
Viva	50
Total	200

b. Pre-professional examinations:

These are conducted in the end of the academic year before the final professional examination. It comprises of two components;

Component	Marks
Bcqs	100
OSPE	50
Viva	50
Total	200

c. Professional examinations:

At the end of the academic year, JSMU conducts this exit examination that will promote the students to the second year.

d. Internal evaluation:

Component	Marks Distribution (%)
Assignment/Class Test	25
Mid-Term	35
Pre-Prof	35
Extra Efforts/ Journal	5
Total	100%

Course Content Taught In First Year

Introduction To Structures Of Oral Tissues

S.No.	Topic	Learning Objectives By The End Of First Year Bds, The Student Should Be Able To	Mode Of Teaching	Assessment Tools The Students Will Be Assessed During Class Tests, Mid-Rotation And End-Of Rotation Tests; Mid-Term And Final Examination Through:
1.	Introduction To Oral Biology & Structure Of Tooth	<ol style="list-style-type: none"> 1. Relate The Application Of Subject Of Oral Biology With The Clinical Practice 2. List Tissues Of The Tooth 3. Distinguish Between Dental Tissues 4. Locate Dental Hard Tissues Correctly 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Practical (Model Demonstration) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
2.	Introduction To The Supporting Structure Of Tooth	<ol style="list-style-type: none"> 1. Discuss Supporting Structures Of Tooth 2. Identify The Supporting Structures Of Tooth 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Practical (Model Demonstration) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
3.	Age Changes & Clinical Relevance Of The Structure Of Tooth	<ol style="list-style-type: none"> 1. Discuss The Clinical Relevance & Age Changes Of Enamel & Dentine 2. Discuss The Clinical Relevance & Age Changes Of Cementum, Periodontal Ligament 	<ol style="list-style-type: none"> 1. Lecture 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

General Embryology

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Germ Cell Formation And Fertilization, Prenatal Development, Induction, Competence And Differentiation	<ol style="list-style-type: none"> 1. Discuss The Concept Of Germ & Formation & Fertilization, Prenatal Development 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs

2.	Formation Of Three Layered Embryo, Formation Of The Neural Tube And Fate Of The Germ Layers	1. Discuss The Concept Of Formation Of Three Layered Embryo & Neural Tube	1. Lecture 2. Tutorial	1. Bcqs
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Embryology of Head Face and Oral Cavity

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Neural Crest Cells And Head Formation, Brachial (Pharyngeal) Arches And The Primitive Mouth.	1. Explain The Formation Of Head 2. List The Derivatives Of Pharyngeal Arches And Pouches	1. Lecture 2. Tutorial	1. Bcqs
2.	Formation Of The Face, Formation Of The Secondary Palate.	1. Explain The Formation Of Face & Palate	1. Lecture 2. Tutorial	1. Bcqs
3.	Formation Of Tongue.	1. Discuss The Formation Of Tongue	1. Lecture 2. Tutorial	1. Bcqs
4.	Development Of The Skull	1. Discuss The Development Of Skull 2. Differentiate Between Intra Membranous & Cartilaginous Development	1. Lecture 2. Tutorial	1. Bcqs
5.	Development Of The Mandible And Maxilla	1. Discuss The Development Of Mandible & Maxilla 2. Differentiate Between Development Of Mandible & Maxilla	1. Lecture 2. Tutorial	1. Bcqs
6.	Development Of The Temporomandibular Joint	1. Discuss The Development Of Temporomandibular Joint 2. Locate The Anatomical Landmarks Associated With Tmj	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe
7.	Congenital Defects	1. List Different Type Of Teratogens 2. Explain Various Types Of Cleft Lip & Palate	1. Lecture 2. Tutorial	1. Bcqs

Cytoskeleton, Cell Junctions, Fibroblasts and Extracellular Matrix

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Cytoskeleton, Intercellular Junctions, Epithelium-Connective Tissue Interface.	<ol style="list-style-type: none"> 1. Define The Cytoskeleton 2. Differentiate Between Various Filament Types Within Cytoskeleton 3. Distinguish Between Various Intercellular Junctions 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	1. Bcqs
2.	Fibroblasts, Secretory Products Of Fibroblasts.	<ol style="list-style-type: none"> 1. Discuss The Function & Secretory Products Of Fibroblasts 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	1. Bcqs

Development Of The Tooth And Its Supporting Tissues

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Stages Of Tooth Development	<ol style="list-style-type: none"> 1. Discuss The Formation Of Primary Epithelial Band 2. Describe The Formation Of Dental & Vestibular Lamina 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Opse
2.	Stages Of Tooth Development & Tooth Type Determination	<ol style="list-style-type: none"> 1. Differentiate Various Stages Of Tooth Development 2. Discuss The Theories Of Tooth Type Determination 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
3.	Hard Tissue Formation & Root Formation	<ol style="list-style-type: none"> 1. Explain The Hard Tissue Formation 2. Discuss The Formation Of Root 3. Distinguish Between Development Of Single Rooted & Multi Rooted Tooth 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

Bone

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Gross Bone Histology & Bone Cells	<ol style="list-style-type: none"> 1. State The Composition Of Bone 2. Describe The Histology Of Bone 3. Explain The Structure & Function Of Bone Cells 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
2.	Development Of Bone	<ol style="list-style-type: none"> 1. Differentiate Between Endochondral & Intramembranous Bone Formation 2. Interpret The Histology Of Endochondral & Intramembranous Bone 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

Enamel: Composition, Formation and Structure

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Introduction To Enamel	<ol style="list-style-type: none"> 1. Discuss The Composition & Physical Properties Of Enamel 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
2.	Stages Of Amelogenesis & Mineralization	<ol style="list-style-type: none"> 1. Discuss The Stages Of Amelogenesis 2. Differentiate Among The Stages Of Amelogenesis 3. Explain Various Secretory Products During Amelogenesis And Mineralization 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
3.	Structural And Organizational Features Of Enamel	<ol style="list-style-type: none"> 1. Identify Histological Features Of Enamel 2. Discuss Histological Features Of Enamel 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

Dentine-Pulp Complex

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Introductions, Types, Dentine Formation	<ol style="list-style-type: none"> 1. Describe The Basic Composition Of Dentine 2. Describe The Formation Of Dentine 3. Report The Pattern Of Dentine Formation 4. Identify The Types Of Dentine 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
2.	Histology Of Dentine	<ol style="list-style-type: none"> 1. Identify & Explain Various Histological Landmarks Present In The Dentine 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Opse
3.	Pulp & Cell Of Dental Pulp	<ol style="list-style-type: none"> 1. Identify The Zones Within The Dental Pulp 2. Explain The Zones Within The Dental Pulp 3. Explain The Cells That Are Present The Dental Pulp 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
4.	Theories Of Dentine Sensitivity	<ol style="list-style-type: none"> 1. Explain The Theories Of Dentine Sensitivity 2. Critique The Theories Of Dentine Sensitivity 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

Periodontium

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Introduction To Periodontium & Biochemical Composition Of Cementum	<ol style="list-style-type: none"> 1. Define The Periodontium 2. List The Components Of Periodontium 3. Explain The Biochemical Composition Of Cementum 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
2.	Cementum Formation & Types Of Cementum	<ol style="list-style-type: none"> 1. Explain The Formation Of Cementum 2. Classify The Cementum Into Different Types 3. Explain The Factors That Regulates Cementum Formation 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

3.	Alveolar Bone	<ol style="list-style-type: none"> 1. Explain The Structure Of Alveolar Bone 2. Identify The Histological Features Within The Alveolar Bone 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
4.	Periodontal Ligaments	<ol style="list-style-type: none"> 1. Classify The Periodontal Ligaments 2. Explain The Cells Within The Periodontal Ligaments Space 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

Physiologic Tooth Movement: Eruption And Shedding

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Preruptive Tooth Movement & Eruptive Tooth Movement	<ol style="list-style-type: none"> 1. Describe Pre-Eruptive Tooth Movement 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs
2.	Posteruptive Tooth Movement & Abnormal Tooth Movement	<ol style="list-style-type: none"> 1. Describe Post-Eruptive & Abnormal Tooth Movement With Examples 2. Discuss The Orthodontic Tooth Movement 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
3.	Shedding Of Teeth	<ol style="list-style-type: none"> 1. Explain The Shedding Of Teeth & Pattern Of Shedding 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

Salivary Glands

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Anatomy, Development & Functions Of Salivary Glands	<ol style="list-style-type: none"> 1. Explain The Anatomy Of Salivary Glands 2. Explain The Composition Of Saliva 3. Relate The Composition Of Saliva With Functions 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
2.	Histology Of The Major & Minor Salivary Glands	<ol style="list-style-type: none"> 1. Classify Salivary Glands 2. Differentiate Between Secretory Cells Of Salivary Glands 3. Explain The Mechanism & Secretion Of Saliva 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical (Histological Slide) 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

		4. Identify The Histological Features Of Salivary Glands		
3.	Clinical Consideration	1. Describe The Age Changes & Diseases Associated With The Salivary Glands	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe

Oral Mucosa

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Definition Boundaries & Function Of The Oral Mucosa	1. Define Oral Mucosa 2. Define The Boundaries Of Oral Cavity 3. Explain The Structure Of Oral Mucosa 4. Relate The Structure With The Functions Of Oral Mucosa	1. Lecture 2. Tutorial 3. Practical (Histological Slide)	1. Bcqs 2. Ospe
2.	Structural Variation Of Oral Mucosa, Oral Epithelium & Lamina Propria	1. Classify Different Types Of Oral Mucosa 2. Differentiate Histological Between Different Types 3. Explain The Cells Within The Epithelium & Connective Tissue	1. Lecture 2. Tutorial 3. Practical (Histological Slide)	1. Bcqs 2. Ospe
3.	Clinical Variations & Age Changes In Oral Mucosa	1. Describe The Clinical Variations & Age Changes Within The Oral Mucosa	1. Lectures	2. Bcqs 3. Ospe

Temporomandibular Joint

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Classification Of Joints Anatomy & Histology Of Temporomandibular Joint	1. Explain The Classification Of Joint With Examples 2. Discuss The Anatomy & Histology Of Temporomandibular Joint	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe
2.	Muscles Of Mastication & Biomechanics, Innervations & Blood	1. Explain The Muscle Associated With Temporomandibular Joint 2. Relate The Muscle	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe

	Supply To Tmj	Attachments With Movement Of Joint 3. Describe The Innervations & Blood Supply Of Tmj		
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Facial Growth and Development

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Facial Types & Profiles	1. Discuss Various Facial Types & Profiles 2. Relate The Facial Profiles With Gender & Age 3. Discuss The Basic Concept Of Facial Growth	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe

Repair and Regeneration of Oral Tissues

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Wound Healing In Oral Mucosa	1. Discuss Various Faces Of Bone Healing In Oral Mucosa	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe
2.	Repair Of Tooth & Supporting Structures 1	1. Explain The Bone Healing Act Dentinogingival Junction 2. Describe The Mechanism Of Enamel Repair	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe
3.	Repair Of Tooth & Supporting Structures 2	1. Know The Repair Of Dentine Pulp Complex 2. Explain The Repair Of Periodontium	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe

Introduction to Dental Anatomy

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Introduction To Dental Anatomy	1. Describe The Clinical Application & Importance Of Oral Biology/Dental Anatomy 2. Explain The Primary, Transitional Permanent Dentition Periods 3. Identify The Primary,	1. Lectures 2. Tutorials 3. Practical (Model Demonstration)	1. Bcqs 2. Ospe

		Transitional Permanent Dentition Periods 4. Discuss Tooth Rotation Systems 5. Apply The Knowledge Of Tooth Rotation System 6. Identify Surfaces & Landmarks Associated With Human Teeth 7. Identify Surfaces & Landmarks Associated With Human Teeth		
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Development and Eruption of the Teeth

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Development And Eruption/Emergence Of The Primary & Permanent Teeth	1. Describe The Pattern & Age Of Eruption Of Primary 2. Describe The Pattern & Age Of Eruption Of Permanent Teeth 3. Estimate The Dental Age Of As Individual	1. Lecture 2. Tutorial 3. Practical	1. Bcqs 2. Ospe

The Primary (Deciduous) Teeth

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Maxillary Central Incisor & Maxillary Lateral Incisor	1. Identify The Maxillary Central & Lateral Incisor 2. Explain Briefly The Landmarks Associated With These Teeth 3. Identify The Basic Endodontic Anatomy Of These Teeth	1. Lecture 2. Tutorial 3. Practical	1. Bcqs 2. Ospe
2.	Mandibular Central Incisor & Mandibular Lateral Incisor	1. Identify The Mandibular Central & Lateral Incisor 2. Explain Briefly The Landmarks Associated With These Teeth 3. Recognize The Basic Endodontic Anatomy Of	1. Lecture 2. Tutorial 3. Practical	1. Bcqs 2. Ospe

		These Teeth		
3.	Maxillary Canine & Mandibular Canine	<ol style="list-style-type: none"> 1. Identify The Maxillary & Mandibular Canine 2. Explain Briefly The Landmarks Associated With These Teeth 3. Recognize The Basic Endodontic Anatomy Of These Teeth 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
4.	Maxillary First Molar & Maxillary Second Molar	<ol style="list-style-type: none"> 1. Identify The Maxillary First Molar & Maxillary Second Molar 2. Explain Briefly The Landmarks Associated With These Teeth 3. Identify The Basic Endodontic Anatomy Of These Teeth 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
5.	Mandibular First Molar & Mandibular Second Molar	<ol style="list-style-type: none"> 1. Identify The Mandibular First Molar & Mandibular Second Molar 2. Explain Briefly The Landmarks Associated With These Teeth 3. Recognize The Basic Endodontic Of These Teeth 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

Forensics, Comparative Anatomy, Geometries and Form and Function

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Introduction & Application Forensic Dentistry	<ol style="list-style-type: none"> 1. Define Forensic Dentistry 2. Describe Various Methods For Identification Of Unidentified Individuals 3. Recognize The Application Of Forensic Dentistry 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe

Orofacial Complex: Form and Function

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Physiological Form Of The Teeth And Periodontium	1. Memorize The Physiological Form Of The Teeth And Periodontium	1. Lecture 2. Tutorial	1. Bcqs 2. Ospe
2.	Contact Areas, Interproximal Spaces & Embrasures	1. Explain Contact Areas, Interproximal Spaces & Embrasures 2. Identify Contact Areas, Interproximal Spaces & Embrasures	1. Lecture 2. Practical	1. Bcqs 2. Ospe

The Permanent Maxillary Teeth:

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Maxillary Central Incisor	1. Identify Maxillary Central Incisor 2. Memorize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy	1. Lecture 2. Practical	1. Bcqs 2. Ospe
2.	Maxillary Lateral Incisor	1. Identify Maxillary Lateral Incisor 2. Differentiate Between Maxillary Central & Lateral Incisors 3. Recognize The Landmarks Associated With This Tooth 4. Know The Basic Endodontic Anatomy	1. Lecture 2. Practical	1. Bcqs 2. Ospe
3.	Maxillary Canine	1. Identify Maxillary Canine 2. Recognize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy	1. Lecture 2. Practical	1. Bcqs 2. Ospe
4.	Maxillary First Premolar	1. Identify Maxillary First Premolar 2. Recognize The Landmarks Associated	1. Lecture 2. Practical	1. Bcqs 2. Ospe

		With This Tooth 3. Recognize The Basic Endodontic Anatomy		
5.	Maxillary Second Premolar	1. Identify Maxillary Second Premolar 2. Differentiate Between Maxillary First & Second Premolar 3. Recognize The Landmarks Associated With This Tooth 4. Recognize The Basic Endodontic Anatomy	1. Lecture 2. Practical	1. Bcqs 2. Ospe
6.	Maxillary First Molar	1. Identify Maxillary First Molar 2. Recognize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy	1. Lecture 2. Practical	1. Bcqs 2. Ospe
7.	Maxillary Second Molar	1. Identify Maxillary Second Molar 2. Recognize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy	1. Lecture 2. Practical	1. Bcqs 2. Ospe
8.	Maxillary Third Molar	1. Identify Maxillary Third Molar 2. Recognize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy	1. Lecture 2. Practical	1. Bcqs 2. Ospe

The Permanent Mandibular Teeth

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Mandibular Central Incisor	1. Identify Mandibular Central Incisor 2. Recognize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy	1. Lecture 2. Practical	1. Bcqs 2. Ospe

2.	Mandibular Lateral Incisor	<ol style="list-style-type: none"> 1. Identify Mandibular Lateral Incisor 2. Differentiate Between Mandibular Central & Lateral Incisors 3. Recognize The Landmarks Associated With This Tooth 4. Recognize The Basic Endodontic Anatomy 	<ol style="list-style-type: none"> 1. Lecture 2. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
3.	Mandibular Canine	<ol style="list-style-type: none"> 1. Identify Mandibular Canine 2. Differentiate Between Maxillary Canine & Mandibular Canine 3. Recognize The Landmarks Associated With This Tooth 4. Recognize The Basic Endodontic Anatomy 	<ol style="list-style-type: none"> 1. Lecture 2. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
4.	Mandibular First Premolar	<ol style="list-style-type: none"> 1. Identify Mandibular First Premolar 2. Recognize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy 	<ol style="list-style-type: none"> 1. Lecture 2. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
5.	Mandibular Second Premolar	<ol style="list-style-type: none"> 1. Identify Mandibular Second Premolar 2. Differentiate Between Mandibular First & Second Premolar 3. Recognize The Landmarks Associated With This Tooth 4. Recognize The Basic Endodontic Anatomy 	<ol style="list-style-type: none"> 1. Lecture 2. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
6.	Mandibular First Molar	<ol style="list-style-type: none"> 1. Identify Mandibular First Molar 2. Recognize The Landmarks Associated With This Tooth 3. Know The Basic Endodontic Anatomy 	<ol style="list-style-type: none"> 1. Lecture 2. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Ospe
7.	Mandibular Second Molar	<ol style="list-style-type: none"> 1. Identify Mandibular Second Molar 	<ol style="list-style-type: none"> 1. Lecture 2. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Osce

		<ol style="list-style-type: none"> 2. Recognize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy 		
8.	Mandibular Third Molar	<ol style="list-style-type: none"> 1. Identify Mandibular Third Molar 2. Recognize The Landmarks Associated With This Tooth 3. Recognize The Basic Endodontic Anatomy 	<ol style="list-style-type: none"> 1. Lecture 2. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Osce

Dento-Osseous Structures, Blood Vessels and Nerves

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Structure Of Maxilla & Mandible	<ol style="list-style-type: none"> 1. Recognize The Gross Anatomy Of Maxillary Bone 2. Know The Gross Anatomy Of Mandible 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs 2. Osce
2.	Arterial Supply & Nerve Supply To The Jaws And Teeth	<ol style="list-style-type: none"> 1. Memorize Arterial Supply & Nerve Supply To The Jaws And Teeth 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 	<ol style="list-style-type: none"> 1. Bcqs 2. Osce

Occlusion

S.No.	Topic	Learning Objectives	Mode Of Teaching	Assessment Tools
1.	Basic Of The Primary Occlusion	<ol style="list-style-type: none"> 1. Identify The Basic Concepts Of Occlusion 2. Explain The Details Of Primary Occlusion 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Osce
2.	Basics Of The Permanent Occlusion	<ol style="list-style-type: none"> 1. Explain The Details Of Occlusion 	<ol style="list-style-type: none"> 1. Lecture 2. Tutorial 3. Practical 	<ol style="list-style-type: none"> 1. Bcqs 2. Osce

Oral Biology Practical

S. No.	Practical Topics By The End Of The Clinical Rotation The Final Year Bds Student Should Be Able To Identify The Following:	Teaching Methodology	Assessment Tools
1.	Model Demonstration Of Structure Of Tooth And Its Supporting Structure	<ul style="list-style-type: none"> • Model Demonstration • Identification Of Histological Slide • Teaching On Phantom Teeth • Teaching On Extracted Teeth And Individual Tooth Models • Diagrams Of Histological Slides And Tooth Morphology Plotted On Graph Papers Done Under Supervision 	<ul style="list-style-type: none"> • Ospe • Viva • Direct Observation Of Skills • Plotting Of Graphs Of Individual Teeth According To Given Dimensions <p>Will Be Assessed During:</p> <ul style="list-style-type: none"> • Weekly Supervision • Mid Term • End-Of Term (Pre- Prof)
2.	Identification Of Different Stages Of Tooth Development, Tooth Type Determination And Root Formation Through Histological Slides		
3.	Revision Of Tooth Numbering System And Charting		
4.	Identification Of Gross Bone Histology, Bone Cells & Development Of Bone		
5.	Recognize The Structural And Organizational Features Of Enamel		
6.	Duplicate Types Of Dentin, Histology Of Dentin, Pulp & Cell Of Dental Pulp		
7.	Identification Of Periodontium, Types Of Cementum, Alveolar Bone And Periodontal Ligament		
8.	Recognize The Anatomy & Histology Of Salivary Glands		
9.	Distinguish The Structural Variation Of Oral Mucosa, Oral Epithelium & Lamina Propria		
10.	Demonstration Of Landmarks Associated With Dental Anatomy		
11.	Practice Of Eruption Sequence In Primary & Permanent Teeth		
12.	Illustration Of All Permanent Teeth According To The Given Dimensions		
13.	Description Of Primary & Permanent Occlusion		

Oral Biology

One Week Plan of Practical Rotation in Detail (Along With the Duration and Timings)

Orientation Session:

- Introduction To Department
- Introduction To Demonstrators/Lecturers
- Effective Communication
- Code Of Conduct
 - Lab Timings (Punctuality)
 - Dress Code
 - Lab Coat
 - Tied-Up Hair
 - Covered Shoes Etc.
- Hand Wash Technique
- Briefing About :
 - Microscopes
 - Instruments,
 - Models
 - Journal Maintenance
- Quota Requirements

First Year Practicals

Twenty-Nine Weeks

Week No. 1

Day 1:

2:00 Pm To 2:30 Pm (Orientation)

2:30 Pm To 3:00 Pm (Model Demonstration)

3:00 Pm To 03:30 Pm (Illustration In Journals)

Table 1-A

Student s	Demonstrator s	2:00 Pm To 2:30 Pm	2:30 Pm To 3:00 Pm	3:00 Pm To 3:30 Pm
1	D-1	Orientation	Model Demonstration	Illustration In Journals
2	D-1	Orientation	Model Demonstration	Illustration In Journals
3	D-1	Orientation	Model Demonstration	Illustration In Journals
4	D-1	Orientation	Model Demonstration	Illustration In Journals
5	D-1	Orientation	Model Demonstration	Illustration In Journals
6	D-1	Orientation	Model Demonstration	Illustration In Journals
7	D-1	Orientation	Model Demonstration	Illustration In Journals
8	D-1	Orientation	Model Demonstration	Illustration In Journals
9	D-1	Orientation	Model Demonstration	Illustration In Journals
10	D-1	Orientation	Model Demonstration	Illustration In Journals
11	D-2	Model Demonstration	Illustration In Journals	Orientation
12	D-2	Model Demonstration	Illustration In Journals	Orientation
13	D-2	Model Demonstration	Illustration In Journals	Orientation
14	D-2	Model Demonstration	Illustration In Journals	Orientation
15	D-2	Model Demonstration	Illustration In Journals	Orientation
16	D-2	Model Demonstration	Illustration In	Orientation

			Journals	
17	D-2	Model Demonstration	Illustration In Journals	Orientation
18	D-2	Model Demonstration	Illustration In Journals	Orientation
19	D-2	Model Demonstration	Illustration In Journals	Orientation
20	D-2	Model Demonstration	Illustration In Journals	Orientation

Rules and Regulations for Students

Lab Timings:

Punctuality and regularity are mandatory (as per time table)

Timings need to be followed strictly.

Attendance:

- Attendance will be marked any time during the day
- Leaving the department during lab timings, without prior notification will result in being marked absent.

Discipline:

- Maintaining discipline and professional attitude with effective communication is a MUST for all.
- Eating and drinking in the lab is not allowed.
- Maintain an environment of respect for all.

Clinical attire:

- Please review **dress code policy for students**.
- Please follow infection control protocol.
- Use of PPE including safety eye wear and mask is mandatory.

Log book:

- All students are required to maintain a record/ log of procedures in their log book and get it signed by the supervising demonstrator and HOD, on a regular basis.

Dress Code Policy For Students Working In The Lab

The dress code policy has been developed to maintain and promote high standards of personal appearance, hygiene, professionalism, and safety in the work place. The professional image of JMDC will be upheld by all the students through their dress and attire, which should be consonant with the national cultural sensitivities. It is important to ensure that the institute's image is projected favorably. Dress and appearance should not be offensive to fellow students, faculty members, visitors, patients, attendants or co-workers.

It is the responsibility of all students to adhere to the institution policy (as well as department's policy) and comply with the following defined rules of conduct.

- All students are required to be clean, well-groomed and dressed appropriately for the job at all times. Female students are required to dress in well-tailored and subtly colored clothing which portrays an image of modesty, respectability, decorum and efficiency.
- Male students are required to portray a professional image in shalwar kameez or dress shirt and trousers
- All students must wear (MANDATORY) clean, white, neat lab-coats while in the Lab.
- Long hair must be tied at the back, neatly into a bun or braid.
- All students must be neat and clean whenever they report to work. As an example, male students should keep shirts buttoned and tucked neatly into pants.
- Students should avoid extremes in hairstyles, cosmetics and jewelry. Reasonable jewelry is permitted; excessive visible piercings and loud make-up are not permitted.

- Casual sportswear such as blue jeans, shorts, sweat suits, warm-up suits, t-shirts (with or without writing on them), and sundress - should NOT be worn in the lab.
- Foot wear should be clean, safe and appropriate for the lab.
- No artificial nails, overlays, long nails or chipped nail polish in department areas.

Tutorial Topics

Introduction Of Dentistry
Introduction Of Tooth Morphology
Anatomic And Physiologic Considerations Of Form And Function
Introduction Of Oral Anatomy
Anatomy Of Teeth
Development Of Face
General Eruption Pattern
Quiz On General Eruption Pattern
Geometric Shapes & Occlusal Curves
Structure Of Oral Tissues
Central Incisors
General Embryology
Lateral Incisors
Canines
Embryology Of Head, Face & Oral Cavity
Quiz On Morphology Of Anterior Teeth
Cytoskeleton, Cell Junctions, Fibroblast
Maxillary Premolars
Development Of Tooth
Mandibular Premolars
Bone
Maxillary Molars
Enamel
Mandibular Molars
Dentin- Pulp Complex
Mandibular Molars
Periodontium
Deciduous Dentition
Quiz On Physiologic Tooth Movement

Departmental Resource Books

S.No	Name	Author	Edition
<i>Oral Histology</i>			
1.	Oral Anatomy, Histology and Embryology	Berkovitz	5th
2.	Tencate's Oral Histology	Antonio Nanci	9th
<i>Tooth Morphology</i>			
1.	Wheeler's Dental Anatomy, Physiology And Occlusion	Stanley Nelson	10 th
2.	Concise Dental Anatomy And Morphology	James L. Fuller Gerald E. Denehy Thomas M. Schulein	4th