

DEPARTMENT OF PEDODONTICS & PREVENTIVE DENTISTRY
VIDS & RC; Whitefield; Bangalore

COURSE OBJECTIVES

At the end of the course, the student should be able to:

1. Create not only good Oral Health in the Child but also a good Citizen of tomorrow.
2. Instil a positive Attitude and Behaviour in Children.
3. Understand the principles of Prevention and Preventive Dentistry right from Birth to Adolescence.
4. Guide and counsel the parents in regard to various treatment modalities including different facets of Preventive Dentistry.
5. Prevent and Intercept developing Malocclusion.

SKILLS

1. Obtain proper clinical history, methodological examination of the child patient, perform essential diagnostic procedures and interpret them and arrive at a reasonable diagnosis and treat appropriately.
2. Be competent to treat dental diseases which are occurring in child patient.
3. Manage to repair and restore the lost/ tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.
4. Manage the disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.
5. To acquire skills in managing efficiency life threatening condition with emphasis on basic life support measure.

ATTITUDES

1. Develop an attitude to adopt ethical principles in all aspects of Pedodontic practice.
2. Professional honesty and integrity are to be fostered.
3. Treatment care is to be delivered irrespective of the social status, cast creed and religion of the patients.
4. Willingness to share the knowledge and clinical experience with professional colleagues.
5. Willingness to adopt after a critical assessment, new methods and techniques of Pedodontic management developed from time to time, based on scientific research, which are in the best interest of the child patient.
6. Respect child patient's rights and privileges, including child patients right to information and right to seek a second opinion.
7. Develop an attitude to seek opinion from allied medical and dental specialities as, and when required.

RULES AND REGULATIONS

1. All students are instructed to abide by the rules of the Department.
 2. Post graduate students are expected to sign in their attendance register every morning by 9.00 am and before leaving by 4.00pm.
 3. Should come with neat white coat (apron) and identity badge.
 4. Should fulfil the DCI attendance requirements.
 5. In case of absence or leave of any PG student they have to inform in writing to the HOD or the staff in- charge and request any of the Co-PGs to attend their work according to the need.
 6. Should obtain the signature on completion of the assigned preclinical work and clinical work in the record book on the same day of completion.
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7. Should strictly follow sterilization and infection control protocol to all the work done.
8. Cleanliness and maintenance of the respective Dental unit, allotted equipment and instruments are the responsibility of each PG student.
9. Appointment schedule of the patients should be maintained properly.
10. After the college hours PGs are expected to utilize the college library for reference books and journals and for seminars, journal clubs, index cards for library dissertation and university dissertation.
11. Each PG is expected to be responsible for the books, instruments or materials taken from the department. Due entry of the books or instruments to be there in the register counter signed by staff in- charge.
12. Academic activities such as Seminars, Journal clubs, Symposiums, discussion will be conducted in the department on rotation basis for the PG students. The students are expected to report the seminar topic, outline of the topic to be done one week before presentation and take the approval from the concerned staff.
13. Library dissertation has to be submitted by the end of first 6 months.
14. Synopsis for the Main dissertation should be submitted by the end of first 6 months.
15. Main Dissertation should be submitted 6 months prior to the completion of the course.

COURSE CONTENT

1. Applied Anatomy and Genetics.

- Development of face, paranasal sinuses.
 - Triangles of neck
 - Salivary glands
 - Temporomandibular joint
 - Congenital anomalies of oro -facial region
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- Muscles of mastication
- Arteries , Veins, nerves of face
- Embryology - Growth and development of oro facial structures
- History - Salivary glands, tongue, tooth, epithelial tissue, connective tissue

2. Applied Physiology and Biochemistry

- Nervous system - Physiology of nerve conduction, pain pathway, sympathetic and parasympathetic nervous system, regulation of body temperature.
 - Blood
 - Cardio Vascular system
 - Basic metabolism
 - Carbohydrates, Proteins, Lipids
 - Enzymes
 - Vitamins
 - Minerals
 - Antimetabolites
 - Nucleic acids.
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3. Applied Microbiology and Pathology.

- Cell biology
- Basic immunology
- Staining techniques
- Oral microflora
- Virology
- Culture and Sensitivity tests
- Inflammation
- Repair
- Regeneration
- Wound healing
- Shock
- Hypersensitivity
- Endocrine disorders
- Neuromuscular diseases
- Nutritional disorders
- Metabolic disorders
- Neoplasia
- Lab investigation

4. Nutrition and Dietics.

5. Pharmacology

- Antibiotics and analgesics
- Dosage and mode of drug administration
- General anaesthesia

6. Growth and development

- Prenatal and postnatal development of cranium, face, jaws, teeth and supporting structures.
- Chronology of dental development and development of occlusion.
- Dimensional changes in dental arches.
- Cephalometric evaluation of growth.

7. Child psychology

- Development and classification of behaviour, personality intelligence in children.
- Theories of child psychology, stages of psychological child development, fear, anxiety, apprehension and its management.

8. Behaviour management

- Non-pharmacological and pharmacological methods.

9. Conscious sedation, deep sedation and general anaesthesia in paediatric dentistry.

10. Child Abuse and Dental Neglect

11. Preventive Pedodontics

- Concepts, chair side preventive measures for dental diseases.
- High risk caries including rampant and extensive caries: recognition; Features and preventive management.
- Pit and fissure sealants.
- Oral hygiene measures, correlation of brushing with dental caries and periodontal diseases.
- Diet and nutrition as related to dental caries and periodontal diseases.
- Diet and nutrition as related to dental caries, diet counselling.

12. Dental plaque: Definition, initiation, pathogenesis, biochemistry, morphology and metabolism

13. Microbiology and Immunology as related to oral diseases in children.

- Basic concepts, immune system in human body.
- Auto immune diseases.
- Histopathology, pathogenesis, immunology of dental caries, periodontal diseases, tumour, oral mucosal lesions.

14. Gingival and Periodontal Diseases in children

- Normal gingival and periodontium in children.
- Gingival and periodontal diseases - etiology, pathogenesis, prevention and management.

15. Paediatric Operative Dentistry

- Principles of paediatric operative dentistry along with modifications of materials / past, current and latest including tooth coloured materials.
 - Modifications required for cavity preparation in primary and young permanent teeth.
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- Various isolation techniques.
- Restoration of decayed primary, young permanent and permanent teeth in children using various restorative materials like glass ionomer, composites, silver amalgam and the latest materials.

16. Paediatric Endodontics

- Primary dentition: diagnosis of pulpal diseases and their management of pulp capping, pulpotomy, pulpectomy, controversies and recent concepts.
- Young permanent teeth and permanent teeth, pulp capping, pulpotomy, apexogenesis, apexification, concepts technique and materials used for different procedures.
- Recent advances in paediatric endodontics.

17. Prosthetic Considerations in Paediatric Dentistry.

18. Traumatic injuries in children

- Classification and importance.
- Sequelae and reaction of teeth to trauma.
- Management of traumatised teeth with latest concepts.

19. Interceptive orthodontics

- Concepts of occlusion and aesthetics : structure and function of all anatomic components of occlusion mechanics of articulations , recording of masticatory function, diagnosis of occlusal dysfunction, relationship of TMJ anatomy and pathology and related neuromuscular physiology.
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- A comprehensive review of local and systemic factors in the causation of malocclusion.
- Recognition and management of normal and abnormal developmental occlusions in primary, mixed and permanent dentitions in children.
- Biology of tooth movement: A comprehensive review of the principles of tooth movement.
- Review of contemporary literature histopathology of bone and periodontal ligament; molecular and ultra cellular consideration in tooth movement.
- Myofunctional appliances: Basic principles, contemporary appliances; design and fabrication.
- Removable appliances: Basic principles, contemporary appliances; design and fabrication.
- Case selection and diagnosis in interceptive orthodontics.

20. Oral habits in children

- Definition, Aetiology, classification
- Clinical features of digit sucking, tongue thrusting, mouth breathing and various other secondary habits
- Management of oral habits in children

21. Dental care of Children with Special Needs: Definition, Aetiology, classification, behaviour, clinical features and management of children with:

- Physically handicapping condition
 - Medically handicapping condition
 - Mentally handicapping condition
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22. Oral Manifestations of Systemic Conditions in children and their management.

23. Management of minor Oral Surgical Procedures in children.

24. Dental Radiology as related to Paediatric Dentistry

25. Cariology

- Historical background
- Definition, Aetiology, pathogenesis
- Caries pattern in primary, young permanent teeth in children
- Rampant caries, early childhood caries and extensive caries: Definition, aetiology, pathogenesis, clinical features, complications and management.
- Role of diet and nutrition in dental caries
- Dietary modifications and diet counselling
- Caries activity tests, caries prediction, caries susceptibility and their clinical applications.

26. Paediatric Oral Medicine and Clinical Pathology

- Recognition and management of dental anomalies, teething disorders, stomatological conditions, mucosal lesions viral infections etc

27. Congenital Abnormalities in Children

- Definition, classification, clinical features and management

28. Dental Emergencies in Children and their management.

29. Dental materials used in Paediatric Dentistry.

30. Preventive Dentistry

- Definition, principles and scope, type of prevention
- Different preventive measures used in pediatric dentistry including pit and fissure sealants and caries vaccine

31. Dental Health Education and School Dental Health Programs

- Dental health concepts
- Effects of civilization and environment
- Dental health delivery system
- Public health measures related to children along with principles of children's preventive dentistry

32. Fluorides

- Historical background
- Systemic and topical fluorides
- Mechanism of action
- Toxicity and management
- Defluoridation techniques

33. Medico legal aspects in Paediatric Dentistry with emphasis on informed consent.

34. Counselling in Paediatric Dentistry.

35. Case History recording

- Outline of principles of examination
- Diagnosis and treatment planning

36. Epidemiology

- Concepts, methods of recording and evaluation of various oral diseases
 - Various national and global trends of epidemiology of oral diseases
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37. Comprehensive Infant Oral Health Care.

38. Principles of Biostatistics and Research Methodology and understanding of computers and photography.

39. Comprehensive Cleft care management with emphasis on counselling, feeding, nasoalveolar bone remodelling and speech rehabilitation.

40. Setting up of Pedodontics and Preventive Dentistry Clinic.

41. Emerging Concepts in Paediatric Dentistry: Scope of laser/ minimal invasive procedures in paediatric dentistry.

I PRECLINICAL WORK REQUIREMENT

DURATION: First 6 Months of I Year MDS

1. Carving of all deciduous teeth:

- One upper quadrant(5)
- One lower quadrant(5)

2. Basic Orthodontic Exercises

- a. Straight wire 6" (19 gauges)
- b. Equilateral triangle, square & circle (2")
- c. 2U2V (1cmx1cm)

3. Clasps

- a. C-clasps 14, 16
- b. C-clasps 34, 36
- c. Jackson's clasps on 14, 16
- d. Jackson's clasps 34, 36
- e. Triangular clasps between 14, 15&16
- f. Triangular clasps between 24, 25&26
- g. Adam's clasp on 14, 16
- h. Adam's clasps on 34, 36
- i. Adam's clasps with distal extension on 16
- j. Adam's clasps with eyelet on 26
- k. Ball clasp on 16, 75

4. Springs

- a. Single cantilever spring on 11, 21
- b. Double cantilever spring on 11, 21
- c. Single cantilever spring on 11
- d. Double cantilever spring on 11
- e. Finger spring for mesial movement 11
- f. Finger spring for mesial movement on 21
- g. Single cantilever spring with guide on 11, 21
- h. Double cantilever spring with guide on 11, 21
- i. Single close loop spring (T spring) on 11, 21
- j. Double close loop spring (T spring) on 11, 21

5. Labial bows:

- a. Short labial bow
- b. Long labial bow
- c. Split labial bow
- d. High labial bow with apron spring

6. Basics of soldering: Making of a lamp post of stainless steel wire pieces of different gauges soldered on either side of heavy gauge main post.

7. Basic spot welding exercise.

8. Removable orthodontic appliances

- a. Hawley's appliances
 - b. Canine retractor appliances
 - Buccal canine retractors-13
 - Helical canine retractor-13
 - Palatal canine retractor-13
 - U-loop canine retractor-13
 - Robert's retractor
 - c. Anterior bite plane.
 - d. Posterior bite plane with single cantilever spring
 - e. Posterior bite plane with double cantilever spring
 - f. Expansion plates with expansion screw&coffin spring.
 - g. Upper appliance with finger springs to correct median diastema.
 - h. Upper canine retraction appliance with Helical & U-loop springs.
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9. Myofunctional appliances

- a. Oral screen.
- b. Inclined plane
- c. Removable lip bumper
- d. Fixed lip bumper
- e. Activator

10. Habit breaking appliances (Removable; Fixed; partially fixed and Removable)

- a. Hawley's appliance with tongue crib
- b. Fixed tongue crib

11. Removable space maintainers

- a. Unilateral non-functional
- b. Bilateral non-functional
- c. Unilateral functional
- d. Bilateral functional

12. Fixed space maintainer

- a. Band and loop (long & short)
- b. Lingual arch with canine stoppers
- c. Distal shoe.
- d. Nance palatal arch
- e. Transpalatal arch
- f. Maynes space maintainer
- g. Crown and loop

13. Space regainers

- a. Removable-Hawley's appliances with
 - Helical spring
 - Split acrylic dumbbell spring
 - Short elastic (Sling shot space regainer)
- b. Fixed
 - open coil space regainer

14. Conservative exercises (on typhodont/extracted teeth)

- Sectioning of the teeth at various levels and planes
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- Cavity preparations for various restorative materials for both deciduous and Permanent Teeth:
 - a. Buccal pit cavity preparation on 16, 36
 - b. Class I cavity preparation on 54, 74
 - c. Class II with palatal extension on 16
 - d. Class I with buccal extension on 36
 - e. Class II cavity preparation on 65, 75
 - f. Class II cavity (MOD) preparation on 75
 - g. Class III cavity preparation done on 51, 21
 - h. Class V cavity preparation 11, 36

15. Performing Endodontic exercises on both deciduous and permanent teeth:

- a. Pulpotomy in 75/85
- b. Pulpectomy in 51/61, 54/64, 55/65, 75/85.
- C. RCT in extracted teeth 16, 22, 23, 36 or 46.

16. Preparation of Teeth for various types of Crowns.

17. Laminates/ Veneers.

18. Surgical excersises:

- a. Fabrication of splints.
- b. Type of wiring
- c. Suturing

19. Oral Radiology

- a. Taking of periapical /occlusal & bite wing radiographs in children
- b. Developing and processing of films.

20. Preparation of study models with normal occlusion in children aged 3, 7, 11 & 14 years.

21. Mixed Dentition Analysis.

22. Cephalograms – learning & analysis of normal occlusion & morphology in children of 3, 7, 11 and 14 years.

- Cephalometric tracing of soft tissue dental and skeletal landmarks as observed on cephalometric radiographs and drawing of various planes and angles.

23. Computation of

- Caries index and performing various caries activity tests
- Oral hygiene index
- Periodontal index
- Fluorosis

24. Performing of Behavioural rating and IQ tests for children.

25. Fixed appliance technique

Training shall be imparted in one basic technique i.e. Begg technique or its derivative / Edgewise/ Straight wire etc. with adequate exposure to other techniques

- Band pinching.
- Bracket positioning & placement.
- Different stages in treatment appropriate to technique taught.

26. Drawing Album & Records

- a. Tables showing chronology of eruption of teeth.
- b. Tables showing tooth dimensions.
- c. Drawing the morphology of pulp.
- d. Development of dentition at different ages.
- e. Development of occlusion at different ages.
- f. Diagrams showing cephalometric points, planes & angles.
- g. Table showing differences between primary, young permanent & permanent teeth.
- h. Table showing modification of cavity preparation for primary teeth.
- i. Mixed dentition analysis, principles and measurements.
- j. Principles of soldering & welding.
- k. Principles & methods of rubber dam.

II LIBRARY ASSIGNMENT/ DISSERTATION.

III SYNOPSIS

CLINICAL WORK REQUIREMENT FROM 7 MONTHS TO 36 MONTHS

No.	Clinical Work	Total	7 to 12 months	13 to 24 months	25 to 36 months
1.	Behaviour Management of different age groups children with complete records	17	02	10	05
2.	Detailed Case evaluation with complete records, treatment planning and presentation of cases with chair side and discussion	17	02	10	05
3.	Step-by-step chair side preventive dentistry scheduled for high risk children with gingival and periodontal diseases & Dental Caries	11	01	05	05
4.	Practical application of Preventive dentistry concepts in a class of 35-50 children& Dental Health Education & Motivation	07	01	04	02
5.	Pediatric Operative Dentistry with application of recent concepts				
	(a) Management of Dental Caries				
	I) Class I	50	30	10	10
	II) Class II	100	40	50	10
	III) Other Restorations	100	20	50	30
	(b) Management of traumatized anterior teeth	15	04	06	05
	(c)Aesthetic Restorations	25	05	10	10
	(d) Paediatric Endodontic procedures				
	Deciduous teeth -Pulpotomy /Pulpectomy	150	30	50	70
	-Permanent Molars	20	03	07	10
	-Permanent Incisor	15	02	03	10
	-Apexification & Apexogenesis	20	02	08	10
6.	Stainless Steel Crown	50	10	20	20
7.	Other Crown	05	01	02	02
8.	Fixed Space Maintainers	30	08	12	10
9.	Removable Space Maintainers	20	05	07	08
10.	Functional Maintainers	05	01	02	02
11.	Preventive measures like fluoride applications & Pit & Fissure Sealants applications with complete follow-up and diet counselling	20	08	08	04
12.	Special Assignments	03	01	01	01
	(i) School Dental Health Programmes				
	(ii) Camps etc.	02	01	01	-

Note: The figures mentioned against Sl. No 4 and 12 are the minimum number of recommended procedures to be performed

- **LIBRARY DISSERTATION** has to be submitted by the end of **first 6 months** of the course.
- **SYNOPSIS** for the Main dissertation should be submitted by the end of **first 6 months**.
- **MAIN DISSERTATION** should be submitted **6 months** prior to the completion of the course.
- Work progress with regard to Library dissertation and main Dissertation has to be periodically discussed on weekly basis with their respective guides.

SCHEME OF EXAMINATION

A. Written exam - 300 Marks

Written exam shall consist of four question papers each of three hours duration.
Total marks for each paper will be 75.

Part I: Applied basic sciences

2 Essays X 20 marks = 40; 5 short notes X 7 marks = 35

Part II: Clinical Pedodontics

2 Essays X 20 marks = 40; 5 short notes X 7 marks = 35

Part III: Preventive and community dentistry as applied to Pediatric dentistry

2 Essays X 20 marks = 40; 5 short notes X 7 marks = 35

Part IV: Essay – 75 marks

B. Practical Examination: 200 Marks

The Practical and Viva-voce Examinations are conducted for a minimum of two days.

1) Case Discussion, Pulp Therapy i.e. Pulpectomy on a Primary Molar –

Case Discussion:	Working Length (X-ray):
20	20
Rubber Dam	Obturation:
Application: 10	20

TOTAL = 70

**2) Case Discussion, Crown Preparation of Primary Molar for
Stainless steel**

crown and Cementation of the same –

Case Discussion: 10 Crown Selection and

Crown Preparation: 20 Cementation: 20

TOTAL = 50

**3) Case Discussion, Band Adaptation for Fixed type of Space
Maintainer and**

Impression making –

Case Discussion: 20 Band Adaptation: 20

Impression: 20

Evaluation of Fixed Space Maintainer and Cementation: 20

TOTAL = 80

C. Viva voice: 100 marks

i. Viva voice examination: 80 marks

ii. Pedagogy exercise: 20 marks
