4A.3.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 50 HRS

1. Introduction 01HR
Definition, Historical Background, aims and Objectives of Orthodontics and Need for Orthodontics care

2. Growth and Development 02HR
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, Petrovic's, Multifactorial)
f. Genetic and epigenetic factors in growth
g. Cephalocaudal gradient in growth

3. Morphologic Development of Craniofacial structures 02 HR
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 02 HR
a. Factors influencing functional development of dental arches and occlusion
b. Forces of Occlusion
c. Wolff's law of transformation of bone
d. Trajectories of forces

5. Clinical Application of Growth and development. 02HRS

6. Malocclusion - In General 02 HRS
a. Concept of normal occlusion
b. Definition of malocclusion
c. Description of different types of dental, skeletal and functional malocclusion.

7. Classification of Malocclusion 02 HRS
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 01 HR

9. Etiology of Malocclusion 02HRS
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
9) Habits

10. Diagnosis And Diagnostic Aids 03 HRS
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 angels used in cephalometric analysis
4. Analysis - Steiner's, Down's, Tweed's, Rickett's- E- line
g. Electromyography and its uses in orthodontics
h. Hand and Wrist X-rays and its importance in orthodontics

11. General Principles in Orthodontic Treatment Planning Of Dental And Skeletal Malocclusions
02 HRS

12. Anchorage In Orthodontics – 02HRS
Definition, Classification, Types and Stability Of Anchorage

13. Biomechanical Principles In Orthodontics Tooth movement 02 HRS
a. Different types of tooth movements
b. Tissue response to orthodontic force application
c. Age factor in orthodontic tooth movement
d. Theories of Tooth Movement

14. Preventive Orthodontics 03HRS
a. Definition
b. Different procedures undertaken in preventive orthodontics and their limitations.

15. Interceptive Orthodontics 03HRS
a. Definition
b. Different procedures undertaken in interceptive orthodontics
c. Serial extractions: Definition, indications, contraindication, technique, advantages and disadvantages.
d. Role of muscle exercises as an interceptive procedure

16. Corrective Orthodontics 02HRS
a. Definition, factors to be considered during treatment planning.
b. Model analysis: Pont's, Ashley Howe's, Bolton's, Carey's, 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: 01 HRS
General
a. Requisites for orthodontics 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 01HR

19.ORTHODONTIC APPLIANCES 08HRS

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)Myofunctional Appliances
v) 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 exercise and their uses in orthodontics
3. Functional appliances:
i) Activator, Oral screens, Frankel's functional regulator, Bionatar,Twin Block, lip bumper
ii) Inclined planes - upper and lower
Orthodontic Management of Cleft Lip And Palate

20. Principles of Surgical orthodontics 03HRS

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

21. Principle, Differential diagnosis and methods of Treatment of : 03HRS

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

22. Retention And Relapse 04 HRS

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

DESIRED TO KNOW 10HRS

Role of Genetic Control In Growth And Development
Late Adult Growth
Mandibular Rotation
Electromyography
Hand Wrist X-Rays
Anchorage Preparation and in Various Treatment Modality
Age Factors In Tooth Movement
Detailed Biomechanics of the moment to force ratio for various tooth movements
Distalisation of molars
Distal Driving of Entire Arches
Elastomeric Impression
Ethics
Types and Principles Of Pre Adjusted Edgewise Appliance.
Fixed Functional Appliances
Surgical Management Of Cleft Lip and Palate
Surgical Procedure for Orthognathic Surgery
True Class III
Fabrication of Retainers
Repair of Lingual Bonded Retainer

4A.3.3 EXAMINATION PATTERN

Name of Exercise	Time allotted	Marks Allotted (90)
Wire Bending	45 Mins.	50 Marks
Model Analysis	30 Mins.	15 Marks
Identification of Appliances, Cephalometric Landmarks & Spotters	45 Mins.	20 Marks
Journals	NA	05 Marks