

ORTHODONTICS AND DENTOFACIAL ORTHOPAEDICS

SYLLABUS

ORTHODONTIC CLINICS

9.00 Am - 4.30 Pm

Lunch Break Between 1.00 Pm To 2.00 Pm

Cases for Students:

The Students Are Expected To Start at least 50 Cases Before The End Of 12th Month. Out Of This, They Should Start

5	Cases Of	Begg Technique And/Or Tipped Edge Technique
30	Cases Of	Pre-Adjusted Edgewise (Various Prescriptions)
5	Cases Of	Early Treatment With Functional Appliances
2	Cases Of	Surgical Orthodontics
2	Cases Of	Cleft Lip And Palate
3	Cases Of	Tmj and/Or Interdisciplinary
1	Case Of	Lingual Orthodontic Appliance / Short Objective Case

Minimum 5 Cases Of The Above Mentioned Cases Should Have Temporary Skeletal Anchorage Devices (Orthodontic Micro-Implants) Used In Them. About 25 Cases In Advanced Stages Of Treatment. The Students Are Expected To Complete A Good Number Of Cases In All The Categories Allotted To Them.

Cases to Be Treated With Mechanical Appliances:

Class I Cases: 15

Class II Div 1: 15

Class II Div 2: 3

Class III and Open Bite Cases: 2

Out Patient Duty:

Case Presentation:

Seminars and Journal Clubs:

Dissertations:

. The Library Dissertation Should Be Submitted By The End Of 3rd Block, (At The End Of 1and 1/2 Yrand) The Final Dissertation 6 Months Before Course Completion. The Synopsis Of The Final Dissertation Should Be Submitted To The University Within 6 Months Of The Admission As Per The Schedule Given In The Academic Calendar. To The Course After Proper Approval Of The Departmental Scientific Committee, Institutional Scientific Committee And Institutional / University Ethics Committee.

Paper Presentation / Publication :

It Is Mandatory For The Students To Present At Least One Paper In The Annual Indian Orthodontic Conference Or Publish An Article In The Journal Of Indian Orthodontic Society During Their Course.

First Year Poster

Second Year Poster Presentation.

Conferences / Workshops / PG Conventions / CDE Programs:

It Is Mandatory For The Students To Attend The Annual Indian Orthodontic Conference And PG Convention Organized By The Indian Orthodontic Society. It Is Also Mandatory To Attend All The CDE Programs Of The Pune Orthodontic Study Group And Programmes Organised And Recommended By The Department.

Library and Journals:

Departmental Library with Textbooks And Copies Of Some Important Articles. The Rules Of The Library Are To Be Strictly Followed Since Most Of The Books Cannot Be Replaced.

TRAINING SCHEDULE

7 Blocks Of 4 Months Except The 3rd Block, Which Is Of 6 Months Duration.

The Last 6 Months Are Reserved For Exam Preparation And Finishing Cases.

During Each Block A Test Will Be Conducted And Only Upon Satisfactory Performance In That Test, The Candidate Will Be Allowed To Enter The Next Block. For Those Candidates Who Don't Succeed In Any Of These Blocks, A Second Test Will Be Conducted 1-2 Months Later. The Candidates Who Fail In This Second Exam Also, Will Automatically Lose Their Chance To Give The Final Exam At The Prescribed Time And So Will Appear The Final Exam 6 Months Later.

BLOCK I

Wire-Bending,

Appliance Construction

Typodont Work. During

Seminars and Journal Club Presentations

Classes In Basic Subjects Will Continue As Per The College Schedule For All Part I Students In Other Subjects.

The Syllabus For Block I Will Be:

1. Growth And Development
2. Materials: Impression Materials, Cements, Bonding Adhesives, Stainless Steel, Orthodontic Wires, Ceramics, Soldering, Acrylic Etc.
3. Physiology of Stomatognathic System.
4. Issues in Oral Health and Disease.
5. Sterilisation and Disinfection in Orthodontic Office.
6. Dental Pharmacology.
7. Anatomy and Physiology of TMJ And Its Functions.
8. Cephalometrics.
9. Nutrition.

Practical Work Schedule

EXERCISE DATE OF SUBMISSION

Basic Wire bending Exercises 15 Days

Impression Taking, Preparation Of Study Models And All Clasps 10 Days

Labial Bows, Springs And Canine Retractors 15 Days

Removable Mechanical And Functional Appliances 15 Days

Soldering And Welding 10 Days

Cephalometric Tracings And Analyses 7 Days

Teeth Setting And Study Model Analyses 5 Days

Begg Wire Bending Exercises And Typodont Work 21 Days

Basic Edgewise Exercises And Typodont Work 17 Days

The Test Will Be Conducted At the End Of The Block

BLOCK II

In This Block, Emphasis Is Placed On Diagnosis And Treatment Planning. The Following Topics Are Included.

1. Etiology Of Malocclusion
2. Biologic Basis Of Tooth Movement
3. Bone Metabolism
4. Computers
5. Analyses And Advanced Analyses
6. Maturation Indicators
7. Management Of Arch Length Discrepancy
 - A) Expansion
 - B) Extraction
 - C) Disking
 - D) Others
8. Serial Extractions
9. TMJ Evaluation
10. Naso-Respiratory Function And Growth
11. Atypical Extractions
12. Recent Trends In Diagnosis And Treatment Planning
13. Concepts Of Facial Balance
14. Removable Mechanical Appliances

During This Period, The Graduates Start Entering The Clinic And Take Part In Clinical Discussion And Present Cases. Also They Will Start The Early Phases Of Functional And Mechanical Appliance Treatment. The Students Are Advised To Undergo A Short Course On Basics Of Computer Usage.

The Test Will Be On The Last Day Of This Block.

BLOCK III

This Is The Largest Block Since The Students Have To Start Maximum Possible Cases By The End Of This Block. Also Topics Will Be Given For Library Dissertation, Final Thesis And Paper Presentation.

In Clinics The Emphasis Is Placed On :-

1. Bite Registration
2. Fabrication And Management of Activator, Bionator and Frankel's Function Regulator Appliances.
3. Components, Strap-Up and Mechanics of Stage I of Begg and Tip-Edge Appliances.
4. Strap-Up, Levelling And Aligning With Pre-Adjusted Edgewise Appliances.

The Theory Part, In Addition To The Above Topics Includes The Following Aspects.

1. History And Philosophy Of Functional Appliances
2. Mode Of Action Of Functional Appliances
3. Indications, Contraindications, Advantages And Disadvantages Of Functional Appliances
4. Philosophy Of Begg Treatment And Attritional Occlusion
5. Evolution Of Edgewise Appliances
6. Tweed's And Merrifield's Approaches
7. Concept Of Straight Wire Appliance With Andrew's Keys To Normal Occlusion
8. Different Straight Wire Versions
9. Preventive And Interceptive Orthodontics
10. Extra-Oral Forces -
 - A) Concepts
 - B) Biomechanics Of Different Methods Of Force Application
 - C) Designing
11. Combination Of Orthopaedic Auxiliaries
12. Mollenhauer Aligning Auxiliaries
13. Various Habits And Management
14. Anchorage

Last Date For Submission Of Library Dissertation And Test Will Be The Last Date Of The Block III

BLOCK IV

In Clinics Emphasis Is Placed On

1. Removable And Fixed Functional Appliances
2. Extraoral Forces With Functional Appliances
3. Stage II Mechanics With Begg And Tip-Edge Appliances
4. Overbite Control In Straight Wire Appliances
5. Canine Distalization In Pre-Adjusted Appliances With
 - A) Sliding Mechanics
 - B) Friction-Less Mechanics

The Theory Part In Addition To The Above Topics Include:

1. Research Methodology
2. Concepts Of Occlusion
3. Principles Of Bio-Progressive Therapy
4. Force Analysis And Design Factors In Intrusion, Root Paralleling And Torque
5. Growth Prediction
6. Tandem Mechanics
7. Comprehensive Treatment Of Class III Malocclusion
8. Anthropology

The Annual Session Of Indian Orthodontic Society Takes Place Every Year, At Which All Graduate Students Should Present A Paper. Test Will Be Conducted At the End of the Block

BLOCK V

In Clinics:

1. Stage III Mechanics With Begg And Tip-Edge Appliances
2. Incisor Retraction In Straight Wire Appliances
3. Hybrid And Bass Appliances

Theory In Addition To The Above Includes

1. Comprehensive Management Of Class II Malocclusion
2. Genetics

3. Magnets In Orthodontics
4. Mulligan's Common Sense Mechanics
5. Principles Of Segmental Arch Technique
- Burstone
- Marcotte
6. Treatment Of Dentally Compromised Patient
7. Biostatistics
- Basics
- T Test
- ANOVA - Different Types

Test Will Be Conducted At the End of the Block

BLOCK VI:

In Clinics:

1. Finishing And Detailing Of Begg, Tip-Edge And Straight Wire Cases And Also Continued Stage Mechanics
2. Surgical Orthodontic Patients

Theory Includes:

1. Cranio-Facial Anomalies
2. Clefts And Their Management
3. Surgical Orthodontics
4. Treatment Of Impacted Teeth
5. VTO's And Superimposition Techniques
6. Treatment Of Medically Compromised Patients
7. Effects Of Treatment On Facial Growth
8. Management Of Long Face Syndrome
9. Management Of Mutilated Cases
10. Implants In Orthodontics

The Test Will Be Conducted On the Last Day of the Block

BLOCK VII:

In Clinics:

1. Finishing And Detailing With Appliances Continued
2. Treatment Of TMJ Patients

Theory, In Addition To The Above Includes:

1. Adult Orthodontics
2. Controversies In TMJ Management
3. Controversies In Orthodontics
4. Lingual Orthodontics
5. Inter-Disciplinary Management
 - A) Ortho-Endo Cases
 - B) Ortho- Perio Cases
 - C) Ortho- Prostho Cases
6. Retention And Relapse
7. Practice Management
8. Litigation
9. Ethics

Last Date Of Submission Of Final Thesis Is The Last Day Of The Block. They Also Have To Appear For The Part I Examination Of The Indian Board Of Orthodontics, Which Will Be Held At The Annual Session Of Indian Orthodontic Society.

Test Will Be Conducted At the End Of This Block

MANDATORY READING

List Of Books :-

1. Removable Orthodontic Appliances

T.M. Graber Bedrich Neumann

2. Handbook Of Orthodontics Robert E. Moyers

3. Bio-Progressive Therapy Robert M. Ricketts

Ruel W. Bench Carl F. Gugino James J. Hilgers

Robert J. Schulhof Terrance J. Spahl

6. Orthodontics - Current Principles & Techniques

T.M. Graber R. L. Vanarsdall

7. The Alexander Discipline, The Contemporary Concepts & Philosophies
A. Engel

Wick Alexander Gary

8. Twin Block Functional Therapy Applications In Dentofacial Orthopedics

William J. Clark

9. Orthodontics White & Gardner

10. The Design, Construction, & Use Of Removable Orthodontic Appliances C.P. Adams

11. Atlas Of Adult Orthodontics Marks

12. Textbook Of Orthodontics Houston

13. An Introduction To Fixed Appliances (Handbook Series) Issacson

14. Orthodontics : Principles & Practice T.M. Graber

15. Contemporary Orthodontics W. Proffit

The Clinical Management Of Basic Maxillo-Facial Orthopedic Appliances.

Vol - I : Mechanics Terrance J. Spahl

5. The Clinical Management Of Basic Maxillo-Facial Orthopedic Appliances.

Vol - II : Diagnostic

16. Principles & Practice Of Orthodontics Mills

17. Handbook Of Orthodontics Moyers

18. Walther's Orthodontic Notes Houston

19. Orthognathic Surgery Mani Verghese

20. Fixed Orthodontic Appliances: Principles & Practice J.K. William

Issacson

21. Practical Orthodontic Assessment Stephens

22. Orthodontic And Orthopaedic Treatment In Mixed Dentition James A. Mcnamara

23. Management Of Temporo Mandibular Joint Jeffrey Okeson

24. Essential Of Facial Growth Donald Enlow

Mark Hans

25. Diagnosis And Treatment Planning In Dentofacial Orthopaedics Van Der Linden Boersma

26. Dentofacial Orthopaedics With Functional Appliances Thomas Graber Thomas Rakosi

27. Biomechanics In Clinical Orthodontics Ravindra Nanda

28. Orthodontic Treatment Mechanics, Preadjusted Appliances J.C. Bennett R.P. McLaughlin

29. Orthodontic Management of Dentition with Pre-adjusted Appliances J.C. Bennett R.P. McLaughlin
Trevisi

30. Orthodontics Graber Vanarsdall

31. Orthodontic Diagnosis (Colour atlas of Dental Medicine) Rakosi

32. Problem solving in Orthodontics Burstone Marcott

33. Contemporary Orthodontics William Proffit

34. Principles & Practice of Dentofacial Orthopaedics

Hugo Stockfish

35. Bone remodelling Orthodontics by jaw repositioning and alveolar growth Kussick

36. Orthodontics for the next millennium Rohit Sachdeva

PRACTICAL & CLINICAL CURRICULUM

BASIC WIRE BENDING EXERCISES:

SL.NO.	EXCERCISES	WIRE DIAMETER	
1.	Straightening of wire	1 mm	1
2.	Straightening of wire	.6 mm	1
3.	Triangle of each side 1.5”	1 mm	1
4.	Square of each side 1”	1 mm	1

- | | | | |
|----|------------------------|----------------|----------------|
| 5. | Rectangle of 1" X 2" | 1 mm | 1 |
| 6. | Circle of Radius 1" | 1 mm | |
| | (for individual tooth) | 0.016 X 0.022" | |
| 2. | Utility arch wire. | | 0.016 X 0.016" |
| 3. | Various loops | | |
| | a) Bull-Loop | | |
| | b) Tear Drop | | |
| | c) Key-Hole | | |
| | d) Box | | |
| | e) T-Loop | | |
| | f) L-Loop | | |
| | g) Double - Delta loop | | |
| | h) Vertical open | | |
| | i) Elastic Hook | | |
| 4. | Sliding Jig | | 0.016 X 0.022" |

OTHERS:

- | | | | |
|----|---|--------|------------|
| 1. | Trans Palatal Arch - Bending | 0.9 mm | (Eligiloy) |
| 2. | Maxillary Splint with tube positioning for H.G. | | |

TIME ALLOTTED 10 DAYS

- | | | | |
|----|--------------------------|----------|--|
| 1. | Typodont | : | Teeth Setting, Banding Auxiliary Welding, |
| | | | Different stages Demonstration 15 days 1 case. |
| 2. | Cephalometric Tracings : | 3 | |
| | Class I | Class II | Class III |

Down's, Steiner's, McNamara's, Rakosi, Ricketts, Holdaway's, COGS, Arnett's STCA Soft Tissue Analysis - 6days

TIME ALLOTTED FOR COMPLETION OF ALL BASIC EXERCISES 100 DAYS

1.CASES : Case Discussion everyday 12 to 1 P.M. Except Saturday. all students and staffs to be present without fail.

2.SEMINARS: 5 Seminars for the academic course, for each student, seminar will be conducted on a rotational basis of above 3 weeks. Seminar topic will be notified 3 weeks in advance in the notice board.

3.THESIS: A library thesis has to be submitted within the first year after commencement of the course

4.DISSERTATION: The topic for the dissertation has to be selected & finalized in the first year of the course. Dissertation should be completed before two months of final examination.

5.CASE DISPLAY: Once, one month before theory examination.

NOTE: Additions if any will be informed.

- Five finished cases have to be displayed at the time of final Examination.

-Seminars have to be typed and submitted at the time of case display.

FORMATIVE SUMMATION

DISTRIBUTION OF THEORY PAPER MARKS

Paper I Basic & Child Psychology 100 Marks

Paper II Growth & Development 100 Marks

Paper III Corrective Orthodontics 100 Marks

Paper IV Essay Question 100 Marks

Exam Pattern

MDS III Every Month On 2nd Saturday

2 Long question & 6 Short question

2 x 20 Marks = 40 Marks

6x 10 = 60 Marks

MDS II After 2 Months

MDS I After 3 Months

Term Exam:

After 6 Months

MDS I

MDS II

MDS III

After 1 Year

MDS I

MDS II

MDS III

FORMATIVE EVALUATION

A: Theory : 400 Marks

Written examination shall consist of four question papers each of three hours duration .Total marks for each paper will be 100. Paper I,II, and III Shall consist of two long questions carrying 20 marks each and 6 short essay questions each out of 7 carrying 10 marks .Paper IV will be on Essay questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

Paper I : Applied Basics Sciences: Applied anatomy ,Physiology , Dental Material, Genetics, Pathology,Physical Anthropology, Applied Research methodology, Bio-statistics and Applied Pharmacology.

Paper II: Orthodontic history, Concepts of occlusion ‘and esthetics, Child and Adult Psychology, Etiology and classification of malocclusion, Dentofacial Anomalies, Diagnostics procedures and Treatment planning in Orthodontics, Practice management in Orthodontics

Paper III: Clinical Orthodontics.

Paper IV: Essay

The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of topics is inevitable. Students should be prepared to answer overlapping topics.

B- PRACTICAL / CLINICAL EXAMINATION

A Functional case

(Selection of case for functional appliance and delivery of the appliance the next day.) 50 Marks

B Fixed Appliances Exercise

(III stage with auxiliary spring of Begg application OR Bonding of PEA brackets OR construction of suitable arch wire) 50 Marks

C Display of records of the treated cases

(minimum 5 cases) 150 Marks

D Long case discussion 50 Marks

TOTAL MARKS 300 Marks

C. Viva Voce : 100 Marks (to be including in practical Marks)

i) Viva –Voce examination : 80 Marks

Viva –Voce Examination will conduct Viva –Voce conjointly on candidate's comprehension , analytical approach, expression ,interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii) Pedagogy Exercise: 20 Marks

A topic be given to each candidate in the beginning of clinical examination. He /She is asked to make a presentation on the topic for 8-10 minutes.

1

7. 5 U's & 5 V's of 1 cm span .7 mm 1

(Time allotted one week)

SOLDERING EXERCISES :

With Template

- | | | | |
|----|------------------------------------|------|---|
| 1. | + Each span 1” | 1 mm | 1 |
| 2. | Star * large triangle each span 1” | 1 mm | 1 |
| 3. | Small triangle each span 1.2” | 1 mm | 1 |

Free Hand

- | | | | |
|----|-----------------------------|------|---|
| 1. | Lamp post each span 2” | 1 mm | 1 |
| 2. | Christmas tree each span 1” | 1 mm | 1 |

2 spurs on each side

REMOVABLE APPLIANCES - WIRE BENDING :

CLASPS :

- | | | | | |
|----|--------------------------|------|---|---------------|
| 1. | C' clasps on molars | 1 mm | 2 | each side |
| 2. | C' clasps on premolars | 1 mm | 2 | ----- “ ----- |
| 3. | Jackson's clasp on molar | 1mm | 2 | ----- “ ----- |

4.	Crozat clasp on molar	1 mm	2	----- “ -----
5.	Triangular clasp	7 mm	2	----- “ -----
6.	Single arrow head clasp	7 mm	1	----- “ -----
7.	Continuous arrow head clasp	7 mm	1	each type
8.	Adams clasp on molar	7 mm	2	each type
9.	Adams clasp on pre-molar		7 mm 2	each type
10.	Adams clasp on Anteriors		6 mm 2	each type
11.	Adams with distal extension on molars	7 mm	1	each type
12.	Adams with Eyelet on molars	7 mm	1	each type
13.	Adams with Soldered hook on molars	7 mm	1	each type
14.	Adams with soldered tube on molars	7 mm	1	each type
15.	Extended arm Adams Clasp on molars	7 mm	1	each type

(Time allotted ten days + 2 days for Soldering)

SPRINGS:

1.	Single Cantilever spring	.6	2
2.	Double Cantilever spring	.6	2
3.	Double Cantilever with guide (3 types)	.6	1 each
4.	Finger spring for mesial movement	.6	2
5.	Finger spring for Distal movement	.6	2

(both with guard)

6.	Single closed loop spring	.5 mm	2
7.	Double closed loop spring	.5 mm	2
8.	Club spring for molar	.5 mm	2

Out of which one is to be incorporated in acrylic plate and mounted.

CANINE RETRACTORS :

- | | | | |
|----|--|-------|---|
| 1. | Helical coil Canine Retractor | .7 mm | 2 |
| 2. | Buccal Canine (Albert's Retractor) | .7 mm | 2 |
| 3. | U' loop canine retractor soldered to Adams | .7 mm | 2 |
| 4. | Stabilized Canine Retractor | .7 mm | 1 |
| 5. | Palatal Canine Retractor | .6 mm | 2 |
| 6. | Spring with guard one each | | |
| 7. | Spring with boxing one each (Time allotted 6 days) | | |

BOWS :

- | | | | |
|----|---|-------|---|
| 1. | Short labial bow | .7 mm | 1 |
| 2. | Long labial bow | .7 mm | 1 |
| 3. | Robert's Retractor | .6 mm | 1 |
| 4. | Mills bow | .7 mm | 1 |
| 5. | High labial bow with apron spring (0.4mm) | .9 mm | 1 |
| 6. | Begg's type labial bow | .7 mm | 1 |
| 7. | Fitted labial bow | .7 mm | 1 |

APPLILANCES :

- | | | | |
|----|--|----------|-----------------|
| 1. | Nance holding arch | one each | |
| 2. | Lingual arch | one each | |
| 3. | Band and spur type space maintainer | one each | |
| 4. | Tongue Crib appliances | | |
| | Transverse expansion appliances | a) | With Screw |
| | | b) | With quad helix |
| 6. | Activator trimming for class II div 1. | | |
| 7. | Bionator with trimming | | |
| 8. | Frankle FR1c, FR2, FR3 | | |

(Time allotted from springs to Frankle Appliance : 18 days)

FIXED APPLIANCE-BEGG TECHNIQUE-BASIC WIRE BENDING

SL. NO.	EXERCISES	WIRE DIAMETER	NO.S
1.	Cuspid Circle	.016" SP +	2
2.	Bite opening bend	.016" SP +	2
3.	Bayonet Bend	.016" SP +	2
4.	V Bend	.016" SP +	2
5.	Vertical loop	.016" SP +	2
6.	Horizontal stop	.016" SP +	2
7.	Molar stop or lug	.016" SP +	2
8.	Double Back End	.016" SP +	2
9.	Vertical loop	.016" SP +	1 each
10.	Off-set of Vertical loops (4 types)	.016" SP +	1 each
11.	Arch Wire U/L	.016" SP +	1 each
12.	Rolling of I.M. Hooks : Distal Rolling	.016" SP +	1 each
13.	Plain Arch Wires with Bayonet Bend U/L.	.016" SP +	1 each
14.	Looped Arch Wire	.016" SP +	1 each
15.	Stage III Arch Wire U/L	.020" SP +	1 each
16.	Torquing Auxiliary 4 Spurs (Both Regular & Special Plus)	.016" SP +	1 each
17.	Lower Reverse Torquing Auxiliary	.016" SP +	1 each
18.	Kitchton Torquing Auxillary		
19.	Torquing Auxillary (Modifications)		
20.	Uprighting Springs (Both in special & Regular)	.016" SP +	2 each
21.	Rotation Springs	.014" or .016" SP +	2 each

- | | | | |
|-----|--------------------------|---------------------|--------|
| 22. | Molar uprighting springs | .016" SP + | 2 each |
| 23. | Separating Springs | .020" or .018" SP + | 2 each |

(Time allotted 3 weeks)

RECTANGULAR WIRE BENDING EXERCISES

1. a. Ideal arch Bonwill-Hawley
- b. Placement of first, Second & third order bends