

PANJAB UNIVER
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9. Study of embryology models
10. Audio-visual aids

Throughout the course, particular emphasis is placed on the functional correlation, clinical application & on integration with teaching in other bio dental disciplines.

D A I L I E F H E C I E C E

1. General anatomy: Introduction of anatomical terms and brief outline of various systems of the body.
2. Regional anatomy of head & neck with osteology of bones of head & neck, with emphasis on topics of dental importance.
3. General disposition of thoracic, abdominal & pelvic organs.
4. The regional anatomy of the sites of intramuscular & intra vascular injections, & lumbar puncture.
5. General embryology & systemic embryology with respect to development of head & neck.
6. Histology of basic tissues and of the organs of gastrointestinal, respiratory, Endocrine, excretory systems & gonads.
7. Medical genetics.

E F I L I E D E A I L F H E C I E

I.

3. Coronary arteries
4. Pericardium
5. Lungs – surfaces ; pleural cavity
6. Diaphragm

IV. ABDOMEN : Demonstration on a dissected specimen of

- 1.

HI 1 A HY I L GY

Lactation, composition of milk, factors controlling lactation, milk ejection, reflex, Male reproductive system :spermatogenesis, semen and contraception.

9. CARDIO VASCULAR SYSTEM

Functional anatomy and innervation of heart Properties of cardiac muscle rigin & propagation of cardiac impulse and heart block.

Electrocardiogram - Normal electrocardiogram. Two changes in ECG in myocardial infarction.

Cardiac cycle - Phases, Pressure changes in atria, ventricles & aorta.

Volume changes in ventricles. Jugular venous pulse, arterial pulse.

Heart sounds: Mention of murmurs.

Heart rate: Normal value, variation & regulation.

Cardiac output: Definition, normal values, one method of determination, variation, factors affecting heart rate and stroke volume.

Arterial blood pressure: Definition, normal values & variations, determinants, regulation & measurement of blood pressure.

Coronary circulation.

Cardio vascular homeostasis - Exercise & posture.

10. RESPIRATORY SYSTEM

Enzymatic hydrolysis of dietary carbohydrates. Mechanism of uptake of monosaccharides. Digestion and absorption of triacylglycerols. Enzymatic hydrolysis of dietary proteins and uptake of amino acids.

IC IE

Vitamins: Definition, classification, daily requirement, sources and deficiency symptoms. Brief account of water-soluble vitamins with biochemical functions. Vitamin A functions including visual process. Vitamin D and its role in calcium metabolism. Vitamin E. Vitamin K and gamma carboxylation. Introduction to antivitamins and hypervitaminosis.

Minerals :Classification, daily requirement. Calcium and phosphate: sources, uptake, excretion,

function. Serum calcium regulation. Iron: sources, uptake and transport.

Heme and nonheme iron functions; deficiency. Iodine: Brief introduction to thyroxine synthesis. General functions of thyroxine. Fluoride: function, deficiency and excess. Indications of role of other minerals.

E E GY E AB LI

Overview: Outlines of glycolysis, pyruvate oxidation and citric acid cycle. Beta oxidation of fatty

3. Detailed microscopic study of Oral Mucosa, variation in structure in relation to functional requirements, mechanisms of keratinization, clinical parts of gingiva, Dentogingival & Mucocutaneous junctions & lingual papillae. Age changes & clinical considerations.
4. Salivary Glands :
 - Detailed microscopic study of acini & ductal system.
 - Age changes & clinical considerations.
5. TM Joint:
 - Review of basic anatomical aspects & microscopic study & clinical considerations.
6. Maxillary Sinus:
 - Microscopic study, anatomical variations, functions & clinical relevance of maxillary sinus in dental practice.
7. Processing of Hard & soft tissues for microscopic study :
 - Ground sections, decalcified sections & routine staining procedures.
8. Basic histochemical staining patterns of oral tissues.

I A L H Y I L G Y

1. Saliva : livas

G·n·ra at o·o yAI

At the end of the course the student should be competent to:

Apply the scientific study of disease processes, which result in morphological and functional alterations in cells, tissues and organs to the study of pathology and the practice of dentistry.

BJEC I E

Enabling the student

1. To demonstrate and apply basic facts, concepts and theories in the field of Pathology.
2. To recognize and analyze pathological changes at macroscopically and microscopical levels and explain their observations in terms of disease processes.
3. To Integrate knowledge from the basic sciences, clinical medicine and dentistry in the study of Pathology.
4. To demonstrate understanding of the capabilities and limitations of morphological Pathology in its contribution to medicine, dentistry and biological research.
5. To demonstrate ability to consult resource materials outside lectures, laboratory and tutorial classes.

C I E C EA G·n·ra at o·o y

1. Introduction to Pathology Terminologies
 - The cell in health
 - The normal cell structure
 - The cellular functions
2. Aetiology and Pathogenesis of Disease
 - Cell Injury
 - Types – Congenital
 - Acquired
 - Mainly Acquired causes of disease
(Hypoxic injury, chemical injury, physical injury, immunological injury)
3. Degenerations
 - Amyloidosis
 - Fatty change
 - Cloudy swelling
 - Hyaline change, mucoid degeneration
4. Cell death & Necrosis
 - Apoptosis
 - Def, causes, features and types of necrosis
 - Gangrene - Dry, wet, gas
 - Pathological Calcifications
(Dystrophic and metastatic)
5. Inflammation
 - Definition, causes types, and features
 - Acute inflammation
 - a. The vascular response
 - b. The cellular response
 - c. Chemical mediators
 - d. The inflammatory cells
 - e. Fate
 - Chronic inflammation
 - Granulomatous inflammation

6. Healing
 - Regeneration
Repair
 - a. Mechanisms
 - b. Healing by primary intention
 - c. Healing by secondary intention
 - d. Fracture healing
 - e. Factors influencing healing process
 - f. Complications
7. Tuberculosis
 - Epidemiology
 - Pathogenesis (Formation of tubercle)
 - Pathological features of Primary and secondary TB
 - Complications and Fate
8. Syphilis
 - Epidemiology
 - Types and stages of syphilis
 - Pathological features
 - Diagnostic criterias
 - Oral lesions
9. Typhoid
 - Epidemiology
 - Pathogenesis
 - Pathological features
 - Diagnostic criterias
10. Thrombosis
 - Definition, Pathophysiology
 - Formation, complications & Fate of a thrombus
11. Embolism
 - Definition
 - Types
 - Effects
12. Ischaemia and Infraction
 - Definition, etiology, types
 - Infraction of various organs
13. Derangements of body fluids
 - Oedema – pathogenesis
Different types
14. Disorders of circulation
 - Hyperaemia
 - Shock
15. Nutritional Disorders
 - Common Vitamin Deficiencies
16. Immunological mechanisms in disease
 - Humoral & cellular immunity
 - Hypersensitivity & autoimmunity
17. AIDS and Hepatitis.
18. Hypertension
 - Definition, classification
 - Pathophysiology
 - Effects in various organs
19. Diabetes Mellitus

- Def, Classification, Pathogenesis, Pathology in different organs
- 20. Adaptive disorders of growth
 - Atrophy & Hypertrophy, Hyperplasia, Metaplasia and Dysplasia
- 21. General Aspects of neoplasia
 - a. Definition, terminology, classification
 - b. Differences between benign and malignant neoplasms
 - c. The neoplastic cell
 - d. Metastasis
 - e. Etiology and pathogenesis of neoplasia, Carcinogenesis
 - f. Tumour biology
 - g. Oncogenes and anti-oncogenes
 - h. Diagnosis
 - i. Precancerous lesions
 - j. Common specific tumours, Sq papilloma & Ca, Basal cell Carcinoma, Adenoma & Adenoca, Fibroma & Fibrosarcoma, Lipoma and liposarcoma

B y s t c a t o o y

22. Anaemias
 - Iron Deficiency anaemia, Megaloblastic anaemia
23. Leukaemias
 - Acute and chronic leukaemias, Diagnosis and clinical features
24. Diseases of Lymph nodes
 - Hodgkin's disease, Non Hodgkins lymphoma, Metastatic carcinoma
25. Diseases of oral cavity
 - Lichen planus, Stomatitis, Leukoplakia, Squamous cell Carcinoma, Dental caries, Dentigerous cyst, Ameloblastoma
26. Diseases of salivary glands
 - Normal structure, Sialadenitis, Tumours
27. Common diseases of Bones
 - Osteomyelitis, Metabolic bone diseases, Bone Tumours, Osteosarcoma, Osteocalstoma, Giant cell Tumour, Ewing's sarcoma, Fibrous dysplasia, Aneurysmal bone cyst
28. Diseases of Cardiovascular system
 - Cardiac failuare
 - Congenital heart disease – ASD, VSD, PDA
 -

7. Bleeding Time & clotting Time
8. Histopathology
 - Tissue Processing
 - Staining
9. Histopathology slides
 - Acute appendicitis, Granulation tissue, fatty liver
10. Histopathology slides
 - CVC lung, CVC liver, Kidney amyloidosis
11. Histopathology slides
 - Tuberculosis, Actinomycosis, Rhinosporidiosis
12. Histopathology slides
 - Papilloma, Basal cell Ca, Sq cell Ca
13. Histopathology slides
 - Osteosarcoma, osteoclastoma, fibrosarcoma
14. Histopathology slides
 - Malignant melanoma, Ameloblastoma, Adenoma
15. Histopathology slides
 - Mixed parotid tumour, metastatic carcinoma in lymph node

List of textbooks

1. Robbins – Pathologic Basis of Disease Cotran, Kumar, Robbins
2. Anderson's Pathology Vol 1 & 2 Editors – Ivan Damjanov & James Linder
3. Wintrobe's clinical Haematology Lee, Bithell, Foerster, Athens, Lukens

MICROBIOLOGY

Aims

To introduce the students to the exciting world of microbes. To make the students aware of various branches of microbiology, importance, significance and contribution of each branch to mankind and other fields of medicine. The objectives of teaching microbiology can be achieved by various teaching techniques such as:

- a) Lectures
- b) Lecture Demonstrations
- c) Practical exercises
- d) Audio visual aids
- e) Small group discussions with regular feed back from the students.

BEFORE

At the end of the Microbiology course the student should be able to

At the end of the Microbiology course the student should be able to

A brief synopsis is given as follows

GENERAL BILGY

1. History, Introduction, Scope, Aims and Objectives.
2. Morphology and Physiology of bacteria.
3. Detail account of Sterilisation and Disinfection.
4. Brief account of Culture media and Culture techniques.
5. Basic knowledge of selection, collection, transport, processing of clinical Specimens and identification of bacteria.
6. Bacterial Genetics and Drug Resistance in bacteria.

IMMUNOLOGY

1. Infection - Definition, Classification, Source, Mode of transmission and types of Infectious disease.
2. Immunity
- 3.

2.

emerged from art to empirical status of science as more information through further research becomes available. It is also the aim of the course of Dental materials to provide with certain criteria of selection and which will enable to discriminate between facts and propaganda with regards to claims of manufactures.

BJEC I E

To understand the evolution and development of science of dental material.

To explain purpose of course in dental materials to personnels concerned with the profession of the dentistry. Knowledge of physical and chemical properties. Knowledge of biomechanical requirements of particular restorative procedure. An intelligent compromise of the conflicting as well as co-ordinating factors into the desired Ernest. Laying down standards or specifications of various materials to guide to manufacturers as well as to help professionals.

Search for newer and better materials which may answer our requirements with greater satisfaction. To understand and evaluate the claims made by manufactures of dental materials

EED F HEC I E

The profession has to rise from an art to a science, , the need for the dentist to possess adequate knowledge of materials to exercises his best through knowledge of properties of different types of materials. The growing concern of health hazards due to mercury toxicity, inhalation of certain vapour or dust materials, irritations and allergic reaction to skin due to contact of materials. Materials causing irritation of oral tissues, pH of restorative materials causing inflammation and necrosis of pulp which is a cause for the dentist to posses wider knowledge of physical, chemical and biological properties of materials being used. For the protection for the patient and his own protection certain criteria of selection are provided that will enable the dentist to discriminate between facts and propaganda, which will make a material biologically accept.

C E

values, chroma, Munsell system, metamersim, fluorescence, physical properties of tooth, stress during mastication

B I O L O G I C A L C O N S I D E R A T I O N S I N F D E A L T H A E I A L

Materials used are with the knowledge of appreciation of certain biological considerations for use in oral cavity. Requirement of materials with biological compatibility

Cements: Silicate, Glass ionomer, metal modified glass ionomer, resin modified glass ionomer, zinc oxide eugenol, modified zinc oxide eugenol, zinc phosphate, zinc silico phosphate, zinc poly carboxylate, Cavity liners and cement bases, Varnishes Calcium hydroxide, Gutta percha

Application, classification (general and individual), setting mechanism, mode of supply, Properties, factors affecting setting, special emphasis on critical procedures of manipulation and protection of cement, mode of adhesion, biomechanism of caries inhibition.

Agents for pulpal protection., Modifications and recent advances, Principles of cementation. Special emphasis on cavity liners and cement bases

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3. Preparation class I and extended class I and class II and MOD's and class V amounting to 10 exercises in plaster models.

- Waxing, carving and polishing
 - Flasking of waxed dentures
 - Dewaxing of denture moulds
 - Packing of heat cured acrylic resin in the dewaxed plaster mould
 - Curing of dentures
 - Deflasking
 - Laboratory remount
 - Finishing and polishing of acrylic complete dentures
 - Repair of acrylic dentures
 - Relining of denture
3. Removable partial dentures
- Introduction
 - Kennedy's Classification
 -

Microbiology, defence mechanisms including immunological aspects, oral manifestations, histopathology and laboratory diagnosis of common bacterial, viral & fungal infections namely :-
Bacterial : Tuberculosis, Syphilis, ANUG & its complicati

Aetiopathogenesis, 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

EC **E DED B K**

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
5. Oral and Maxillofacial Pathology - Neville, Damm, Allen Chi

2. **GE E AL EDICI E**

GUIDELI E

Special emphasis should be given throughout on the importance of various diseases as applicable to dentistry.

1. Special precautions/ contraindication of anaesthesia and various de

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

Amoebiasis
Malabsorption

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.

GE E AL I CI LE F I D GE Y

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.

I D

Their classification, wound healing, repair, treatment of wounds

17. **ELLI G F HE JA**

BD^H Y^{ar}**C E A I E D E I Y A D E D D I C****BJEC I E**

- A. Knowledge and understanding
- B. Skills and
- C. Attitudes

A. Knowledge and understanding:

The graduate should acquire the following knowledge during the period of training.

i.

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 Field:

Light source sterilisation field of operation control of moisture, rubber dam in detail, cotton rolls and anti sialogagues.

8. Amalgam Restoration :

Indication contraindication, 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 :

Linners, 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 :

- 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 osteits, 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. Outline 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.

Use of Burs: Advantages & precautions

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 odontogenic 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

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 3rd 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

ALUMINUM

AIM
(1)

To train the students to diagnose the common disorders of Orofacial region by clinical examination and with the help of such investigations as may be required and mediI(I)6.0di(I)6.0di(I)

- (1) Emphasis should be laid on oral manifestations of systemic diseases and ill-effects of oral sepsis on general health.
- (2) To avoid confusion regarding which lesion and to what extent the student should learn and know, this elaborate syllabus is prepared. As certain lesions com

art III AL ADI L GY

- (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 technics) (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

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

iv) Rapid maxillary expansion

FIXED H D I C A L I A C E

1. Definition, Indications & Contraindications
2. Component parts and their uses

1. Finger Spring
 2. Single Cantelever Spring
 3. Double Cantelever Spring (Z-Spring)
 4. T-Springs on premolars
- IV. Construction of Canine retractors Gauge 23 or 0.6mm
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 ALIGATOR IGIYEA BD

NO. EXERCISE

01. Making upper Alginate impression
02. Making lower Alginate impression
03. Study Model preparation
04. Model Analysis
 - a. Pont's Analysis
 - b. Ashley Howe's Analysis
 - c. Carey's Analysis

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 ex0.6383()-5.38ns 1ey

To prevent and control oral diseases and promote oral health through organized community efforts

OBJECTIVES:

Knowledge:

At the conclusion of the course the student shall have a knowledge of the basis of public health, preventive dentistry, public health problems in India, Nutrition, Environment and their role in health, basics of dental statistics, epidemiological methods, National oral health policy with emphasis on oral health policy.

Skill and Attitude:

At the conclusion of the course the students shall have require at the skill of identifying health problems affecting the society, conducting health surveys, conducting health education classes and deciding health strategies. Students should develop a positive attitude towards the problems of the society and must take responsibilities in providing health.

Communication abilities:

At the conclusions of the course the student should be able to communicate the needs of the community efficiently, inform the society of all the recent methodologies in preventing oral disease

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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

macrophages, lymphocytes, immunoglobulins, complement system, immune mechanisms & cytokines in brief

- Stages in gingivitis-Initial, early, established & advanced
- Periodontal disease activity, continuous paradigm, random burst & asynchronous multiple burst hypothesis

13.

- | | Response |
|--|--|
| 19. Osseous Surgery | Osseous defects in periodontal disease
<ul style="list-style-type: none"> - Definition - Classification - Surgery: resective, additive osseous surgery (osseous grafts with classification of grafts) - Healing responses - Other regenerative procedures; root conditioning - Guided tissue regeneration |
| 20. Mucogingival surgery&periodontal plastic surgeries | Definition
Mucogingival problems: etiology, classification of gingival recession (P.D.Miller Jr. and Sullivan and Atkins)
Indications & objectives
Gingival extension procedures: lateral pedicle graft, frenectomy, frenotomy
Crown lengthening procedures
microsurgery in brief |
| 21. Splints | <ul style="list-style-type: none"> - Periodontal splints - Purpose & classification - Principles of splinting |
| 22. Hypersensitivity | Causes, Theories & management |
| 23. Implants | Definition, types, scope & biomaterials used.
Periodontal considerations: such as implant-bone interface, implant-gingiva interface, implant failure, peri-implantitis & management |
| 24. Maintenance phase (SPT) | - |

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.

- b) Local factor.
- c) The geriatric patient.

- 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.

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

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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.

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 – Willam R.Laney.
5. McCracken's Removable partial prosthodontics
6. Removable partial prosthodontics by – Ernest L. Miller and Joseph E. Grasso.

AE HE IC DE I Y

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. Prevedntive 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)

F E IC D L GY rs o nstruct on

Definition

Forensic is derived from the Latin word forum, which means 'court of law.' Odontology literally implies 'the study of teeth.' Forensic odontology, therefore, has been defined by the Fédération Dentaire Internationale (FDI) as "that branch of dentistry which, in the intere381(e)7.8n81(e)7.8n81

4. Be competent in proper collection of dental evidence related to cases of identification, ethnic and sex differentiation, age estimation and bite marks.
5. Be able to assist in analysis, evaluation, and presentation of dental facts within the realm of law.

Curriculum for 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 identification
 - Definition
 - 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

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.

AL I LA L GY rs o nstruct on

INTRODUCTION TO ORAL IMPLANTOLOGY

Oral Implantology is now emerged as a new branch in dentistry world wide and it has been given a separate status in the universities abroad. In India day to day the practice of treating patients with implants are on rise. In this contest inclusion of this branch into under graduate curriculum has become very essential. The objective behind this is to impart basic knowledge of Oral Implantology to undergraduates and enable them to diagnose, plan the treatment and to carry out the needed pre surgical mouth preparations and treat or refer them to speciality centres. This teaching programme may be divided and carried out by the Dept. of Oral Surgery, Prosthodontics and Periodontics.

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.

BEHA I I AL CIE CE rs o nstruct on

GOAL:

The aim of teaching behavioural sciences to undergraduate student is to impart such knowledge & skills that may enable him to apply principles of behaviour –

- a) For all round development of his personality
- b) In various therapeutic situations in dentistry.

The student should be able to develop skills of assessing psychological factors in each patient, explaining stress, learning simple counselling techniques, and improving patients compliance behaviour.

OBJECTIVES:

A) KNOWLEDGE & UNDERSTANDING:

- 1) Comprehend different aspects of normal behaviour like learning, memory, motivation, personality & intelligence.
- 2) Recognise difference between normal and abnormal behaviour.
- 3) Classify psychiatric disorders in dentistry.
- 4) Recognise clinical manifestations of dental phobia, dental anxiety, facial pain, orofacial manifestations of psychiatric disorders, and behavioural problems in children. Addictive disorders, psychological disorders in various dental departments.
- 5) Should have understanding of stress in dentistry and knowledge of simple counselling techniques.
- 6) Have some background knowledge of interpersonal, managerial and problem solving skills which are an integral part of modern dental practice.
- 7) Have knowledge of social context of dental care.

B) SKILLS

The student shall be able to:

- 1) Interview the patient and understand different methods of communication skills in dentist patient relationship.
- 2) Improve patients compliance behaviour.
- 3) Develop better interpersonal, managerial and problem solving skills.
- 4) Diagnose and manage minor psychological problems while treating dental patients.

INTEGRATION:

The training in Behavioural sciences shall prepare the students

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

E HIC rs o nstruct on**Introduction:**

There is a definite shift now from the traditional patient and doctor relationship and delivery of dental care. With the advances in science and technology and the increasing needs of the patient, their families and community, there is a concern for the health of the community as a whole. There is a shift to greater accountability to the society. Dental specialists like the other health professionals are confronted with many ethical problems. It is therefore absolutely necessary for each and every one in the health care delivery to prepare themselves to deal with these problems. To accomplish this and develop human values Council desires that all the trainees undergo ethical sensitization by lectures or discussion on ethical issues, discussion of cases with an important ethical component.

Course content:**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