Under-Graduate Curriculum

Dental Anatomy and Dental Histology

Course Overview

Dental Anatomy and Dental Histology is a fundamental subject in the dental curriculum that introduces students to the structure, morphology, development, and microscopic anatomy of teeth and associated oral tissues. The subject builds the foundation for clinical dentistry and helps in understanding the form and function of teeth, tooth development, and tissue histology.

Duration

Academic Year: 1st Year BDS

Total Hours:

- Theory: 105 Hours
- Practical: 200 Hours

Course Objectives

- To understand the morphology of deciduous and permanent teeth.
- To comprehend the development and eruption of teeth.
- To identify histological features of oral and dental tissues.
- To gain practical skills in tooth carving and slide identification.

Syllabus Content

1. Introduction to Dental Anatomy and Histology

2. Development of Teeth

- Stages of tooth development
- Histophysiology of tooth formation

3. Anatomy of Human Dentition

- Primary and permanent teeth
- Chronology, eruption, and shedding of teeth
- Morphology of individual teeth

4. Occlusion

- Concepts and development of occlusion
- Types of occlusion and alignment of teeth

5. Tooth Carving

- Carving of all permanent teeth in wax blocks

6. Oral Histology

- Histology of enamel, dentin, cementum, and pulp
- Periodontium: periodontal ligament, alveolar bone, and gingiva
- Oral mucosa: types, structure, and function

7. Salivary Glands

- Histology and functions of major and minor salivary glands

8. Tooth Eruption and Shedding

- Mechanism and theories of eruption
- Exfoliation of primary teeth

9. Maxillofacial Growth and Development

- Prenatal and postnatal development of facial structures

10. Temporomandibular Joint (TMJ)

- Structure and function

11. Histological Techniques

- Tissue processing and staining
- Slide preparation and identification

Teaching Methodology

- Lectures with audiovisual aids
- Practical sessions on tooth carving
- Microscopic study of histological slides
- Interactive discussions and demonstrations

Assessment

- **Internal Assessment**: Tests, assignments, practical evaluation
- **University Examination**:
  - Theory Paper (100 marks)
  - Practical Exam (100 marks)
  - Viva Voce and Record Evaluation

Recommended Textbooks

- Wheeler’s Dental Anatomy, Physiology and Occlusion
- Orban’s Oral Histology and Embryology
- Ten Cate’s Oral Histology
- Nallaswamy – Textbook of Dental Anatomy and Oral Physiology

Oral Pathology and Microbiology

Course Overview

Oral Pathology and Oral Microbiology is a vital subject in the dental curriculum that bridges basic medical sciences with clinical dental practice. It focuses on the study of diseases affecting the oral and maxillofacial region, their causes, mechanisms, and microscopic features.

Duration

Academic Year: 3rd Year BDS

Total Hours:

- Theory: 115 Hours
- Practical/Clinical: 200 Hours

Course Objectives

- To identify and understand pathological changes in oral tissues.
- To study the microbiological and immunological basis of oral diseases.
- To develop diagnostic skills through microscopic examination of tissues.
- To gain knowledge about forensic aspects related to dentistry.

Syllabus Content

1. Developmental Disturbances

- Teeth: Number, size, shape, structure, and eruption
- Oral and maxillofacial structures: Lips, palate, tongue, jaws

2. Dental Caries

- Etiology and microbiology
- Pathogenesis and clinical types
- Histopathology
- Prevention and control

3. Pulp and Periapical Pathologies

- Pulpitis, pulp degeneration
- Apical periodontitis, abscess, granuloma, cyst

4. Oral Mucosal Lesions

- Vesiculobullous diseases
- Ulcerative, infectious, and pigmentary disorders
- Allergic and drug-induced lesions

5. Salivary Gland Disorders

- Developmental disorders
- Inflammatory diseases
- Neoplasms
- Mucoceles and sialolithiasis

6. Cysts of the Oral and Maxillofacial Region

- Odontogenic cysts: radicular, dentigerous, keratocyst
- non-odontogenic cysts
- Cyst-like lesions

7. Odontogenic and Non-Odontogenic Tumors

- Classification and examples
- Clinical features and histology
- Diagnosis and basic management principles

8. Oral Precancer and Cancer

- Leukoplakia, erythroplakia
- Oral submucous fibrosis
- Squamous cell carcinoma
- TNM staging

9. Forensic Odontology (Basics)

- Age estimation
- Bite mark analysis
- Dental identification techniques

10. Laboratory Techniques and Histopathology

- Biopsy procedures
- Tissue processing and staining
- Slide identification: Normal vs. Pathological

Teaching Methodology

- Lectures and audiovisual presentations
- Laboratory practicals and demonstrations
- Case discussions and histopathological slide reviews
- Student seminars and assignments

Assessment

- **Internal Assessment**: Periodic tests, assignments, practicals
- **University Examination:**
  - Theory Paper (100 marks total)
  - Practical Exam (100 marks)
  - Viva Voce and Record Evaluation

Recommended Textbooks

- Shafer’s Textbook of Oral Pathology
- Neville’s Oral and Maxillofacial Pathology
- Harsh Mohan – Textbook of Pathology
- Ananthanarayan & Paniker – Textbook of Microbiology

Oral Pathology and Microbiology – Post Graduate Curriculum

The postgraduate curriculum for the Master of Dental Surgery (MDS) in Oral Pathology and Oral Microbiology in India is governed by the Dental Council of India (DCI) under the MDS Course Regulations, 2017. These regulations outline the comprehensive framework for the course, encompassing applied basic sciences, specialized subjects, clinical training, research, and evaluation methods.

Key Components of the Curriculum

1. Applied Basic Sciences

The foundational subjects include:

- General and Oral Anatomy and Histology
- General and Oral Physiology
- General and Oral Biochemistry

- General and Oral Pathology
- General and Oral Microbiology
- General Medicine and Surgery

These subjects provide the essential knowledge base for understanding the pathophysiology of oral diseases.

2. Specialty Subjects

Focused training is provided in:

- Oral and Maxillofacial Pathology
- Oral Microbiology and Immunology
- Forensic Odontology.

The curriculum emphasizes the diagnosis and management of oral diseases, integrating histopathological, microbiological, and molecular techniques.

3. Clinical Training and Laboratory Work

Students engage in:

- Histopathological examination of oral tissues
- Microbiological analysis related to oral infections
- Immunological assessments
- Forensic case evaluations

This hands-on experience is crucial for developing diagnostic proficiency.

4. Research and Dissertation

A significant component involves conducting original research leading to a dissertation. This process cultivates analytical skills and contributes to the advancement of the field.

5. Evaluation and Examinations

Assessment methods include:

- Periodic internal evaluations
- Theory examinations
- Practical and clinical assessments
- Viva voce (oral examinations)