III BDS
ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Course Details - III Year B.D.S and IV Year B.D.S

TEACHING HOURS:

Mode of Teaching	III Year B.D.S	IV Year B.D.S
Theory	20 Hours	30 Hours
Clinical	70 Hours	100 Hours
Total	**90 Hours**	**130 Hours**

III YEAR B.D.S - COURSE SYLLABUS:

Subject	Hours
1. Introduction, Definition, Historical Background, Aims and Objectives of Orthodontics and Need for Orthodontic care.	1 Hour
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 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	6 Hours
3. Functional Development of Dental Arches and Occlusion a. Factors influencing functional development of dental arches & occlusion b. Forces of occlusion c. Wolfe's law of transformation of bone d. Trajectories of forces Clinical Application of Growth and Development	2 Hours
4. Malocclusion - In General a. Concept of normal occlusion	3 Hours

b. Definition of malocclusion c. Description of different types of Dental, skeletal and functional malocclusion Classification of Malocclusion Principle, description, advantages and disadvantages of classification of malocclusion by Angle and modification, Simon, Lischer and Ackerman and Proffitt.	
5. Normal and Abnormal Function of Stomatognathic System	1 Hour
6. Aetiology of Malocclusion a. Definition, importance, classification, local & general aetiological factors b. Etiology of following different types of malocclusion i. Midline diastema ii. Spacing iii. Crowding iv. Cross-Bite: Anterior / Posterior v. Class III Malocclusion vi. Class II Malocclusion vii. Deep Bite viii. Open Bite	3 Hours
7. 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 and disadvantages i. Definition ii. Description and use of cephalostat iii. Description and uses of anatomical landmarks lines and angles used in cephalometric and analysis iv. Analysis - Steiner's, Down's, Tweed's. Ricket's E-line g. Electromyography and its use in orthodontics h. Wrist X-rays and its importance in orthodontics	4 Hours

CLINICALS AND PRATICALS IN ORTHODONTICS DURING III B.D.S - 70 Hours

PRATICAL TRAINING DURING III B.D.S

1. Basic wire bending exercises Gauge 22 or 0.7mm
   a. Straightening of wires (4 Nos)
   b. Bending of equilateral triangle
   c. Bending of a rectangle
   d. Bending of a square
   e. Bending of a circle

f. Bending of U.V.

2. Construction of Clasps (upper / lower) Gauge 22 or 0.7mm
   a. ¾ clasp (C-Clasp)
   b. Full clasp (Jackson's Crib)
   c. Adam's Clasp
   d. Triangular Clasp

3. Construction of Springs (On upper both sides) Gauge 24 or 0.5mm
   a. Finger Spring
   b. Single Cantilever Spring
   c. Double Cantilever Spring (Z-Spring)
   d. T-Springs on premolars

4. Construction of Canine retractors Gauge 23 or 0.6mm
   e. U - loop canine retractor (Upper and lower)
   f. Helical canine retractor (Upper and lower)
   g. Buccal canine retractor: - Self supported Buccal canine retractor with
   i. Sleeve - 5mm wire of 24 Gauge
   ii. Sleeve - 19 Gauge needle on any one side
   h. Palatal canine retractor on upper both sides - Gauge 23 or 0.6mm

5. Labial Bow
   i. Gauge 22 or 0.7mm
   j. One on both upper and lower

CLINICAL TRAINING DURING III B.D.S

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
   f. Hakhoba's Analysis

IV BDS
ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Course Details -IV Year B.D.S

TEACHING HOURS:

Mode of Teaching	IV Year B.D.S
Theory	30 Hours
Clinical	100 Hours
Total	130 Hours

MUST KNOW

IV YEAR - COURSE SYLLABUS:

Sl. No. Subjects	Hours
1. General Principles in Orthodontic Treatment Planning of Dental and Skeletal Malocclusions	1 Hour
2. Anchorage in Orthodontics - Definition, Classification, Types and Stability of Anchorage	2 Hours
3. 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	2 Hours
4. Preventive Orthodontics a. Definition b. Different procedures undertaken in preventive orthodontics and their limitations Interceptive Orthodontics a. Definition b. Different procedures undertaken in interceptive procedure c. Serial Extraction: Definition, indications, contra-indication, technique, advantages and disadvantages d. Role of muscle exercise as an interceptive orthodontics	Will Be Covered by Department of Pedodontia
5. 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	2 Hours

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	
6. 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 - use of stainless steel, technical considerations in curing of acrylic, Prinicples of welding and soldering, fluxes and antifluxes e. Preliminary knowledge of acid etching and direct bonding	2 Hours
7. Removable Orthodontic Appliance a. Components of removable appliances b. Different type of clasps and their use c. Different type of labial bows and their use d. Different types of springs and their use e. Expansion appliances in orthodontics i. Principles ii. Indication for arch expansion iii. Description of expansion appliances and different types of expansion devices and their uses iv. Rapid maxillary expansion	2 Hours
8. Fixed Orthodontic Appliances a. Definition, Indication and Contraindications b. Component parts and their uses c. Basic principles of different techniques: Edgewise, Begg straight wire	2 Hours
9. Extraoral Appliances a. Headgears b. Chincup c. Reverse pull headgears	1 Hour
10. Myofunctional Appliances a. Definition and principles b. Muscle exercises and their uses in orthodontics c. Functional appliances: i. Activator, Oral Screens, Frankels function regulator, bionator twin blocks, lip bumper ii. Inclined planes - upper and lower	3 Hours
11. Orthodontic Management of Cleft Lip and Palate	2 Hours
12. Principles of Surgical Orthodontics a. Maxillary Prognathism and Retrognathism b. Mandibular Prognathism and Retrognathism	2 Hours

c. Anterior open bite and deep bite d. Cross bite	
13. Principle, Differential Diagnosis and Methods of Treatment of: a. Midline diastema b. Cross bite c. Open bite d. Deep bite e. Spacing f. Crowding g. Class II - Division 1, Division 2 h. Class III - Malocclusion - True and Pseudo Class III	3 Hours
14. Retention and Relapse Definition, Need for retention, Causes of relapse, Methods of retention, Different types of retention devices, Duration of retention, Theories of retention	2 Hours
15. Ethics	1 Hour
16. Genetic in Orthodontics	1 Hour
17. Computers in Orthodontics	1 Hour
18. Adult Orthodontics in brief	1 Hour

CLINICALS AND PRATICALS IN ORTHODONTICS DURING IV B.D.S - 130 Hours

CLINICAL TRAINING DURING IV B.D.S

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

PRATICAL TRAINING DURING IV 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
5. Appliance Construction in Acrylic
   a. Upper and lower Hawley's Appliance
   b. Upper Hawley's with Anterior bite plane
   c. Upper Habit breaking Appliance

d. Upper Hawley's with Posterior bite plane with 'Z' spring
e. Lower inclined plane / Catalan's Appliance
f. Upper Expansion plate with Expansion Screw
g. Construction of Activator

RECOMMENDED AND REFERENCE BOOKS

1. Contemporary Orthodontics - William R Proffit
2. Orthodontics for Dental Students - White and Gradiner
3. Handbook for Dental Students - Movers
4. Orthodontics - Principles and Practice - Graber
5. Design, Construction and Use of Removable Orthodontic Appliances - C. Philip
6. Adams
7. Clinical Orthodontics: Vol 1 & 2 - Salzmann
   Orthodontics - Graber and Swine
8. Textbook of Orthodontics-III Edition, M S Rani, All India
   Publishers & Distributors, New Delhi
   Dr G V N

SCHEME OF EXAMINATION OF B.D.S (ORTHODONTICS)
Total Theory Marks - 100 Marks

Theory Written Examination -	70 Marks
Vivavoce -	20 Marks
Internal Assessment -	10 Marks
Total	100 Marks

Theory Written Examination- 70 Marks

Type of Questions	Marks	Total
Long Essays - 2	2 x 10	20
Short Essays - 8	8x5	40
Short Answers - 5	5x2	10
Total		70

Clinical Examination - 100 Marks

University Clinical Examination	90 Marks
Internal Assessment -	10 Marks
Total	100 Marks

University Clinical Examination - 90 Marks

Clinical Work	Marks	Total
Spotters - 10 Nos	10 x 3	30
Wire Bending - 3 Exercises a. Labial Bow - b. Adams Clasp c. Fingers Spring / Z Spring	15 Marks 15 Marks 10 Marks	40
Clinical Case Discussion		20
	Total	**90**