

# ORAL PATHOLOGY & ORAL MICROBIOLOGY

## 1. INTRODUCTION:

A bird's eye view of the different pathological processes involving the oral cavity & oral cavity involvement in systemic diseases to be brought out. Interrelationship between General Medicine & General Surgery & Oral pathology to be emphasized.

2. Developmental disturbances of teeth, jaws and soft tissues of oral & paraoral region :  
Introduction to developmental disturbances - Hereditary, Familial mutation, Hormonal etc. causes to be highlighted.

Developmental disturbances of teeth - Etiopathogenesis, clinical features, radiological features & histopathological features as appropriate :-

The size, shape, number, structure & eruption of teeth & clinical significance of the anomalies to be emphasized.

Forensic Odontology.

Developmental disturbances of jaws - size & shape of the jaws.

Developmental disturbances of oral & paraoral soft tissues - lip & palate - clefts, tongue, gingiva, mouth, salivary glands & face.

3. Dental Caries :

Etiopathogenesis, microbiology, clinical features, diagnosis, histopathology, immunology, prevention of dental caries & its sequelae.

4. Pulp & Periapical Pathology & Osteomyelitis.

Etiopathogenesis & interrelationship, clinical features, microbiology, histopathology & radiological features (as appropriate) of pulp & periapical lesions & osteomyelitis.

Sequelae of periapical abscess - summary of space infections, systemic complications & significance.

5. Periodontal Diseases :

Etiopathogenesis, microbiology, clinical features, histopathology & radiological features (as appropriate) of gingivitis, gingival enlargements & periodontitis. Basic immunological mechanisms of periodontal disease to be highlighted.

6. Microbial infections of oral soft tissues :

Microbiology, defence mechanisms including immunological aspects, oral manifestations, histopathology and laboratory diagnosis of common bacterial, viral & fungal infections namely :-

Bacterial : Tuberculosis, Syphilis, ANUG & its complications - Cancrum Oris.

Viral : Herpes Simplex, Varicella zoster, Measles, Mumps & HIV infection.

Fungal : Candidal infection. Aphthous Ulcers.

7. Common non-inflammatory diseases involving the jaws :

Etiopathogenesis, clinical features, radiological & laboratory values in diagnosis of :

Fibrous dysplasia, Cherubism, Osteogenesis Imperfecta, Paget's disease, Cleidocranial dysplasia, Rickets, Achondroplasia, Marfan's syndrome & Down's syndrome.

8. Diseases of TM Joint :

Ankylosis, summary of different types of arthritis & other developmental malformations, traumatic injuries & myofascial pain dysfunction syndrome.

9. Cysts of the Oral & Paraoral region :

Classification, etiopathogenesis, clinical features, histopathology, laboratory & radiological features (as appropriate) of Odontogenic cysts, Non-Odontogenic cysts, Pseudocysts of jaws & soft tissue cysts of oral & paraoral region.

Classification of Odontogenic, Non-Odontogenic & Salivary Gland Tumours. Etiopathogenesis, clinical features, histopathology, radiological features & laboratory diagnosis (as appropriate) of the following common tumours :-

a) Odontogenic - all lesions.

b) Non-odontogenic

- Benign Epithelial - Papilloma, Keratoacanthoma & Naevi.

- Benign Mesenchymal - Fibroma, Aggressive fibrous lesions, Lipoma, Haemangioma, Lymphangioma, Neurofibroma, Schwannoma, Chondroma, Osteoma & Tori.

- Malignant Epithelial - Basal Cell Carcinoma, Verrucous Carcinoma, Squamous Cell carcinoma & Malignant Melanoma.

- Malignant Mesenchymal - Fibrosarcoma, Osteosarcoma, Giant cell tumour, Chondrosarcoma, Angiosarcoma, Kaposi's sarcoma, Lymphomas, Ewing's sarcoma & Other Reticuloendothelial tumours.

c) Salivary Gland

- Benign Epithelial neoplasms - Pleomorphic Adenoma, Warthin's tumour, & Oncocytoma.

- Malignant Epithelial neoplasms - Adenoid Cystic Carcinoma, Mucoepidermoid Carcinoma, Acinic Cell Carcinoma & Adenocarcinomas.

d) Tumours of Disputed Origin - Congenital Epulis & Granular Cell Myoblastoma.

e) Metastatic tumours - Tumors metastasizing to & from oral cavity & the routes of metastasis.

11. Traumatic, Reactive & Regressive lesions of Oral Cavity :

Pyogenic & Giant cell granuloma, exostoses Fibrous Hyperplasia, Traumatic Ulcer & Traumatic Neuroma.

Attrition, Abrasion, Erosion, Bruxism, Hypercementosis, Dentinal changes, Pulp calcifications & Resorption of teeth.

Radiation effects of oral cavity, summary of Physical & Chemical injuries including allergic reactions of the oral cavity.

Healing of Oral wounds & complications - Dry socket.

12. Non neoplastic Salivary Gland Diseases :

Sialolithiasis, Sialosis, Sialadenitis, Xerostomia & Ptyalism.

13. Systemic Diseases involving Oral cavity :

Brief review & oral manifestations, diagnosis & significance of common Blood, Nutritional, Hormonal & Metabolic diseases of Oral cavity.

Etiopathogenesis, clinical features & histopathology of the following common lesions.

Lichen Planus, Lupus Erythematosus, Pemphigus & Pemphigoid lesions, Erythema Multiforme, Psoriasis, Scleroderma, Ectodermal Dysplasia, Epidermolysis bullosa & White sponge nevus..

15. Diseases of the Nerves :

Facial neuralgias - Trigeminal & Glossopharyngeal. VII nerve paralysis, Causalgia.

Psychogenic facial pain & Burning mouth syndrome.

16. Pigmentation of Oral & Paraoral region & Discolouration of teeth :

causes & clinical manifestations.

17. Diseases of Maxillary Sinus :

Traumatic injuries to sinus, Sinusitis, Cysts & Tumours involving antrum.

18. a) ORAL PRECANCER – CANCER; Epidemiology, aetiology, clinical and histopathological features, TNM classification. Recent advances in diagnosis, management and prevention.

b) Biopsy : Types of biopsy, value of biopsy, cytology, histo chemistry & frozen sections in diagnosis of oral diseases.

19. Principles of Basic Forensic Odontology (Pre-clinical Forensic Odontology):

Introduction, definition, aims & scope.

Sex and ethnic (racial) differences in tooth morphology and histological age estimation

Determination of sex & blood groups from buccal mucosa / saliva.

Dental DNA methods

Bite marks, rugae patterns & lip prints.

Dental importance of poisons and corrosives.

Overview of forensic medicine and toxicology

**RECOMMENDED BOOKS**

- |  |                                     |
|--|-------------------------------------|
| 1. A Text Book of Oral Pathology                     | - Shafer, Hine & Levy.              |
| 2. Oral Pathology - Clinical Pathologic correlations | - Regezi & Sciubba.                 |
| 3. Oral Pathology                                    | - Soames & Southam.                 |
| 4. Oral Pathology in the Tropics                     | - Prabhu, Wilson, Johnson & Daftary |

## GENERAL MEDICINE

### THEORY SYLLABUS

#### CORE TOPICS (Must Know)

1. Aims of medicine Definitions of signs, symptoms, diagnosis, differential diagnosis treatment & prognosis.

2. Infections.

Enteric fever, AIDS, herpes simplex, herpes zoster, syphilis diphtheria.

#### COLLATERAL TOPICS (Desirable to Know)

Infectious mononucleosis mumps, measles, rubella, malaria.

**3. G.I.T.**

Stomatitis, gingival hyperplasia, dysphagia, acid peptic disease, jaundice, acute and chronic hepatitis, cirrhosis of liver ascites.

**4. CVS**

Acute rheumatic fever      rheumatic      valvular heart disease, hypertension,      ischemic      heart disease, infective endocarditis, common arrhythmias, congenital heart disease, congestive cardiac failure.

**5. RS**

Pneumonia, COPD, Pulmonary TB, Bronchial asthma

**6. Hematology**

Anemias, bleeding & clotting disorders, leukemias, lymphomas, agranulocytosis, splenomegaly, oral manifestations of hematologic disorders, generalized Lymphadenopathy.

**7. Renal System**

Acute nephritis  
Nephrotic syndrome

**8. Nutrition**

Avitaminosis

**9. CNS**

Facial palsy, facial pain including trigeminal neuralgia, epilepsy, headache including migraine.

**10. Endocrines**

Diabetes Mellitus Acromegaly, Hypothyroidism, Thyrotoxicosis, Calcium metabolism and parathyroids.

**11. Critical care**

Syncope, cardiac arrest, CPR, shock

Diarrhea  
Dysentery  
Amoebiasis  
Malabsorption

Lung Abscess  
Pleural effusion  
Pneumothorax  
Bronchiectasis  
Lung cancers.

Renal failure

Balanced diet  
PEM

Avitaminosis

- Meningitis
  - Examination of comatose patient
  - Examination of cranial nerves.
- Addison's disease, Cushing's syndrome.

Ac LVF  
ARDS

### **CLINICAL TRAINING:**

The student must be able to take history, do general physical examination (including build, nourishment, pulse, BP, respiration, clubbing, cyanosis, jaundice, lymphadenopathy, oral cavity) and be able to examine CVS, RS and abdomen and facial nerve.

## **GENERAL SURGERY**

### **1. HISTORY OF SURGERY:**

The development of surgery as a speciality over the years, will give the students an opportunity to know the contributions made by various scientists, teachers and investigators. It will also enable the student to understand the relations of various specialities in the practice of modern surgery.

### **2. GENERAL PRINCIPLES OF SURGERY:**

Introduction to various aspects of surgical principles as related to orodental diseases. Classification of diseases in general. This will help the student to understand the various diseases, their relevance to routine dental practice.

### **3. WOUNDS:**

Their classification, wound healing, repair, treatment of wounds, medico-legal aspects of accidental wounds and complications of wounds.

### **4. INFLAMMATION:**

Of soft and hard tissues. Causes of inflammation, varieties, treatment and sequelae.

### **5. INFECTIONS:**

Acute and chronic abscess skin infections, cellulitis, carbuncle, and erysepelas. Specific infections such as tetanus, gangrene, syphilis, gonorrhoea, tuberculosis, Actinomyces, Vincents angina, cancrum oris. Pyaemia, toxæmia and septicaemia.

### **6. TRANSMISSABLE VIRAL INFECTIONS:**

HIV and Hepatitis B with special reference to their prevention and precautions to be taken in treating patients in a carrier state.

### **7. SHOCK AND HAEMORRHAGE:**

Classification, causes, clinical features and management of various types of shock. Syncope, Circulatory collapse. Haemorrhage – different types, causes, clinical features and management. Blood groups, blood transfusion, precautions and complications of blood and their products. Hemophilia's, their transmission, clinical features and management especially in relation to minor dental procedures.

### **8. TUMOURS, ULCERS, CYSTS, SINUS AND FISTULAE:**

Classification, clinical examination and treatment principles in various types of benign and malignant tumours, ulcers, cysts, sinus and fistulae.

### **9. DISEASES OF LYMPHATIC SYSTEM:**

Especially those occurring in head and neck region. Special emphasis on identifying diseases such as tubercular infection, lymphomas, leukaemias, metastatic lymph node diseases.

### **10. DISEASES OF THE ORAL CAVITY:**

Infective and malignant diseases of the oral cavity and oropharynx including salivary glands with special emphasis on preventive aspects of premalignant and malignant diseases of the oral cavity.

### **11. DISEASES OF LARYNX, NASOPHARYNX:**

Infections and tumours affecting these sites. Indications, procedure and complications of tracheostomy.

### **12. NERVOUS SYSTEM:**

Surgical problems associated with nervous system with special reference to the principles of peripheral nerve injuries, their regeneration and principles of treatment. Detailed description of afflictions of facial nerve and its management. Trigeminal neuralgia, its presentation and treatment.

### **13. FRACTURES:**

General principles of fractures, clinical presentation and treatment with additional reference to newer methods of fracture treatment. Special emphasis on fracture healing and rehabilitation.

### **14. PRINCIPLES OF OPERATIVE SURGERY:**

Principles as applicable to minor surgical procedures including detailed description of asepsis, antiseptics, sterilisation, principles of anaesthesia and principles of tissue replacement. Knowledge of sutures, drains, diathermy, cryosurgery and use of Laser in surgery.

### **15. ANOMOLIES OF DEVELOPMENT OF FACE:**

Surgical anatomy and development of face. Cleft lip and cleft palate—principles of management.

### **16. DISEASES OF THYROID AND PARATHYROID:**

Surgical anatomy, pathogenesis, clinical features and management of dysfunction of thyroid and parathyroid glands. Malignant diseases of the thyroid—classification, clinical features and management.

### **17. SWELLINGS OF THE JAW:**

Differential diagnosis and management of different types of swellings of the jaw.

## 18. BIOPSY:

Different types of biopsies routinely used in surgical practice.

Skills to be developed by the end of teaching is to examine a routine swelling, ulcer and other related diseases and to perform minor surgical procedures such as draining an abscess, taking a biopsy etc.

# CONSERVATIVE DENTISTRY AND ENDODONTICS (3<sup>rd</sup> and 4<sup>th</sup> yr)

## INTRODUCTION :

Definition aims objectives of Conservative Dentistry scope and future of Conservative Dentistry.

1. **Nomenclature Of Dentition:**  
Tooth numbering systems A.D.A. Zsigmondy Palmer and F.D.I. systems.
2. **Principles Of Cavity Preparation :**  
Steps and nomenclature of cavity preparation classification of cavities, nomenclature of floors angles of cavities.
3. **Dental Caries :**  
Aetiology, classification clinical features, morphological features, microscopic features, clinical diagnosis and sequel of dental caries.
4. **Treatment Planning For Operative Dentistry:**  
Detailed clinical examination , radiographic examination, tooth vitality tests, diagnosis and treatment planning, preparation of the case sheet.
5. **Gnathological Concepts Of Restoration:**  
Physiology of occlusion, normal occlusion, Ideal occlusion, mandibular movements and occlusal analysis. Occlusal rehabilitation and restoration.
6. **Aramamentarium For Cavity Preparation:**  
General classification of operative instruments, Hand cutting instruments design formula and sharpening of instruments. Rotary cutting instruments dental bur, mechanism of cutting, evaluation of hand piece and speed current concepts of rotary cutting procedures. Sterilisation and maintenance of instruments. Basic instrument tray set up.
7. **Control of Operating Filed:**  
Light source sterilisation field of operation control of moisture, rubber dam in detail, cotton rolls and anti sialogagues.
8. **Amalgam Restoration :**  
Indication contra indication, physical and mechanical properties , clinical behaviour. Cavity preparation for Class I , II, V and III. Step wise procedure for cavity preparation and restoration. Failure of amalgam restoration.
9. **Pulp Protection :**  
Liners, varnishes and bases, Zinc phosphate, zinc polycarboxylate, zinc oxide eugenol and glass inomer cements.
10. **Anterior Restorations :**  
Selection of cases, selection of material, step wise procedures for using restorations , silicate ( theory only) glass inomers, composites, including sand witch restorations and bevels of the same with a note on status of the dentine bonding agents.
11. **Direct Filling Gold Restorations :**  
Types of direct filling gold indications and limitations of cohesive gold. Annealing of gold foil cavity preparation and condensation of gold foils.
12. **Preventive Measures In Restorative Practice :**  
Plaque Control, Pitand fissure sealants dietary measures restorative procedure and periodontal health. Contact and contour of teeth and restorations matrices tooth separation and wedges.
13. **Temporisation or Interim Restoration.**
14. **Pin Amalgam Restoration Indication Contra Indication :**  
Advantages disadvantages of each types of pin methods of placement use of auto matrix. Failure of pin amalgam restoration.
15. **Management Of Deep Carious Lesions Indirect And Direct Pulp Capping.**
16. **Non Carious Destruction's Tooth Structures Diagnosis and Clinical Management**
17. **Hyper Sensitive Dentine And Its Management.**
18. **Cast Restorations**  
Indications, contra indications, advantages and disadvantages and materials used for same Class II and Class I cavity preparation for inlays fabrication of wax pattern spurring inverting and casting procedures & casting defects.
19. **Die Materials And Preparation Of Dies.**
20. **Gingival Tissue Management For Cast Restoration And Impression Procedures**
21. **Recent Cavity Modification Amalgam Restoration.**
22. **Differences between Amalgam And Inlay Cavity preparation with note on all the types of Bewels used for Cast Restoration.**
23. **Control Of Pain During Operative Procedures.**
24. **Treatment Planning For Operative Dentistry Detailed Clinical Examination Radiographic Examination**
25. **Vitality Tests, Diagnosis And Treatment Planning And Preparation Of Case Sheet.**
26. **Applied Dental Materials.**
  1. **Biological Considerations.**  
Evaluation, clinical application and adverse effects of the following materials. Dental cements, Zinc oxide eugenol cements zinc phosphate cements, polycarboxylates glass ionomer cements, silicate cement calcium hydroxides varnishes.

2. Dental amalgam, technical considerations mercury toxicity mercury hygiene.
3. Composite, Dentine bonding agents, chemical and light curing composites
4. Rubber base Imp. Materials
5. Nobel metal alloys & non noble metal alloys
6. Investment and die materials
7. Inlay casting waxes
8. Dental porcelain
9. Aesthetic Dentistry
27. Endodontics: introduction definition scope and future of endodontics
28. Clinical diagnostic methods
29. Emergency endodontic procedures
30. Pulpal diseases causes, types and treatment .
31. Periapical diseases: acute periapical abscess, acute periodontal abscess phoeix abscess, chronic alveolar abscess granuloma cysts condensing osteitis, external resorption.
32. Vital pulp therapy: indirect and direct pulp capping pulpotomy different types and medicaments used.
33. Apexogenesis and apexification or problems of open apex.
34. Rationale of endodontic treatment case selection indication and contraindications for root canal treatments.
35. Principles of root canal treatment mouth preparation root canal instruments, hand instruments, power driven instruments, standardisation color coding principle of using endodontic instruments. Sterilisation of root canal instruments and materials rubber dam application.
36. Anatomy of the pulp cavity: root canals apical foramen. Anomalies of pulp cavities access cavity preparation of anterior and premolar teeth.
37. Preparation of root canal space . Determination of working length, cleaning and shaping of root canals, irrigating solution chemical aids to instrumentation.
38. Disinfection of root canal space intracanal medicaments, poly antibiotic paste ross mans paste, mummifying agents. Out line of root canal treatment, bacteriological examinations, culture methods.
39. Problems during cleaning and shaping of root canal spaces. Perforation and its management. Broken instruments and its management, management of single and double curved root canals.
40. Methods of cleaning and shaping like step back crown down and conventional methods.
41. Obturation of the root canal system. Requirements of an ideal root canal filling material obturation methods using gutta percha healing after endodontic treatment. Failures in endodontics.
42. Root canal sealers. Ideal properties classification. Manipulation of root canal sealers.
43. post endodontic restoration fabrication and components of post core preparation.
44. smear layer and its importance in endodontics and conservative treatment.
45. discoloured teeth and its management. Bleaching agents, vital and non vital bleaching methods.
46. traumatised teeth classification of fractured teeth. Management of fractured tooth and root. Luxated teeth and its management.
47. endodontic surgeries indication contraindications, pre operative preparation. Pre medication surgical instruments and techniques apicectomy, retrograde filling, post operative sequele terphination hemisection, radiscetomy techniques of tooth reimplantation (both intentional and accidental) endodontic implants.
48. root resorption.
49. emergency endodontic procedures.
50. lasers in conservative endodontics (introduction only) practice management
51. professional association dentist act 1948 and its amendment 1993.
52. duties towards the govt. Like payments of professional tax, income tax.
53. financial management of practice
54. dental material and basic equipment management.
55. Ethics

## **ORAL & MAXILLOFACIAL SURGERY (3<sup>rd</sup> and 4<sup>th</sup> yr)**

1. Introduction, definition, scope, aims and objectives.
2. Diagnosis in oral surgery:
  - (A) History taking
  - (B) Clinical examination
  - (C) Investigations.
3. Principles of infection control and cross-infection control with particular reference to HIV/AIDS and Hepatitis.
4. Principles of Oral Surgery -
  - a) Asepsis: Definition, measures to prevent introduction of infection during surgery.
    1. Preparation of the patient
    2. Measures to be taken by operator
    3. Sterilisation of instruments - various methods of sterilisation etc.
    4. Surgery set up.
  - b) Painless Surgery:
    1. Pre-anaesthetic considerations. Pre-medication: purpose, drugs used
    2. Anaesthetic considerations -
      - a) Local b) Local with IV sedations
    3. Use of general anaesthetic
  - c) Access:

**Intra-oral: Mucoperiosteal flaps, principles, commonly used intra oral incisions.**

**Bone Removal: Methods of bone removal.**

**Use of Burs: Advantages & precautions**

**Bone cutting instruments: Principles of using chisel & osteotome.**

**Extra-oral: Skin incisions - principles, various extra-oral incision to expose facial skeleton.**

- a) Submandibular
- b) Pre auricular
- c) Incision to expose maxilla & orbit
- d) Bicoronal incision

**d) Control of haemorrhage during surgery**

**Normal Haemostasis**

**Local measures available to control bleeding**

**Hypotensive anaesthesia etc.**

**e) Drainage & Debridement**

**Purpose of drainage in surgical wounds**

**Types of drains used**

**Debridement: purpose, soft tissue & bone debridement.**

**f) Closure of wounds**

**Suturing: Principles, suture material, classification, body response to various materials etc.**

**g) Post operative care**

**Post operative instructions**

**Physiology of cold and heat**

**Control of pain - analgesics**

**Control of infection - antibiotics**

**Control of swelling - anti-inflammatory drugs**

**Long term post operative follow up - significance.**

**5. Exodontia: General considerations**

**Ideal Extraction.**

**Indications for extraction of teeth**

**Extractions in medically compromised patients.**

**Methods of extraction -**

**(a) Forceps or intra-alveolar or closed method.**

**Principles, types of movement, force etc.**

**(b) Trans-alveolar, surgical or open method, Indications, surgical procedure. Dental**

**elevators: uses, classification, principles in the use of elevators, commonly**

**used elevators. Complications of Exodontia -**

**Complications during exodontia Common to**

**both maxilla and mandible. Post-operative**

**complications -**

**Prevention and management of complications.**

**6. Impacted teeth:**

**(a) Impacted mandibular third molar.**

**Classification, reasons for removal,**

**Assessment - both clinical & radiological**

**Surgical procedures for removal.**

**Complications during and after removal,**

**Prevention and management.**

**(b) Maxillary third molar,**

**Indications for removal, classification,**

**Surgical procedure for removal.**

**(c) Impacted maxillary canine**

**Reasons for canine impaction,**

**Localization, indications for removal,**

**Methods of management, labial and palatal approach,**

**Surgical exposure, transplanted, removal etc.**

**7. Pre-prosthetic Surgery:**

**Definition, classification of procedures**

**(a) Corrective procedures: Alveoloplasty,**

**Reduction of maxillary tuberosities,**

**Frenectomies and removal of tori.**

**(b) Ridge extension or Sulcus extension procedures**

**Indications and various surgical procedures**

**(c) Ridge augmentation and reconstruction. Indications,**

**use of bone grafts, Hydroxyapatite Implants -**

**concept of osseointegration Knowledge of various**

**types of implants and surgical procedure to place**

**implants.**

**8. Diseases of the maxillary sinus Surgical**

**anatomy of the sinus. Sinusitis both**

**acute and chronic**

**Surgical approach of sinus - Caldwell-Luc procedure**

**Removal of root from the sinus.**

**Oro-antral fistula - aetiology, clinical features and various surgical methods for closure.**

9. Disorders of T.M. Joint
  - Applied surgical anatomy of the joint.
  - Dislocation - Types, aetiology, clinical features and management.
  - Ankylosis - Definition, aetiology, clinical features and management
  - Myo-facial pain dysfunction syndrome, aetiology, clinical features, management-Non surgical and surgical.
  - Internal derangement of the joint.
  - Arthritis of T.M. Joint.
10. Infections of the Oral cavity
  - Introduction, factors responsible for infection, course of odontogenic infections, spread of odontogenic infections through various facial spaces.
  - Dento-alveolar abscess - aetiology, clinical features and management.
  - Osteomyelitis of the jaws - definition, aetiology, pre-disposing factors, classification, clinical features and management.
  - Ludwigs angina - definition, aetiology, clinical features, management and complications.
11. Benign cystic lesions of the jaws -
  - Definition, classification, pathogenesis.
  - Diagnosis - Clinical features, radiological, aspiration biopsy, use of contrast media and histopathology.
  - Management - Types of surgical procedures, Rationale of the techniques, indications, procedures, complications etc.
12. Tumours of the Oral cavity -
  - General considerations
  - Non odontogenetic benign tumours occurring in oral cavity - fibroma, papilloma, lipoma, ossifying fibroma, myxoma etc.
  - Ameloblastoma - Clinical features, radiological appearance and methods of management.
  - Carcinoma of the oral cavity -
    - Biopsy - types
    - TNM classification.
    - Outline of management of squamous
    - Cell carcinoma: surgery, radiation and chemotherapy
    - Role of dental surgeons in the prevention and early detection of oral cancer.
13. Fractures of the jaws -
  - General considerations, types of fractures, aetiology, clinical features and general principles of management.
  - mandibular fractures - Applied anatomy, classification.
  - Diagnosis - Clinical and radiological
  - Management - Reduction closed and open
  - Fixation and immobilisation methods
  - Outline of rigid and semi-rigid internal fixation.
  - Fractures of the condyle - aetiology, classification, clinical features, principles of management.
  - Fractures of the middle third of the face.
  - Definition of the mid face, applied surgical anatomy, classification, clinical features and outline of management.
  - Alveolar fractures - methods of management
  - Fractures of the Zygomatic complex
  - Classification, clinical features, indications for treatment, various methods of reduction and fixation.
  - Complications of fractures - delayed union, non-union and malunion.
14. Salivary gland diseases -
  - Diagnosis of salivary gland diseases'
  - Sialography, contrast media, procedure.
  - Infections of the salivary glands
  - Sialolithiasis - Sub mandibular duct and gland and parotid duct.
  - Clinical features, management.
  - Salivary fistulae
  - Common tumours of salivary glands like Pleomorphic adenoma including minor salivary glands.
15. Jaw deformities -
  - Basic forms - Prognathism, Retrognathism and open bite.
  - Reasons for correction.
  - Outline of surgical methods carried out on mandible and maxilla.
16. Neurological disorders -
  - Trigeminal neuralgia - definition, aetiology, clinical features and methods of management including surgical.
  - Facial paralysis - Aetiology, clinical features.
  - Nerve injuries - Classification, neurotomy etc.
17. Cleft Lip and Palate -
  - Aetiology of the clefts, incidence, classification, role of dental surgeon in the management of cleft patients. Outline of the closure procedures.
18. Medical Emergencies in dental practice –
  - Primary care of medical emergencies in dental practice particularly -



- (a) Cardio vascular (b) Respiratory (c) Endocrine
- (d) Anaphylactic reaction (e) Epilepsy (f) Epilepsy
- 19. Emergency drugs & Intra muscular I.V. Injections -  
Applied anatomy, Ideal location for giving these injections, techniques etc.
- 20. Oral Implantology
- 21. Ethics

#### LOCAL ANAESTHESIA:

Introduction, concept of L.A., classification of local anaesthetic agents, ideal requirements, mode of action, types of local anaesthesia, complications.

- Use of Vaso constrictors in local anaesthetic solution -
- Advantages, contra-indications, various vaso constrictors used.
- Anaesthesia of the mandible -
- Pterygomandibular space - boundaries, contents etc.
- Interior Dental Nerve Block - various techniques
- Complications
- Mental foramen nerve block
- Anaesthesia of Maxilla -
- Intra - orbital nerve block.
- Posterior superior alveolar nerve block
- Maxillary nerve block - techniques.

#### GENERAL ANAESTHESIA –

- Concept of general anaesthesia.
- Indications of general anaesthesia in dentistry.
- Pre-anaesthetic evaluation of the patient.
- Pre-anaesthetic medication - advantages, drugs used.
- Commonly used anaesthetic agents.
- Complication during and after G.A.
- I.V. sedation with Diazepam and Medazolam.
- Indications, mode of action, technique etc.
- Cardiopulmonary resuscitation
- Use of oxygen and emergency drugs.
- Tracheostomy.

#### RECOMMENDED BOOKS:

1. Impacted teeth; Alling John F & etal.
2. Principles of oral and maxillofacial surgery; Vol.1,2 & 3 Peterson LJ & etal.
3. Text book of oral and maxillofacial surgery; Srinivasan B.
4. Handbook of medical emergencies in the dental office, Malamed SF.
5. Killeys Fractures of the mandible; Banks P.
6. Killeys fractures of the middle 3<sup>rd</sup> of the facial skeleton; Banks P.
7. The maxillary sinus and its dental implications; McGovanda
8. Killey and Kays outline of oral surgery – Part-1; Seward GR & etal
9. Essentials of safe dentistry for the medically compromised patients; Mc Carthy FM
10. Oral & maxillofacial surgery, Vol 2; Laskin DM
11. Extraction of teeth; Howe, GL
12. Minor Oral Surgery; Howe.GL
13. Contemporary oral and maxillofacial surgery; Peterson I.J.& EA
14. Oral and maxillofacial infections; Topazian RG & Goldberg MH

## ORAL MEDICINE AND RADIOLOGY (3<sup>rd</sup> & 4<sup>th</sup> yr)

### Part-I ORAL MEDICINE AND DIAGNOSTIC AIDS

#### SECTION (A) – DIAGNOSTIC METHODS.

- (1) Definition and importance of Diagnosis and various types of diagnosis
- (2) Method of clinical examinations.
  - (a) General Physical examination by inspection.
  - (b) Oro-facial region by inspection, palpation and other means
  - (c) To train the students about the importance, role, use of saliva and techniques of diagnosis of saliva as part of oral disease
  - (d) Examination of lesions like swellings, ulcers, erosions, sinus, fistula, growths, pigmented lesions, white and red patches
  - (e) Examination of lymph nodes
  - (f) Forensic examination – Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post-mortem identification; jurisprudence and ethics.
- (3) Investigations
  - (a) Biopsy and exfoliative cytology
  - (b) Hematological, Microbiological and other tests and investigations necessary for diagnosis and prognosis

#### SECTION (B) – DIAGNOSIS, DIFFERENTIAL DIAGNOSIS

While learning the following chapters, emphasis shall be given only on diagnostic aspects including differential diagnosis

- (1) Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth

- (2) Diseases of bone and Osteodystrophies: Development disorders: Anomalies, Exostosis and tori, infantile cortical hyperostosis, osteogenesis imperfecta, Marfan's syndrome, osteopetrosis. Inflammation – Injury, infection and spread of infection, fascial space infections, osteoradionecrosis. Metabolic disorders – Histiocytosis  
Endocrine – Acromegaly and hyperparathyroidism  
Miscellaneous – Paget's disease, Mono and polyostotic fibrous dysplasia, Cherubism.
- (3) Temporomandibular joint: Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Sub-luxation and luxation.
- (4) Common cysts and Tumors:  
CYSTS: Cysts of soft tissue: Mucocele and Ranula  
Cysts of bone: Odontogenic and nonodontogenic.

**TUMORS:**

**Soft Tissue:**

Epithelial: Papilloma, Carcinoma, Melanoma

Connective tissue: Fibroma, Lipoma, Fibrosarcoma

Vascular: Haemangioma, Lymphangioma

Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis

Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's Tumor, Adenoid cystic carcinoma.

**Hard Tissue:**

Non Odontogenic: Osteoma, Osteosarcoma, Osteoclastoma, Chondroma, Chondrosarcoma, Central giant cell tumor, and Central haemangioma

Odontogenic: Enameloma, Ameloblastoma, Calcifying Epithelial Odontogenic tumor, Adenomatoid

Odontogenic tumor, Periapical cemental dysplasia and odontomas

(5) Periodontal diseases: Gingival hyperplasia, gingivitis, periodontitis, pyogenic granuloma

(6) Granulomatous diseases: Tuberculosis, Sarcoidosis, Midline lethal granuloma, Crohn's Disease and Histiocytosis X

(7) Miscellaneous Disorders: Burkitt lymphoma, Sturge – Weber syndrome, CREST syndrome, Rendu-Osler-Weber disease

**SECTION (C): ORAL MEDICINE AND THERAPEUTICS.**

**The following chapters shall be studied in detail including the etiology, pathogenesis, clinical features, investigations, differential diagnosis, management and prevention**

- (1) Infections of oral and paraoral structures:

Bacterial: Streptococcal, tuberculosis, syphilis, Vincent's, leprosy, actinomycosis, diphtheria and tetanus

Fungal: Candida albicans

Virus: Herpes simplex, herpes zoster, Ramsay Hunt syndrome, measles, herpangina, mumps, infectious mononucleosis, AIDS and hepatitis-B

- (2) Important common mucosal lesions:

White lesions: Chemical burns, leukoedema, leukoplakia, Fordyce spots, stomatitis nicotina palatinus, white sponge nevus, candidiasis, lichen planus, discoid lupus erythematosus  
Vesiculo-bullous lesions: Herpes simplex, herpes zoster, herpangina, bullous lichen planus, pemphigus, cicatricial pemphigoid erythema multiforme.

Ulcers: Acute and chronic ulcers

Pigmented lesions: Exogenous and endogenous

Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth.

- (3) Cervico-facial lymphadenopathy

- (4) Facial pain:

(i) Organic pain: Pain arising from the diseases of orofacial tissues like teeth, pulp, gingival, periodontal tissue, mucosa, tongue, muscles, blood vessels, lymph tissue, bone, paranasal sinus, salivary glands etc.,

(ii) Pain arising due to C.N.S. diseases:

(a) Pain due to intracranial and extracranial involvement of cranial nerves. (Multiple sclerosis, cerebrovascular diseases, Trotter's syndrome etc.)

(b) Neuralgic pain due to unknown causes: Trigeminal neuralgia, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain

(iii) Referred pain: Pain arising from distant tissues like heart, spine etc.,

- (5) Altered sensations: Cacogeusia, halitosis

- (6) Tongue in local and systemic disorders: (Aglossia, ankyloglossia, bifid tongue, fissured tongue, scrotal tongue, macroglossia, microglossia, geographic tongue, median rhomboid glossitis, depapillation of tongue, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red patches etc.)

- (7) Oral manifestations of:

(i) Metabolic disorders:

(a) Porphyria

(b) Haemochromatosis

(c) Histiocytosis X diseases

(ii) Endocrine disorders:

(a) Pituitary: Gigantism, acromegaly, hypopituitarism

(b) Adrenal cortex: Addison's disease (Hypofunction)  
Cushing's syndrome (Hyperfunction)

(c) Parathyroid glands: Hyperparathyroidism.

(d) Thyroid gland: (Hypothyroidism) Cretinism, myxedema

(e) Pancreas: Diabetes

- (iii) Nutritional deficiency: Vitamins: riboflavin, nicotinic acid, folic acid Vitamin B12, Vitamin C (Scurvy)
- (iv) Blood disorders:
  - (a) Red blood cell diseases
    - Deficiency anemias: (Iron deficiency, plummer – vinson syndrome, pernicious anemia)
    - Haemolytic anemias: (Thalassemia, sickle cell anemia, erythroblastosis fetalis)
    - Aplastic anemia
    - Polycythemia
  - (b) White Blood cell diseases
    - Neutropenia, cyclic neutropenia, agranulocytosis, infectious mononeucleosis and leukemias
  - (c) Haemorrhagic disorders:
    - Thrombocytopenia, purpura, hemophillia, christmas disease and von willebrand's disease
- (8) Disease of salivary glands:
  - (i) Developmental disturbances: Aplasia, atresia and aberration
  - (ii) Functional disturbances: Xerostomia, ptyalism
  - (iii) Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis heerdfort's syndrome (Uveoparotid fever), Necrotising sialometaplasia
  - (iv) Cysts and tumors: Mucocele, ranula, pleomorphic adenoma, mucoepidermoid carcinoma
  - (v) Miscellaneous: Sialolithiasis, sjogren's syndrome, mikuliez's disease and sialosis
- (9) Dermatological diseases with oral manifestations:
  - (a) Ectodermal dysplasia (b) Hyperkerotosis palmarplantaris with periodontopathy (c) Scleroderma (d) Lichen planus including ginspan's syndrome (e) Lupus erythematosus (f) Pemphigus (g) Erythema multiforme (h) Psoriasis
- (10) Immunological diseases with oral manifestations
  - (a) Leukemia (b) Lymphomas (c) Multiple myeloma (d) AIDS clinical manifestations, opportunistic infections, neoplasms (e) Thrombocytopenia (f) Lupus erythematosus (g) Scleroderma (h) dermatomyositis (i) Submucous fibrosis (j) Rheumatoid arthritis (k) Recurrent oral ulcerations including behcet's syndrome and reiter's syndrome
- (11) Allergy: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to food drugs and chemicals)
- (12) Foci of oral infection and their ill effects on general health
- (13) Management of dental problems in medically compromised persons:
  - (i) Physiological changes: Puberty, pregnancy and menopause
  - (ii) The patients suffering with cardiac, respiratory, liver, kidney and bleeding disorders, hypertension, diabetes and AIDS. Post-irradiated patients.
- (14) Precancerous lesions and conditions
- (15) Nerve and muscle diseases:
  - (i) Nerves: (a) Neuropraxia (b) Neurotmesis (c) Neuritis (d) Facial nerve paralysis including Bell's palsy, Heerfordt's syndrome, Melkerson Rosenthal syndrome and ramsay hunt syndrome (e) Neuroma (f) Neurofibromatosis (g) Frey's syndrome
  - (ii) Muscles: (a) Myositis ossificans (b) Myofascial pain dysfunction syndrome (c) Trismus
- (16) Forensic odontology:
  - (a) Medicolegal aspects of orofacial injuries
  - (b) Identification of bite marks
  - (c) Determination of age and sex
  - (d) Identification of cadavers by dental appliances, Restorations and tissue remnants
- (17) Therapeutics: General therapeutic measures – drugs commonly used in oral medicine viz., antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, astringents, mouth washes, styptics, demulcents, local surface anaesthetic, sialogogues, antisialogogues and drugs used in the treatment of malignancy

## Part – II BEHAVIOURAL SCIENCES AND ETHICS.

### Part – III ORAL RADIOLOGY

- (1) Scope of the subject and history of origin
- (2) Physics of radiation: (a) Nature and types of radiations (b) Source of radiations (c) Production of X-rays (d) Properties of X-rays (e) Compton effect (f) Photoelectric effect (g) Radiation measuring units
- (3) Biological effects of radiation
- (4) Radiation safety and protection measures
- (5) Principles of image production
- (6) Radiographic techniques:
  - (i) Intra-Oral: (a) Periapical radiographs (Bisecting and parallel techniques) (b) Bite wing radiographs (c) Occlusal radiographs
  - (ii) Extra-oral: (a) Lateral projections of skull and jaw bones and paranasal sinuses (c) Cephalograms (d) Orthopantomograph (e) Projections of temporomandibular joint and condyle of mandible (f) Projections for Zygomatic arches
  - (iii) Specialised techniques: (a) Sialography (b) Xeroradiography (c) Tomography
- (7) Factors in production of good radiographs:
  - (a) K.V.P. and mA. of X-ray machine (b) Filters (c) Collimations (d) Intensifying screens (e) Grids (f) X-ray films (g) Exposure time (h) Techniques (i) Dark room (j) Developer and fixer solutions (k) Film processing
- (8) Radiographic normal anatomical landmarks
- (9) Faulty radiographs and artefacts in radiographs
- (10) Interpretation of radiographs in various abnormalities of teeth, bones and other orofacial tissues
- (11) Principles of radiotherapy of oro-facial malignancies and complications of radiotherapy
- (12) Contrast radiography and basic knowledge of radio-active isotopes
- (13) Radiography in Forensic Odontology - Radiographic age estimation and post-mortem radiographic methods

## **PRACTICALS / CLINICALS:**

1. Student is trained to arrive at proper diagnosis by following a scientific and systematic procedure of history taking and examination of the orofacial region. Training is also imparted in management wherever possible. Training also shall be imparted on saliva diagnostic procedures. Training also shall be imparted in various radiographic procedures and interpretation of radiographs.
2. In view of the above each student shall maintain a record of work done, which shall be evaluated for marks at the time of university examination
3. The following is the minimum of prescribed work for recording
  - (a) Recording of detailed case histories of interesting cases ..... 10
  - (b) Intra-oral radiographs (Periapical, bitewing, occlusal) ..... 25
  - (c) Saliva diagnostic check as routine procedure

## **BOOKS RECOMMENDED:**

- a) Oral Diagnosis, Oral Medicine & Oral Pathology
  1. Burkit – Oral Medicine – J.B. Lippincott Company
  2. Coleman – Principles of Oral Diagnosis – Mosby Year Book
  3. Jones – Oral Manifestations of Systemic Diseases – W.B. Saunders company
  4. Mitchell – Oral Diagnosis & Oral Medicine
  5. Kerr – Oral Diagnosis
  6. Miller – Oral Diagnosis & Treatment
  7. Hutchinson – clinical Methods
  8. Oral Pathology – Shafers
  9. Sonis.S.T., Fazio.R.C. and Fang.L - Principles and practice of Oral Medicine
- b) Oral Radiology
  1. White & Goaz – Oral Radiology – Mosby year Book
  2. Weahrman – Dental Radiology – C.V. Mosby Company
  3. Stafne – Oral Roentgenographic Diagnosis – W.B.Saunders Co.,
- c) Forensic Odontology
  1. Derek H.Clark – Practical Forensic Odontology - Butterworth-Heinemann (1992)
  2. C Michael Bowers, Gary Bell – Manual of Forensic Odontology - Forensic Pr (1995)

## **ORTHODONTICS & DENTAL ORTHOPAEDICS (3<sup>rd</sup> & 4<sup>th</sup> yr)**

1. Introduction, Definition, Historical Background, Aims And Objectives Of Orthodontics And Need For Orthodontics Care.
2. Growth And Development: In General
  - a. Definition
  - b. Growth spurts and Differential growth
  - c. Factors influencing growth and Development
  - d. Methods of measuring growth
  - e. Growth theories (Genetic, Sicher's, Scott's, Moss's, Petrovics, Multifactorial)
  - f. Genetic and epigenetic factors in growth
  - g. Cephalocaudal gradient in growth.
3. Morphologic Development Of Craniofacial Structures
  - a. Methods of bone growth
  - b. Prenatal growth of craniofacial structures
  - c. Postnatal growth and development of: cranial base, maxilla, mandible, dental arches and occlusion.
4. Functional Development Of Dental Arches And Occlusion
  - a. Factors influencing functional development of dental arches and occlusion.
  - b. Forces of occlusion
  - c. Wolfe's law of transformation of bone
  - d. Trajectories of forces
5. Clinical Application Of Growth And Development
6. Malocclusion - In General
  - a. Concept of normal occlusion
  - b. Definition of malocclusion
  - c. Description of different types of dental, skeletal and functional malocclusion.
7. Classification of Malocclusion  
Principle, description, advantages and disadvantages of classification of malocclusion by Angle's, Simon's, Lischer's and Ackerman and Proffitt's.
8. Normal And Abnormal Function Of Stomatognathic System
9. Etiology Of Malocclusion
  - a. Definition, importance, classification, local and general etiological factors.
  - b. Etiology of following different types of malocclusion:
    - 1) Midline diastema
    - 2) Spacing
    - 3) Crowding
    - 4) Cross-Bite: Anterior/Posterior
    - 5) Class III Malocclusion
    - 6) Class II Malocclusion
    - 7) Deep Bite
    - 8) Open bite

10. **Diagnosis And Diagnostic Aids**
  - a. Definition, Importance and classification of diagnostic aids
  - b. Importance of case history and clinical examination in orthodontics
  - c. Study Models: - Importance and uses - Preparation and preservation of study models
  - d. Importance of intraoral X-rays in orthodontics
  - e. Panoramic radiographs: - Principles, Advantages, disadvantages and uses
  - f. Cephalometrics: Its advantages, disadvantages
    1. Definition
    2. Description and use of cephalostat
    3. Description and uses of anatomical landmarks lines and angles used in cephalometric analysis
  4. Analysis- Steiner's, Down's, Tweed's, Ricket's-E- line
  - g. Electromyography and its uses in orthodontics
  - h. Wrist X-rays and its importance in orthodontics
11. **General Principles In Orthodontic Treatment Planning Of Dental And Skeletal Malocclusions**
12. **Anchorage In Orthodontics - Definition, Classification, Types and Stability Of Anchorage**
13. **Biomechanical Principles In Orthodontic Tooth Movement**
  - a. Different types of tooth movements
  - b. Tissue response to orthodontic force application
  - c. Age factor in orthodontic tooth movement
14. **Preventive Orthodontics**
  - a. Definition
  - b. Different procedures undertaken in preventive orthodontics and their limitations.
15. **Interceptive Orthodontics**
  - a. Definition
  - b. Different procedures undertaken in interceptive orthodontics
  - c. Serial extractions: Definition, indications, contra-indication, technique, advantages and disadvantages.
  - d. Role of muscle exercises as an interceptive procedure
16. **Corrective Orthodontics**
  - a. Definition, factors to be considered during treatment planning.
  - b. Model analysis: Pont's, Ashley Howe's, Bolton, Careys, Moyer's Mixed Dentition Analysis
  - c. Methods of gaining space in the arch:- Indications, relative merits and demerits of proximal stripping, arch expansion and extractions
  - d. Extractions in Orthodontics - indications and selection of teeth for extraction.
17. **Orthodontic Appliances: General**
  - a. Requisites for orthodontic appliances
  - b. Classification, indications of Removable and Functional Appliances
  - c. Methods of force application
  - d. Materials used in construction of various orthodontic appliances - uses of stainless steel, technical considerations in curing of acrylic, Principles of welding and soldering, fluxes and antirfluxes.
  - e. Preliminary knowledge of acid etching and direct bonding.
18. **Ethics**

#### **REMOVABLE ORTHODONTIC APPLIANCES**

- 1) Components of removable appliances
- 2) Different types of clasps and their uses
- 3) Different types of labial bows and their uses
- 4) Different types of springs and their uses
- 5) Expansion appliances in orthodontics:
  - i) Principles
  - ii) Indications for arch expansion
  - iii) Description of expansion appliances and different types of expansion devices and their uses.
  - iv) Rapid maxillary expansion

## **FIXED ORTHODONTIC APPLIANCES**

1. Definition, Indications & Contraindications
2. Component parts and their uses
3. Basic principles of different techniques: Edgewise, Begg's, straight wire.

## **EXTRAORAL APPLIANCES**

1. Headgears
2. chin cup
3. reverse pull headgears

## **MYOFUNCTIONAL APPLIANCES**

1. Definition and principles
2. Muscle exercises and their uses in orthodontics
3. Functional appliances:
  - i) Activator, Oral screens, Frankel's function regulator, bionator twin blocks, lip bumper
  - ii) Inclined planes - upper and lower
18. Orthodontic Management Of Cleft Lip And Palate
19. Principles Of Surgical Orthodontics  
Brief knowledge of correction of:
  - a. Mandibular Prognathism and Retrognathism
  - b. Maxillary Prognathism and Retrognathism
  - c. Anterior open bite and deep bite
  - d. Cross bite
20. Principle, Differential Diagnosis & Methods Of Treatment Of:
  1. Midline diastema
  2. Cross bite
  3. Open bite
  4. Deep bite
  5. Spacing
  6. Crowding
  7. Class II - Division 1, Division 2
  8. Class III Malocclusion - True and Pseudo Class III

## **21. Retention And Relapse**

Definition, Need for retention, Causes of relapse, Methods of retention, Different types of retention devices, Duration of retention, Theories of retention.

## **CLINICALS AND PRACTICALS IN ORTHODONTICS**

### **PRACTICAL TRAINING DURING II YEAR B.D.S.**

- I. Basic wire bending exercises Gauge 22 or 0.7mm
  1. Straightening of wires (4 Nos.)
  2. Bending of an equilateral triangle
  3. Bending of a rectangle
  4. Bending of a square
  5. Bending of a circle
  6. Bending of U.V.
- II. Construction of Clasps (Both sides upper/lower) Gauge 22 or 0.7mm
  1. 3/4 Clasp (C-Clasp)
  2. Full Clasp (Jackson's Crib)
  3. Adam's Clasp
  4. Triangular Clasp
- III. Construction of Springs (on upper both sides) Gauge 24 or 0.5mm
  1. Finger Spring
  2. Single Cantilever Spring
  3. Double Cantilever Spring (Z-Spring)
  4. T-Springs on premolars
    1. U - Loop canine retractor (Both sides on upper & lower)
    2. Helical canine retractor (Both sides on upper & lower)
    3. Buccal canine retractor:
      - Self supported buccal canine retractor with
        - a) Sleeve - 5mm wire or 24 gauge
        - b) Sleeve - 19 gauge needle on any one side.
    4. Palatal canine retractor on upper both sides  
Gauge 23 or 0.6mm
- V. Labial Bow  
Gauge 22 or 0.7mm  
One on both upper and lower

### **CLINICAL TRAINING DURING III YEAR B.D.S.**

#### **NO. EXERCISE**

1. Making upper Alginate impression
2. Making lower Alginate impression
3. Study Model preparation

4. Model Analysis
  - a. Pont's Analysis
  - b. Ashley Howe's Analysis
  - c. Carey's Analysis
  - d. Bolton's Analysis
  - e. Moyer's Mixed Dentition Analysis

**CLINICAL TRAINING DURING FINAL YEAR B.D.S.**

**NO. EXERCISE**

1. Case History taking
2. Case discussion
3. Discussion on the given topic
4. Cephalometric tracings
  - a. Down's Analysis
  - b. Steiner's Analysis
  - c. Tweed's Analysis

**PRACTICAL TRAINING DURING FINAL YEAR B.D.S.**

1. Adam's Clasp on Anterior teeth Gauge 0.7mm
2. Modified Adam's Clasp on upper arch Gauge 0.7mm
3. High Labial bow with Apron spring on upper arch  
(Gauge of Labial bow - 0.9mm, Apron spring - 0.3mm)
4. Coffin spring on upper arch Gauge 1mm

1. Upper & Lower Hawley's Appliance
2. Upper Hawley's with Anterior bite plane
3. Upper Habit breaking Appliance
4. Upper Hawley's with Posterior bite plane with 'Z' Spring
5. Construction of Activator
6. Lower inclined plane/Catalan's Appliance
7. Upper Expansion plate with Expansion Screw

**RECOMMENDED AND REFERENCE BOOKS**

- |  |                    |
|--|--------------------|
| 1. CONTEMPORARY ORTHODONTICS                 | WILLIAM R. PROFFIT |
| 2. ORTHODONTICS FOR DENTAL STUDENTS          | WHITE and GARDINER |
| 3. HANDBOOK OF ORTHODONTICS                  | MOYERS             |
| 4. ORTHODONTICS - PRINCIPLES AND PRACTICE    | GRABER             |
| 5. DESIGN, CONSTRUCTION AND USE OF REMOVABLE |                    |
| 6. ORTHODONTIC APPLIANCES                    | C. PHILIP ADAMS    |
| 7. CLINICAL ORTHODONTICS: VOL1 & 2           | SALZMANN           |

## **PAEDIATRIC & PREVENTIVE DENTISTRY (3<sup>rd</sup> & 4<sup>th</sup> yr)**

1. INTRODUCTION TO PEDODONTICS & PREVENTIVE DENTISTRY.
  - Definition, Scope, Objectives and Importance.
2. GROWTH & DEVELOPMENT:
  - Importance of study of growth and development in Pedodontics.
  - Prenatal and Postnatal factors in growth & development.
  - Theories of growth & development.
  - Development of maxilla and mandible and related age changes.
3. DEVELOPMENT OF OCCLUSION FROM BIRTH THROUGH ADOLESCENCE.
  - Study of variations and abnormalities.
4. DENTAL ANATOMY AND HISTOLOGY:
  - Development of teeth and associated structures.
  - Eruption and shedding of teeth.
  - Teething disorders and their management.
  - Chronology of eruption of teeth.
  - Differences between deciduous and permanent teeth.
  - Development of dentition from birth to adolescence.
  - Importance of first permanent molar.
5. DENTAL RADIOLOGY RELATED TO PEDODONTICS.
6. ORAL SURGICAL PROCEDURES IN CHILDREN.
  - Indications and contraindications of extractions of primary and permanent teeth in children.
  - Knowledge of Local and General Anesthesia.
  - Minor surgical procedures in children.
7. DENTAL CARIES:
  - Historical background.
  - Definition, aetiology & pathogenesis.
  - Caries pattern in primary, young permanent and permanent teeth in children.
  - Rampant caries, early childhood caries and extensive caries:  
Definition, aetiology, Pathogenesis, Clinical features, Complications & Management
  - Role of diet and nutrition in Dental Caries.
  - Dietary modifications & Diet counseling.
  - Caries activity, tests, caries prediction, caries susceptibility & their clinical application.
8. GINGIVAL & PERIODONTAL DISEASES IN CHILDREN.
  - Normal gingiva & periodontium in children.
  - Definition, aetiology & Pathogenesis.

- Prevention & Management of gingival & Periodontal diseases.
9. **CHILD PSYCHOLOGY:**
- Definition.
  - Theories of child psychology.
  - Psychological development of children with age.
  - Principles of psychological growth & development while managing child patient.
  - Dental fear and its management.
  - Factors affecting child's reaction to dental treatment.
10. **BEHAVIOUR MANAGEMENT:**
- Definitions.
  - Types of behaviour encountered in the dental clinic.
  - Non-pharmacological & pharmacological methods of Behaviour Management.
11. **PEDIATRIC OPERATIVE DENTISTRY:**
- Principles of Pediatric Operative Dentistry.
  - Modifications required for cavity preparation in primary and young permanent teeth.
  - Various Isolation Techniques.
  - Restorations of decayed primary, young permanent and permanent teeth in children using various restorative materials like Glass Ionomer, Composites & Silver Amalgam. Stainless steel, Polycarbonate & Resin Crowns.
12. **PEDIATRIC ENDODONTICS**
- Principles & Diagnosis.
  - Classification of Pulpal Pathology in primary, young permanent & permanent teeth.
  - Management of Pulpally involved primary, young permanent & permanent teeth.
    - Pulp capping – direct & indirect.
    - Pulpotomy
    - Pulpectomy
    - Apexogenesis
    - Apexification
  - Obturation Techniques & material used for primary, young permanent & Permanent teeth in children.
13. **TRAUMATIC INJURIES IN CHILDREN:**
- Classifications & Importance.
  - Sequelae & reaction of teeth to trauma.
  - Management of Traumatized teeth.
14. **PREVENTIVE & INTERCEPTIVE ORTHODONTICS:**
- Definitions.
  - Problems encountered during primary and mixed dentition phases & their management.
  - Serial extractions.
  - Space management.
15. **ORAL HABITS IN CHILDREN:**
- Definition, Aetiology & Classification.
  - Clinical features of digit sucking, tongue thrusting, mouth breathing & various other secondary habits.
  - Management of oral habits in children.
16. **DENTAL CARE OF CHILDREN WITH SPECIAL NEEDS:**
- Definition, Aetiology, Classification, Behavioural and Clinical features & Management of children with:
    - Physically handicapping conditions.
    - Mentally compromising conditions.
    - Medically compromising conditions.
    - Genetic disorders.
17. **CONGENITAL ABNORMALITIES IN CHILDREN:**
- Definition, Classification, Clinical features & Management.
18. **DENTAL EMERGENCIES IN CHILDREN & THEIR MANAGEMENT.**
19. **DENTAL MATERIALS USED IN PEDIATRIC DENTISTRY.**
20. **PREVENTIVE DENTISTRY:**
- Definition.
  - Principles & Scope.
  - Types of prevention.
  - Different preventive measures used in Pediatric Dentistry including pit and fissure sealants and caries vaccine.
21. **DENTAL HEALTH EDUCATION & SCHOOL DENTAL HEALTH PROGRAMMES.**
22. **FLUORIDES:**
- Historical background.
  - Systemic & Topical fluorides.
  - Mechanism of action.
  - Toxicity & Management.
  - Defluoridation techniques.
23. **CASE HISTORY RECORDING:**
- Outline of principles of examination, diagnosis & treatment planning.
24. **SETTING UP OF PEDODONTIC CLINIC.**
25. **ETHICS.**
- B. PRACTICALS:**

Following is the recommended clinical quota for under-graduate students in the subject of pediatric & preventive dentistry.



1. Restorations – Class I & II only : 45
2. Preventive measures e.g. Oral Prophylaxis – 20.
3. Fluoride applications – 10
4. Extractions – 25
5. Case History Recording & Treatment Planning – 10
6. Education & motivation of the patients using disclosing agents. Educating patients about oral hygiene measures like tooth brushing, flossing etc.

**BOOKS RECOMMENDED & REFERENCE:**

1. Pediatric Dentistry (Infancy through Adolescence) – Pinkham.
2. Kennedy's Pediatric Operative Dentistry – Kennedy & Curzon.
3. Occlusal guidance in Pediatric Dentistry – Stephen H. Wei.
4. Clinical Use of Fluorides – Stephen H. Wei.
5. Pediatric Oral & Maxillofacial Surgery – Kaban.
6. Pediatric Medical Emergencies – P. S. whatt.
7. Understanding of Dental Caries – Niki Foruk.
8. An Atlas of Glass Ionomer cements – G. J. Mount.
9. Clinical Pedodontics – Finn.
10. Textbook of Pediatric Dentistry – Braham Morris.
11. Primary Preventive Dentistry – Norman O. Harris.
12. Handbook of Clinical Pedodontics – Kenneth. D.
13. Preventive Dentistry – Forrester.
14. The Metabolism and Toxicity of Fluoride – Garry M. whitford.
15. Dentistry for the Child and Adolescence – Mc. Donald.
16. Pediatric Dentistry – Damle S. G.
17. Behaviour Management – Wright
18. Pediatric Dentistry – Mathewson.
19. Traumatic Injuries – andreason.
20. Occlusal guidance in Pediatric Dentistry – Nakata.
21. Pediatric Drug Therapy – Tomare
22. Contemporary Orhtodontics – Profitt..
23. Preventive Dentistry – Depaola.
24. Metabolism & Toxicity of Fluoride – whitford. G. M.
25. Endodontic Practice – Grossman.
26. Principles of Endodontics – Munford.
27. Endodontics – Ingle.
28. Pathways of Pulp – Cohen.
29. Management of Traumatized anterior Teeth – Hargreaves.

## **PUBLIC HEALTH DENTISTRY (3<sup>rd</sup> & 4<sup>th</sup> yr)**

1. Introduction to Dentistry: Definition of Dentistry, History of dentistry, Scope, aims and objectives of Dentistry.
  2. Public Health:
    - i. Health & Disease: - Concepts, Philosophy, Definition and Characteristics
    - ii. Public Health: - Definition & Concepts, History of public health
    - iii. General Epidemiology: - Definition, objectives, methods
    - iv. Environmental Health: - Concepts, principles, protection, sources, purification environmental sanitation of water disposal of waste sanitation, then role in mass disorder
    - v. Health Education: - Definition, concepts, principles, methods, and health education aids
    - vi. Public Health Administration: - Priority, establishment, manpower, private practice management, hospital management.
    - vii. Ethics and Jurisprudence: Professional liabilities, negligence, malpractice, consents, evidence, contracts, and methods of identification in forensic dentistry.
    - viii. Nutrition in oral diseases
    - ix. Behavioral science: Definition of sociology, anthropology and psychology and their in dental practice and community.
    - x. Health care delivery system: Center and state, oral health policy, primary health care, national programmes, health organizations.
1. Definition and difference between community and clinical health.
  2. Epidemiology of dental diseases-dental caries, periodontal diseases, malocclusion, dental fluorosis and oral cancer.
  3. Survey procedures: Planning, implementation and evaluation, WHO oral health survey methods 1997, indices for dental diseases.

4. Delivery of dental care: Dental auxiliaries, operational and non-operational, incremental and comprehensive health care, school dental health.
5. Payments of dental care: Methods of payments and dental insurance, government plans
6. Preventive Dentistry- definition, Levels, role of individual , community and profession, fluorides in dentistry, plaque control programmes.

1. Health Information: - Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes
2. Research Methodology: -Definition, types of research, designing a written protocol
3. Bio-Statistics: - Introduction, collection of data, presentation of data, Measures of Central tendency, measures of dispersion, Tests of significance, Sampling and sampling techniques- types, errors, bias, blind trails and calibration.

#### Practice Management

1. Place and locality
2. Premises & layout
3. Selection of equipments
4. Maintenance of records/accounts/audit.

Dentist Act 1948 with amendment.

Dental Council of India and State Dental Councils

Composition and responsibilities.

Indian Dental Association

Head Office, State, local and branches.

#### PRACTICALS/CLINICALS/FIELD PROGEAMME IN COMMUNITY DENTISTRY:

These exercises designed to help the student in IV year students:

1. Understand the community aspects of dentistry
2. To take up leadership role in solving community oral health programme

Exercises:

- a) Collection of statistical data (demographic) on population in India, birth rates, morbidity and mortality, literacy, per capita income
- b) Incidence and prevalence of common oral diseases like dental caries, periodontal disease, oral cancer, fluorosis at national and international levels
- c) Preparation of oral health education material posters, models, slides, lectures, play acting skits etc.
- d) Oral health status assessment of the community using indices and WHO basic oral health survey methods
- e) Exploring and planning setting of private dental clinics in rural, semi urban and urban locations, availment of finances for dental practices-preparing project report.
- f) Visit to primary health center-to acquaint with activities and primary health care delivery
- g) Visit to water purification plant/public health laboratory/ center for treatment of western and sewage water
- h) Visit to schools-to assess the oral health status of school children, emergency treatment and health education including possible preventive care at school (tooth brushing technique demonstration and oral rinse programme etc.)
- i) Visit to institution for the care of handicapped, physically, mentally, or medically compromised patients
- j) Preventive dentistry: in the department application of pit and fissure sealants, fluoride gel application procedure, A. R. T., Comprehensive health for 5 pts at least 2 patients

The colleges are encouraged to involve in the N.S.S. programme for college students for carrying out social work in rural areas

#### SUGGESTED INTERNSHIP PROGRAMME IN COMMUNITY DENTISTRY:

##### I. AT THE COLLEGE:

Students are posted to the department to get training in dental practice management.

- (a) Total oral health care approach- in order to prepare the new graduates in their approach to diagnosis, treatment planning, cost of treatment, prevention of treatment on schedule, recall maintenance of records etc. at least 10 patients (both children and adults of all types posting for at least one month).

- (b) The practice of chair side preventive dentistry including oral health education

##### II. AT THE COMMUNITY ORAL HEALTH CARE CENTRE (ADOPTED BY THE DENTAL COLLEGE IN RURAL AREAS)

Graduates posted for at least on month to familiarize in:

- (a) Survey methods, analysis and presentation of oral health assessment of school children and community independently using WHO basic oral health survey methods.

- (b) Participation in rural oral health education programmes

- (c) Stay in the village to understand the problems and life in rural areas

##### III. DESIRABLE: Learning use of computers-at least basic programme.

##### I. Index: Case History

- b) Oral hygiene indices simplified- Green and Vermilion
- c) Silness and Loe index for Plaque
- d) Loe and Silness index for gingival
- e) CPI
- f) DMF: T and S, df:t and s
- g) Deans fluoride index

#### II. Health Education

- 1. Make one - Audio visual aid
- 2. Make a health talk

#### III. Practical work

- 1. Pit and fissure sealant
- 2. Topical fluoride application

#### BOOKS RECOMMENDED & REFERENCE:

1. Dentistry Dental Practice and Community by David F. Striffler and Brain A. Burt, Edn. -1983, W. B. Saunders Company
2. Principles of Dental Public Health by James Morse Dunning, IV<sup>th</sup> Edition, 1986, Harward University Press.
3. Dental Public Health and Community Dentistry Ed by Anthony Jong Publication by The C. V. Mosby Company 1981
4. Community Oral Health-A system approach by Patricia P. Cormier and Joyce I. Levy published by Appleton-Century-Crofts/New York, 1981
5. Community Dentistry-A problem oriented approach by P. C. Dental Hand book series Vol.8 by Stephen L. Silverman and Ames F. Tryon, Series editor-Alvin F. Gardner, PSG Publishing company Inc. Littleton Massachuseltts, 1980.
6. Dental Public Health- An Introduction to Community Dentistry. Edition by Geoffrey L. Slack and Brain Burt, Published by John Wrigth and sons Bristol, 1980
7. Oral Health Surveys- Basic Methods, 4<sup>th</sup> edition, 1997, published by W. H. O. Geneva available at the regional office New Delhi.
8. Preventive Medicine and Hygiene-By Maxcy and Rosenau, published by Appleton Century Crofts, 1986.
9. Preventive Dentistry-by J. O. Forrest published by John Wright and sons Bristoli, 1980.
10. Preventive Dentistry by Murray, 1997.
11. Text Book of Preventive and Social Medicine by Park and park, 14<sup>th</sup> edition.
12. Community Dentistry by Dr. Soben Peter.
13. Introduction to Bio-statistics by B. K. Mahajan
14. Research methodology and Bio-statistics by
15. Introduction to Statistical Methods by Grewal

## PERIODONTOLOGY

1. Introduction: Definition of Periodontology, Periodontics, Periodontia, Brief historical background, Scope of Periodontics
2. Development of perio-dontal tissues, micro-structural anatomy and biology of periodontal tissues in detail Gingiva. Junctional epithelium in detail, Epithelial-Mesenchymal interaction, Periodontal, ligament Cementum, Alveolar bone.
3. Defensive mechanisms in the oral cavity: Role of-Epithelium, Gingival fluid, Saliva and other defensive mechanisms in the oral environment.
4. Age changes in periodontal structures and their significance in Geriatric dentistry      Age changes in teeth and periodontal structures and their association with periodontal diseases
5. Classification of periodontal diseases

1

Need for classification, Scientific basis of classification  
Classification of gingival and periodontal diseases as described  
in World Workshop 1989

Gingivitis:

Plaque associated, ANUG, steroid hormone influenced, Medication influenced, Desquamative gingivitis, other forms of gingivitis as in nutritional deficiency, bacterial and viral infections etc.

**Periodontitis:**

**Adult periodontitis, Rapidly progressive periodontitis A&B,  
Juvenile periodontitis(localized, generalized, and post-juvenile),  
Prepubertal periodontitis,  
Refractory periodontitis**

- |     |   |   |          |
|-----|---|---|----------|
| 6.  | <b>Gingival diseases</b>                      | <b>Localized and generalized gingivitis, Papillary, marginal and diffuse gingivitis</b><br><b>Etiology, pathogenesis, clinical signs, symptoms and management of</b> <ul style="list-style-type: none"><li>i) <b>Plaque associated gingivitis</b></li><li>ii) <b>Systemically aggravated gingivitis(sex hormones, drugs and systemic diseases)</b></li><li>iii) <b>ANUG</b></li><li>iv) <b>Desquamative gingivitis-Gingivitis associated with lichen planus, pemphigoid, pemphigus, and other vesiculobullous lesions</b></li><li>v) <b>Allergic gingivitis</b></li><li>vi) <b>Infective gingivitis-Herpetic, bacterial and candidial</b></li><li>vii) <b>Pericoronitis</b></li><li>viii) <b>Gingival enlargement (classification and differential diagnosis)</b></li></ul> | <b>6</b> |
| 7   | <b>Epidemiology of periodontal diseases</b>   | <ul style="list-style-type: none"><li>- <b>Definition of index, incidence, prevalence, epidemiology, endemic, epidemic, and pandemic</b></li><li>- <b>Classification of indices(Irreversible and reversible)</b></li><li>- <b>Deficiencies of earlier indices used in Periodontics</b></li><li>- <b>Detailed understanding of Silness &amp; Loe Plaque Index, Loe &amp; Silness Gingival Index, CPITN &amp; CPI.</b></li><li>- <b>Prevalence of periodontal diseases in India and other countries.</b></li><li>- <b>Public health significance(All these topics are covered at length under community dentistry. Hence, the topics may be discussed briefly. However, questions may be asked from the topics for examination</b></li></ul>                                  | <b>2</b> |
| 8.  | <b>Extension of inflammation from gingiva</b> | <b>Mechanism of spread of inflammation from gingival area to deeper periodontal structures</b>  | <b>1</b> |
| 9.  | <b>Pocket</b>                                 | <b>Factors that modify the spread</b><br><b>Definition, signs and symptoms, classification, pathogenesis, histopathology, root surface changes and contents of the pocket</b>   | <b>2</b> |
| 10. | <b>Etiology</b>                               | <ul style="list-style-type: none"><li>- <b>Dental Plaque (Biofilm)</b></li><li>- <b>Definition, New concept of biofilm</b></li><li>- <b>Types, composition, bacterial colonization, growth, maturation &amp; disclosing agents</b></li><li>- <b>Role of dental plaque in periodontal diseases</b></li><li>- <b>Plaque microorganisms in detail and bacteria associated with periodontal diseases</b></li><li>- <b>Plaque retentive factors</b></li><li>- <b>Materia alba</b></li><li>- <b>Food debris</b></li><li>- <b>Calculus</b></li><li>- <b>Definition</b></li></ul>   | <b>5</b> |

- Types, composition, attachment, theories of formation - Role of calculus in disease Food Impaction

- Definition
- Types, Etiology
- Hirschfelds' classification
- Signs ,symptoms &sequelae of treatment Trauma from occlusion

- Definition, Types
- Histopathological changes
- Role in periodontal disease
- Measures of management

in brief Habits

- Their periodontal significance
- Bruxism &parafunctional habits, tongue thrusting ,lip biting, occupational habits

**IATROGENIC FACTORS**

**Conservative Dentistry**

- Restorations
- Contact point, marginal ridge, surface roughness, overhanging restorations, interface between restoration and teeth

- Interrelationship
- Bridges and other prosthesis, pontics(types) ,surface contour, relationships of margins to the periodontium, Gingival protection theory, muscle action theory& theory of access to oral hygiene.

- Interrelationship, removable appliances &fixed appliances
- Retention of plaque, bacterial changes

- Diabetes, sex hormones, nutrition(Vit.C &proteins)
- AIDS & periodontium
- Hemorrhagic diseases, Leukemia, clotting factor disorders,PMN disorders

11.	Risk factors	Definition. Risk factors for periodontal diseases	1
12.	Host response	<ul style="list-style-type: none"> <li>- Mechanism of initiation and progression of periodontal diseases</li> <li>- Basic concepts about cells, Mast cells, neutrophils, macrophages, lymphocytes, immunoglobulins, complement system, immune mechanisms &amp; cytokines in brief</li> <li>- Stages in gingivitis-Initial, early, established &amp; advanced</li> <li>- Periodontal disease activity, continuous paradigm, random burst &amp; asynchronous multiple burst hypothesis</li> </ul>	3
13.	Periodontitis	<ul style="list-style-type: none"> <li>- Etiology ,histopathology, clinical signs &amp; symptoms, 6 diagnosis and treatment of adult periodontitis</li> <li>- Periodontal abscess; definition, classification, pathogenesis, differential diagnosis and treatment</li> <li>- Furcation involvement, Glickmans' classification, prognosis and management</li> <li>- Rapidly progressive periodontitis</li> <li>- Juvenile periodontitis: Localized and generalized</li> <li>- Post-juvenile periodontitis</li> </ul>	

14.	Diagnosis	<ul style="list-style-type: none"> <li>- Periodontitis associated with systemic diseases</li> <li>- Refractory periodontitis</li> <li>- Routine procedures, methods of probing, types of 2 probes,(According to case history)</li> <li>- Halitosis: Etiology and treatment. Mention advanced diagnostic aids and their role in brief.</li> </ul>	
15.	Prognosis	<ul style="list-style-type: none"> <li>- Definition, types, purpose and factors to be taken into consideration</li> </ul>	1
16.	Treatment plan	<ul style="list-style-type: none"> <li>- Factors to be considered</li> </ul>	1
17.	Periodontal therapy	<p>A. General principles of periodontal therapy. Phase I,II, III, IV therapy.</p> <p>Definition of periodontal regeneration, repair, new attachment and reattachment.</p> <p>B. Plaque control</p> <p>i. Mechanical tooth brushes, interdental cleaning aids, dentifrices</p> <p>ii. Chemical; classification and mechanism of action of each &amp; pocket irrigation</p>	3
18.	Pocket eradication procedures	<ul style="list-style-type: none"> <li>- Scaling and root planing:</li> <li>- Indications</li> <li>- Aims &amp; objectives</li> <li>- Healing following root planning</li> <li>- Hand instruments, sonic, ultrasonic &amp; piezo-electric scalers</li> <li>- Curettage &amp; present concepts</li> <li>- Definition</li> <li>- Indications</li> <li>- Aims &amp; objectives</li> <li>- Procedures &amp; healing response</li> <li>- Flap surgery</li> <li>- Definition</li> <li>- Types of flaps, Design of flaps, papilla preservation</li> </ul>	5
9.	Osseous Surgery	<ul style="list-style-type: none"> <li>- Indications &amp; Contraindications</li> <li>- Armamentarium</li> <li>- Surgical procedure &amp; healing Response</li> </ul> <p>Osseous defects in periodontal disease</p> <ul style="list-style-type: none"> <li>- Definition</li> <li>- Classification</li> <li>- Surgery: resective, additive osseous surgery (osseous grafts with classification of grafts)</li> <li>- Healing responses</li> <li>- Other regenerative procedures; root conditioning</li> <li>- Guided tissue regeneration</li> </ul>	2
20.	Mucogingival surgery & periodontal plastic surgeries	<p>Definition</p> <p>Mucogingival problems: etiology, classification of gingival recession (P.D. Miller Jr. and Sullivan and Atkins)</p> <p>Indications &amp; objectives</p> <p>Gingival extension procedures: lateral pedicle graft, frenectomy, frenotomy</p> <p>Crown lengthening procedures</p>	3

21.	Splints	Periodontal microsurgery in brief - Periodontal splints - Purpose & classification - Principles of splinting	1
22.	Hypersensitivity	Causes, Theories & management	1
23.	Implants	Definition, types, scope & biomaterials used. Periodontal considerations: such as implant-bone interface, implant-gingiva interface, implant failure, peri-implantitis & management	1
24.	Maintenance phase (SPT)	- Aims, objectives, and principles - Importance - Procedures - Maintenance of implants	1
25.	Pharmaco-therapy	- Periodontal dressings - Antibiotics & anti-inflammatory drugs - Local drug delivery systems	2
26.	Periodontal management of medically compromised patients	Topics concerning periodontal management of medically compromised patients	1
27.	Inter-disciplinary care	- Pulpo-periodontal involvement - Routes of spread of infection - Simons' classification - Management	1
28.	Systemic effects of periodontal diseases in brief	Cardiovascular diseases, Low birth weight babies etc.	1
29.	Infection control protocol	Sterilization and various aseptic procedures	1
30.	Ethics		

**TUTORIALS DURING CLINICAL POSTING;**

1. Infection control
2. Periodontal instruments
3. Chair position and principles of instrumentation
4. Maintenance of instruments (sharpening)
5. Ultrasonic, Piezoelectric and sonic scaling – demonstration of technique
6. Diagnosis of periodontal disease and determination of prognosis
7. Radiographic interpretation and lab investigations
8. Motivation of patients- oral hygiene instructions

Students should be able to record a detailed periodontal case history, determine diagnosis, prognosis and plan treatment. Student should perform scaling, root planning local drug delivery and SPT. Shall be given demonstration of all periodontal surgical procedures.

**DEMONSTRATIONS:**

1. History taking and clinical examination of the patients
2. Recording different indices
3. Methods of using various scaling and surgical instruments
4. Polishing the teeth
5. Bacterial smear taking
6. Demonstration to patients about different oral hygiene aids
7. Surgical procedures- gingivectomy, gingivoplasty, and flap operations
8. Follow up procedures, post operative care and supervision

**REQUIREMENTS:**

1. Diagnosis, treatment planning and discussion and total periodontal treatment – 25 cases
2. Dental scaling, oral hygiene instructions – 50 complete cases/ equivalent

3. Assistance in periodontal surgery – 5 cases
4. A work record should be maintained by all the students and should be submitted at the time of examination after due certification from the head of the department.

Students should have to complete the work prescribed by the concerned department from time to time and submit a certified record for evaluation.

**PRESCRIBED BOOK:**

1. Glickman's Clinical Periodontology —

**Carranza REFERENCE BOOKS**

1. Essentials of Periodontology and periodontics- Torquil MacPhee
2. Contemporary periodontics- Cohen
3. Periodontal therapy- Goldman
4. Orbans' periodontics- Orban
5. Oral Health Survey- W.H.O.
6. Preventive Periodontics- Young and Stiffler
7. Public Health Dentistry- Slack
8. Advanced Periodontal Disease- John Prichard
9. Preventive Dentistry- Forrest
10. Clinical Periodontology- Jan Lindhe
11. Periodontics- Baer & Morris.

## **PROSTHODONTICS AND CROWN & BRIDGE (3<sup>rd</sup> & 4<sup>th</sup> yr)**

**Complete Dentures**

- A. Applied Anatomy and Physiology.
  1. Introduction
  2. Biomechanics of the edentulous state.
  3. Residual ridge resorption.
- B. Communicating with the patient
  1. Understanding the patients. Mental attitude.
  2. Instructing the patient.
- C. Diagnosis and treatment planning for patients-
  1. With some teeth remaining.
  2. With no teeth remaining.
    - a) Systemic status.
    - b) Local factor.
    - c) The geriatric patient.
    - d) Diagnostic procedures.
- D. Articulators- discussion
- E. Improving the patient's denture foundation and ridge relation -an overview.
  - a) Pre-operative examination.
  - b) Initial hard tissue & soft tissue procedure.
  - c) Secondary hard & soft tissue procedure.
  - d) Implant procedure.
  - e) Congenital deformities.
  - f) Postoperative procedure.
- F. Principles of Retention, Support and Stability
- G. Impressions - detail.
  - a) Muscles of facial expression.



- b) Biologic considerations for maxillary and mandibular impression including anatomy landmark and their interpretation.
  - c) Impression objectives.
  - d) Impression materials.
  - e) Impression techniques.
  - f) Maxillary and mandibular impression procedures.
    - i. Preliminary impressions.
    - ii. Final impressions.
  - g) Laboratory procedures involved with impression making (Beading & Boxing, and cast preparation).
- H. Record bases and occlusion rims- in detail.**
- a) Materials & techniques.
  - b) Useful guidelines and ideal parameters.
  - c) Recording and transferring bases and occlusal rims.
- I. Biological consideration in jaw relation & jaw movements - craniomandibular relations.**
- a) Mandibular movements.
  - b) Maxillo -mandibular relation including vertical and horizontal jaw relations.
  - c) Concept of occlusion- discuss in brief.
- J. Relating the patient to the articulator.**
- a) Face bow types & uses– discuss in brief.
  - b) Face bow transfer procedure - discuss in brief.
- K. Recording maxillo mandibular relation.**
- a) Vertical relations.
  - b) Centric relation records.
  - c) Eccentric relation records.
  - d) Lateral relation records.
- L. Tooth selection and arrangement.**
- a) Anterior teeth.
  - b) Posterior teeth.
  - c) Esthetic and functional harmony.
- M. Relating inclination of teeth to concept of occlusion- in brief.**
- a) Neutrocentric concept.
  - b) Balanced occlusal concept.
- N. Trial dentures.**
- O. Laboratory procedures.**
- a) Wax contouring.
  - b) Investing of dentures.
  - c) Preparing of mold.
  - d) Preparing & packing acrylic resin.
  - e) Processing of dentures.
  - f) Recovery of dentures.
  - g) Lab remount procedures.
  - h) Recovering the complete denture from the cast.
  - i) Finishing and polishing the complete denture.
  - j) Plaster cast for clinical denture remount procedure.
- P. Denture insertion.**
- a) Insertion procedures.
  - b) Clinical errors.
  - c) Correcting occlusal disharmony.
  - d) Selective grinding procedures.
- R. Treating problems with associated denture use – discuss in brief (tabulation/flow-chart form).**
- S. Treating abused tissues - discuss in brief.**
- T. Relining and rebasing of dentures- discuss in brief.**

- V. Immediate complete dentures construction procedure- discuss in brief.
- W. The single complete denture- discuss in brief.
- X. Overdentures denture- discuss in brief.
- Y. Dental implants in complete denture - discuss in brief.

**Note :** It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover –

1. Definition
2. Diagnosis (of the particular situation/patient selection/treatment planning)
3. Types / Classification
4. Materials
5. Methodology – Lab /Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase
9. Oral Implantology
10. Ethics

#### **Removable Flexible Dentures**

1. Introduction  
Terminologies and scope
2. Classification.
3. Examination, Diagnosis & Treatment planning & evaluation of diagnostic data.
4. Components of a removable partial denture. Major connectors, minor connector s, Rest and rest seats.
5. Components of a Removable Partial Denture. Direct retainers, Indirect retainers, Tooth replaceme nt.
6. Principles of Removable Partial Denture Design.
7. Survey and design  
– in brief.  
Surveyors.  
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8. Mouth preparation and master cast.
9. Impression materials and procedures for removable partial dentures.
10. Preliminary jaw relation and esthetic try-in for some anterior replacement teeth.
11. Laboratory procedures for framework construction-in brief.
12. Fitting the framework - in brief.
13. Try-in of the partial denture - in brief.
14. Completion of the partial denture - in brief.
15. Inserting the Removable Partial Denture - in brief.
16. Postinsertion observations.
17. Temporary Acrylic Partial Dentures.
18. Immediate Removable Partial Denture.
19. Removable Partial Dentures opposing Complete denture.

**Note :** It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover –

1. Definition
2. Diagnosis (of the particular situation /patient selection /treatment planning)
3. Types / Classification
4. Materials
5. Methodology – Lab /Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase

#### **Fixed Partial Dentures**

##### **Topics To Be Covered In Detail -**

1. Introduction
2. Fundamentals of occlusion – in brief.
3. Articulators – in brief.
4. Treatment planning for single tooth restorations.
5. Treatment planning for the replacement of missing teeth including selection and choice of abutment teeth.
6. Fixed partial denture configurations.
7. Principles of tooth preparations.
8. Preparations for full veneer crowns – in detail.
9. Preparations for partial veneer crowns – in brief.
10. Provisional Restorations
11. Fluid Control and Soft Tissue Management
12. Impressions
13. Working Casts and Dies
14. Wax Patterns
15. Pontics and Edentulous Ridges
16. Esthetic Considerations
17. Finishing and Cementation

##### **Topics To Be Covered In Brief -**

1. Solder Joints and Other Connectors
2. All - Ceramic Restorations
3. Metal - Ceramic Restorations
4. Preparations of intracoronal restorations.
5. Preparations for extensively damaged teeth.

6. Preparations for periodontally weakened teeth
7. The Functionally Generated Path Technique
8. Investing and Casting
9. Resin - Bonded Fixed Partial Denture

Note : It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover –

1. Definition
2. Diagnosis (of the particular situation /patient selection /treatment planning)
3. Types / Classification
4. Materials
5. Methodology – Lab /Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase

#### RECOMMENDED BOOKS:

1. Syllabus of Complete denture by - Charles M. Heartwell Jr. and Arthur O. Rahn.
2. Boucher's "Prosthodontic treatment for edentulous patients"
3. Essentials of complete denture prosthodontics by – Sheldon Winkler.
4. Maxillofacial prosthetics by – William R. Laney.
5. McCracken's Removable partial prosthodontics
6. Removable partial prosthodontics by – Ernest L. Miller and Joseph E. Grasso.

## AESTHETIC DENTISTRY

Aesthetic Dentistry is gaining more popularity since last decade. It is better that undergraduate students should understand the philosophy and scientific knowledge of the esthetic dentistry.

1. Introduction and scope of esthetic dentistry
2. Anatomy & physiology of smile
3. Role of the colour in esthetic dentistry
4. Simple procedures (roundening of central incisors to enhance esthetic appearance)
5. Bleaching of teeth
6. Veneers with various materials
7. Preventive and interceptive esthetics
8. Ceramics
9. Simple gingival contouring to enhance the appearance
10. Simple clinical procedures for BDS students

#### Recommended books:

1. Esthetic guidelines for restorative dentistry; Scharer & others
2. Esthetics of anterior fixed prosthodontics; Chiche (GJ) & Pinault (Alain)
3. Esthetic & the treatment of facial form, Vol 28; Mc Namara (JA)

## FORENSIC ODONTOLOGY

1. Introduction to forensic dentistry Definition and history  
Recent developments and future trends
2. Overview of forensic medicine and toxicology Cause of death and postmortem changes

## **Toxicological manifestations in teeth and oral tissues**

### **3. Dental**

**identi-  
fication**

**Definiti-  
on**

**Basis for dental  
identification**

**Postmortem  
procedures**

**Dental record compilation and interpretation**

**Comparison of data, and principles of report writing**

**Identification in disasters and handling incinerated  
remains Postmortem changes to oral structures**

### **4. Maintaining dental records**

**Basic aspects of good record-  
keeping Different types of  
dental records**

- **Dental charts**
- **Dental radiographs**
- **Study casts**
- **Denture marking**
- **Photographs**

**Dental notations**

**Relevance of dental records in forensic investigation**

### **5. Age estimation**

**Age estimation in children and adolescents**

- **Advantages of tooth calcification over 'eruption' in estimating age**
- **Radiographic methods of Schour & Massler,**

**Demirjian et al Age estimation in adults**

- **Histological methods – Gustafson's six variables and Johanson's modification, Bang**
- & Ramm's dentine translucency**

- **Radiographic method of**
- Kvaal et al Principles of report**
- writing**

### **6. Sex differentiation**

**Sexual dimorphism in tooth dimensions (Odontometrics)**

### **7. Ethnic variations ('racial' differences) in tooth**

**morphology Description of human population  
groups**

**Genetic and environmental influences on tooth morphology**

**Description of metric and non-metric dental features used in ethnic differentiation**

### **8. Bite mark procedures**

**Definition and classification**

**Basis for bite mark  
investigation Bite mark  
appearance**

**Macroscopic and microscopic ageing of bite marks**

**Evidence collection from the victim and suspect of  
bite mark Analysis and comparison**

**Principles of  
report writing**

**Animal bite  
investigation**

**9. Dental DNA methods**

Importance of dental DNA evidence in forensic investigations  
Types of DNA and dental DNA isolation procedures  
DNA analysis in personal identification  
Gene-linked sex dimorphism

Population genetics

**10. Jurisprudence and ethics**

Fundamentals of law and the constitution

Medical legislation and statutes (Dental and Medical Council Acts, etc)

Basics of civil law (including torts, contracts and consumer protection act)  
Criminal and civil procedure code (including expert witness requirement)  
Assessment and quantification of dental injuries in courts of law

Medical negligence and liability

Informed consent and confidentiality

Rights and duties of doctors and patients

Medical and dental ethics (as per Dentists' Act)

Theory sessions and practical exercises

Total hours for the course

Didactic – 10-12 hours

Practical – 20-25 hours

Detailed didactic sessions for the above components, either in the form of lectures or as structured student-teacher interactions, is essential. Specialists from multiple disciplines, particularly from legal and forensic sciences, can be encouraged to undertake teaching in their area of expertise.

An interactive, navigable and non-linear (INN) model may also be utilised for education.

Practical exercises (real-life casework and/or simulated cases) must complement didactic sessions to facilitate optimal student understanding of the subject. Mandatory practical training in dental identification methods, dental profiling (ethnic and sex differences, radiographic age estimation), and bite mark procedures, is of paramount importance. In addition, practical exercises/demonstrations in histological age estimation, comparative dental anatomy, DNA methods, medical autopsy, court visits, and other topics may be conducted depending on available expertise, equipment and feasibility.

Approach to teaching forensic odontology

Forensic odontology could be covered in two separate streams. The divisions include a preclinical stream and a clinical stream.

Preclinical stream

Introduction to forensic odontology  
Sex differences in odontometrics

Ethnic variations in tooth morphology  
Histological age estimation

Dental DNA methods

Bite marks procedures

Overview of forensic medicine and toxicology

It could prove useful to undertake the preclinical stream in II or III year under Oral Biology/Oral Pathology since these aspects of forensic odontology require grounding in dental morphology, dental histology and basic sciences, which, students would have obtained in I and/or II BDS.

#### **Clinical stream**

##### **Dental identification**

Maintaining dental records

Radiographic age estimation

##### **Medical jurisprudence and ethics**

It would be suitable to undertake these topics in the IV or V year as part of Oral Medicine and Radiology, since students require reasonable clinical exposure and acumen to interpret dental records, perform dental postmortems and analyse dental radiographs for age estimation.

## **ORAL IMPLANTOLOGY**

1. History of implants, their design & surface characteristics and osseo-integration
2. Scope of oral & maxillofacial implantology & terminologies
3. A brief introduction to various implant systems in practice
4. Bone biology, Morphology, Classification of bone and its relevance to implant treatment and bone augmentation materials.
5. Soft tissue considerations in implant dentistry
6. Diagnosis & treatment planning in implant dentistry  
Case history taking/Examination/Medical evaluation/Orofacial evaluation/ Radiographic evaluation/ Diagnostic evaluation/ Diagnosis and treatment planning/ treatment alternatives/ Estimation of treatment costs/ patient education and motivation
7. Pre surgical preparation of patient
8. Implant installation & armamentarium for the Branemark system as a role model
9. First stage surgery – Mandible – Maxilla
10. Healing period & second stage surgery
11. Management of surgical complications & failures
12. General considerations in prosthodontic reconstruction & Bio mechanics
13. Prosthodontic components of the Branemark system as a role model
14. Impression procedures & Preparation of master cast
15. Jaw relation records and construction of suprastructure with special emphasis on occlusion for osseointegrated prosthesis
16. Management of prosthodontic complications & failures
17. Recall & maintenance phase.

Criteria for success of osseointegrated implant supported prosthesis

#### **SUGGESTED BOOKS FOR READING**

1. Contemporary Implant Dentistry - Carl .E. Misch  
Mosby 1993 First Edition.
2. Osseointegration and Occlusal Rehabilitation Hobo S., Ichida. E. and Garcia L.T.  
Quintessence Publishing Company, 1989  
First Edition.

## **BEHAVIOURAL SCIENCES**

## PSYCHOLOGY:

1. **Definition & Need of Behavioural Science. Determinants of Behaviour.** Hrs 1 Scope of Behavioural Science.
2. **Sensory process & perception perceptual process- clinical applications.**
3. **Attention - Definition - factors that determine attention. Clinical application.**
4. **Memory - Memory process - Types of memory , Forgetting: Methods to improve memory, Clinical assessment of memory & clinical applications.**
5. **Definition - Laws of learning**  
Type of learning. Classical conditioning, operant conditioning, cognitive learning, learning, social learning, observational learning, principles of learning– Clinical application. Insight
6. **Intelligence- Definition: Nature of intelligence stability of intelligence Determinants of intelligence, clinical application**
7. **Thinking - Definition: Types of thinking, delusions, problem solving**
8. **Motivation - Definition: Motive, drive, needs classification of motives**
9. **Emotions - Definition differentiation from feelings – Role of hypothalamus, Cerebral cortex, adrenal glands ANS. Theories of emotion, Types of emotions.**  
Personality. Assessment of personality: Questionnaires, personality inventory, rating scales, Interview projective techniques – Rorshach ink blot test , RAT, CAT

## SOCIOLOGY:

Social class, social groups – family, types of family, types of marriages, communities and Nations and institutions.

## REFERENCE BOOKS:

1. General psychology -- S.K. Mangal
2. General psychology -- Hans Raj, Bhatia
3. General psychology -- Munn
4. Behavioural Sciences in Medical practise -- Manju Mehta
5. Sciences basic to psychiatry -- Basanth Puri & Peter J Tyrer

# ETHICS

## Introduction to ethics –

- what is ethics?
- What are values and norms?
- How to form a value system in one's personal and professional life?
- Hippocratic oath.
- Declaration of Helsinki, WHO declaration of Geneva, International code of ethics, DCI Code of ethics.

## Ethics of the individual –

The patient as a person.  
Right to be respected  
Truth and confidentiality  
Autonomy of decision  
Doctor Patient relationship

## Profession Ethics –

Code of conduct  
Contract and confidentiality  
Charging of fees, fee splitting  
Prescription of drugs  
Over-investigating the patient  
Malpractice and negligence



**Research Ethics –**

**Animal and experimental research/humanness  
Human experimentation  
Human volunteer research-informed consent  
Drug trials**

**Ethical workshop of cases**

**Gathering all scientific factors**

**Gathering all value factors**

**Identifying areas of value – conflict, setting of priorities**

**Working our criteria towards decisions**

**Recommended Reading:**

**Medical Ethics, Francis C.M., I Ed. 1993, Jaypee Brothers, New Delhi p. 189.**