PACIFIC DENTAL COLLEGE AND HOSPITAL, DEBARI, UDAIPUR

BDS CURRICULUM

ORTHODONTICS & DENTAL ORTHOPAEDICS

COURSE OBJECTIVE:

Undergraduate programme in Orthodontics is designed to enable the qualifying dental surgeon to diagnose, analyse and treat common orthodontic problems by preventive, interceptive and corrective orthodontic procedures. The following basic instructional procedures will be adapted to achieve the above objectives.

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 Occlusioin
   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, disad vantages 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 othodontics

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 Orthdodontics - 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 antifluxes.

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. chincup
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, Frankels 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 Psuedo 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

I. Basic wire bending exercises Gauge 22 or 0.7mm

1. Straightening of wires (4 Nos.)
2. Bending of a 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 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

retract

or

(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

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

d. Bolton's Analysis

e. Moyer's Mixed Dentition Analysis

CLINICAL

TRAINING DURING

FINAL YEAR B.D.S.

NO. EXERCISE

01. Case History taking

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