

# **SYLLABUS**

## **MDS - PEDODONTICS & PREVENTIVE DENTISTRY (9550)**

### **Notice**

1. Amendment made by the Statutory Regulating Council i.e. Dental Council of India in Rules/Regulations of Post Graduate Dental Courses shall automatically apply to the Rules/Regulations of the Mahatma Gandhi University of Medical Sciences & Technology (MGUMST), Jaipur.
2. The University reserves the right to make changes in the syllabus/books/guidelines, fees-structure or any other information at any time without prior notice. The decision of the University shall be binding on all.
3. The Jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

**RULES & REGULATIONS**  
**MASTER OF DENTAL SURGERY**  
**(3 Years Post Graduate Degree Course)**

**TITLE OF THE COURSE:**

It shall be called Master of Dental Surgery

**ELIGIBILITY:**

- A candidate for admission to the Master in Dental Surgery course, must possess a degree of Bachelor in Dental Surgery awarded by a University or Institute in India recognized by the Dental Council of India and registered with the State Dental Council and has obtained provisional or permanent registration and has undergone compulsory rotator internship of a year in an approval / recognized dental college.
- In the case of a foreign national, the following procedure shall be followed :  
The Council may, on payment of the prescribed fee for registration, grant temporary registration for the duration of the post-graduate training restricted to the dental college / institution to which he or she is admitted for the time being exclusively for post-graduate studies: The temporary registration to such foreign national shall be subject to the condition that such person is duly registered as medical practitioner in his/ her own country from which he/she has obtained his/her basic dental qualification and that his/her degree is recognized by the corresponding state dental council or concerned authority.
- **NRI Seats:**
  - (a) Students from other countries should possess passport, visa and exchange permits valid for the period of their course of study in this institution and should observe the regulations of both central and state governments regarding residential permits and obtain no-objection certificate from the same.
  - (b) The candidate should have a provisional "Student Visa". If he comes on any other visa and is selected for admission, he will have to first obtain a student visa from his country and then only he will be allowed to join the course. Therefore it is imperative to obtain provisional student visa before coming for counselling.
  - (c) This clause is applicable to NRI/ Foreign students only.

**CRITERIA FOR SELECTION FOR ADMISSION:**

There shall be uniform NEET for admission to the post-graduate dental courses in each academic year conducted in the manner, as prescribed by the National Board of Examination or any other authority appointed by the Central Government in this behalf.

- **NRI Quota**  
15% of total seats are earmarked for foreign national/PIO/OCI/NRI/Ward of NRI/NRI sponsored candidates who would be admitted on the basis of merit obtained in NEET MDS or any other criteria laid down by Central Government/DCI.
- **Remaining seats (Other than NRI Quota seats)**
  - (a) Admissions to the remaining 85% of the seats shall be made on the basis of the merit obtained at the NEET conducted by the National Board of Examinations or any other authority appointed by Government of India for the purpose.
  - (b) The admission policy may be changed according to the law prevailing at the time of admission.
- **Qualifying Criteria for Admission:**
  - (a) The candidate has to secure the following category-wise minimum percentile in NEET-MDS Examination for admission to post-graduate courses held in a particular academic year.

General	50th Percentile
Person with locomotory disability lower limbs	45th Percentile
Scheduled Caste, Scheduled Tribes, Other Backward Classes	40th Percentile

The percentile shall be determined on the basis of highest marks secured in the All-India common merit list in NEET-MDS for post-graduate courses: Further, when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in NEET-MDS held for any academic year for admission to post-graduate courses, the Central Government in consultation with the Council may, at its discretion lower the minimum marks required for admission to post-graduate courses for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the said academic year only.

- (b) The reservation of seats in dental college/institutions for respective categories shall be as per applicable laws prevailing in States / Union territories. An all India merit list as well as State wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in NEET-MDS Test and candidates shall be admitted to post-graduate course from the said merit list only. In determining the merit of candidates who are in service of Government / public authority, weightage in the marks may be given by the Government / competent authority as an incentive upto 10% of the marks obtained for each year of service in remote and/or difficult areas upto the maximum of 30% of the marks obtained in NEET-MDS. The remote and difficult areas shall be as defined by State Government / competent authority from time to time.
- (c) A candidate who has failed to secure the minimum percentile as prescribed in these regulations, shall not be admitted to any post-graduate courses in any academic year.
- (d) Minimum 5% seats of the annual sanctioned intake capacity shall be filled up by candidates with locomotory disability of lower limbs between 50% to 70%: In case any seat in this quota remains unfilled on account of unavailability of candidates with locomotory disability of lower limbs between 50% TO 70% then any such unfilled seat shall be filled up by persons with locomotory disability of lower limbs between 40% to 50 – before they are included in the annual sanctioned seats for general category candidates: This entire exercise shall be completed by each dental college / institution as per the statutory time schedule for admission.

#### **ENROLMENT AND ELIGIBILITY:**

Every candidate who is admitted to MDS course in Mahatma Gandhi Dental College & Hospital shall be required to get himself/herself enrolled with the Mahatma Gandhi University of Medical Sciences & Technology after paying the prescribed eligibility and enrolment fees. The candidate shall have to submit an application to the MGUMST for the enrolment/eligibility along with the following original documents with the prescribed fees (upto November 30 of the year of admission without late fees and upto December 31 of the year of admission with late fees) –

- (a) BDS pass degree certificate issued by the University.
- (b) Marks cards of all the university examinations passed (I to Final BDS).
- (c) Attempt Certificate issued by the Principal.
- (d) Certificate regarding the recognition of the Dental College by the Dental Council of India.
- (e) Completion of paid Rotatory Internship certificate from a recognized dental college.
- (f) Registration by any State Dental Council.
- (g) Migration certificate issued by the concerned university.
- (h) Proof of SC/ST or other reserve category, as the case may be.

**REGISTRATION:**

Every candidate who is admitted to MDS course in Mahatma Gandhi Medical College & Hospital shall be required to get himself/herself registered with the Mahatma Gandhi University of Medical Sciences & Technology after paying the prescribed registration fees.

The candidate shall have to submit an application to the MGUMST for registration with the prescribed fees (upto November 30 of the year of admission without late fees upto December 31 of the year of admission with late fees).

**DURATION OF THE COURSE:**

The Course will commence on 1st May of each academic year and shall be of three years duration. All the candidates for the degree of MDS are required to pursue the recommended course for at least three academic years as full time candidates in an institution affiliated to and approved for Postgraduate studies by Mahatma Gandhi University of Medical Sciences & Technology, Jaipur and recognized by the Dental Council India.

**METHOD OF TRAINING:**

- The period of training for the award of MDS course shall be of three years duration for three academic years as full time candidates in an institution including the period of examination:
  - Provided that the time period required for passing out of the MDS course shall be a maximum of six years from the date of admission in said course:
  - Provided further that the duration of the post graduate course for the post graduate Diploma holders shall be the same as MDS Course in the concerned speciality except that they are not required to (i) to undergo study and training in Basic Sciences (ii) pass the PART-I examination of MDS course. However, they have to submit the dissertation work, as part of the post graduate programme.
- During the period, each student shall take part actively in learning and teaching activities design of training, by the institution or the university. The teaching and learning activities in each speciality, shall be as under-
  - (a) Lectures
  - (b) Journal review
  - (c) Seminars
  - (d) Symposium
  - (e) Clinical postings
  - (f) Clinico-Pathological conference
  - (g) Interdepartmental meetings
  - (h) Teaching skills
  - (i) Dental education programmes
  - (j) Conferences/ Workshops/ Advanced Courses
  - (k) Rotation and posting in other Departments
  - (l) Dissertation/ Thesis
- All the students of the specialty departments shall complete the minimum quota for the teaching and learning activities, as follows:-
  - (a) Journal clubs: 5 in a year
  - (b) Seminars: 5 in a year
  - (c) Clinical case presentations: 4 in a year
  - (d) Lectures taken for undergraduates: 1 in a year
  - (e) Scientific paper/ poster presentations in state/ national level conferences: 4 papers/ posters during three years of training workshop period

- (f) Clinic-pathological conferences: 2 presentations during three years of training period.
- (g) Scientific publications (optional) : one publication in any indexed scientific journal
- (h) Submission of synopsis: one synopsis within six months from date of commencement of the course.
- (i) Submission of Dissertation months: one dissertation six months before appearing for the university examination
- (j) Submission of library dissertation: one dissertation within eighteen months from the date of commencement of the course

#### **ATTENDANCE, PROGRESS AND CONDUCT:**

- A candidate pursuing MDS course should work in the department of the institution for the full period as a full time student. Every candidate shall secure (80 % attendance during each academic year). No candidate is permitted to run a clinic/work in clinic/laboratory/nursing home/hospital/any similar establishment while studying postgraduate course. No candidate shall join any other course of study or appear for any other examination conducted by this university or any other university in India or abroad during the period of registration. Each year shall be taken as a unit for the purpose of calculating attendance.
- Every candidate shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons. Every candidate shall have not less than 80 percent of attendance in each year of the course. However, candidates should not be absent continuously as the course is a full time one.

#### **MIGRATION:**

Under no circumstances, the migration or the transfer of students undergoing post-graduate Degree/ Diploma shall not be permitted by the university or the authority. No interchange of the specialty in the same institution or in any other institution shall be permitted after the date of commencement of session.

#### **MONITORING PROGRESS OF STUDIES- WORK DIARY / LOG BOOK:**

Every candidate shall maintain a work diary in which his/her participation in the entire training programme conducted by the department such as reviews, seminars, etc. has to be chronologically entered. The work scrutinized and certified by the Head of the Department and Head of the Institution is to be presented in the University practical/clinical examination.

- (a) Periodic tests: There shall be three tests; two of them shall be annual tests, one each at the end of first year and the second year. The third test shall be held three months before the final examination; tests shall include written papers, practical/clinical and viva voce.
- (b) Records: Records and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University when called for.

#### **DISSERTATION:**

- Every candidate pursuing MDS degree course is required to carry out work on research project under the guidance of a recognized post graduate teacher . Then such a work shall be submitted in the form of a dissertation. The dissertation is aimed to train a postgraduate student in research methods & techniques. It includes identification of a problem, formulation of a hypothesis, review of literature, getting acquainted with recent advances, designing of a study, collection of data, critical analysis, comparison of results and drawing conclusions.
- Every candidate shall submit to the Registrar of the University in the prescribed format a synopsis containing particulars of proposed dissertation work on or before the dates notified

by the University. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior notice and permission from the University.

- The dissertation should be written under the following headings:
  - (a) Introduction
  - (b) Aims and Objectives of study
  - (c) Review of Literature
  - (d) Material and Methods
  - (e) Results
  - (f) Discussion
  - (g) Conclusion
  - (h) Summary
  - (i) References
  - (j) Tables
  - (k) Annexure
- The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The guide, head of the department and head of the Institution shall certify the dissertation. Four copies of dissertation thus prepared shall be submitted to the Registrar for evaluation, six months before final examination on or before the dates notified by the University. Examiners appointed by the University shall value the dissertation. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.
- Guide: The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as laid down by Dental Council of India / Mahatma Gandhi University of Medical Sciences & Technology, Jaipur.
- Co-guide: A co-guide may be included provided the work requires substantial contribution from a sister department or from another institution recognized for teaching/training by Mahatma Gandhi University of Medical Sciences & Technology, Jaipur / Dental Council of India. The co-guide shall be a recognized postgraduate teacher of Mahatma Gandhi University of Medical Sciences & Technology, Jaipur.
- Change of guide: In the event of a registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the University.

#### **ELIGIBILITY TO APPEAR FOR UNIVERSITY EXAMINATION:**

- Eligibility: The following requirements shall be fulfilled by every candidate to become eligible to appear for the final examination.
  - (a) **Attendance:** Every candidate shall have fulfilled the attendance prescribed by DCI during each academic year of the postgraduate course. Every candidate shall secure (80 % attendance during each academic year).
  - (b) **Progress and Conduct:** Every candidate shall have participated in seminars, journal review meetings, symposia, conferences, case presentations, clinics and didactic lectures during each year as designed by the department. The candidate should have exemplified good conduct throughout.
  - (c) **Work diary and Logbook:** Every candidate shall maintain a work diary for recording his/her participation in the training programme conducted in the department. The work

diary and logbook shall be verified and certified by the Department Head and Head of the Institution.

(d) Internal assessments shall be held every 6 months.

- The certification of satisfactory progress by the Head of the Department/ Institution shall be based on (a), (b) and (c) mentioned above.

#### **SCHEME OF MDS EXAMINATIONS:**

- The scheme of examination in respect of all the subjects of MDS shall be as under :
- The examinations shall be organised on the basis of marking system.
- Every student during the period of his post graduate studies would be required to submit evidence of the following so as to make him eligible to appear at the final examination of the University :-
  - (a) Scientific Publication in indexed journal - 1
  - (b) Scientific Presentations - 3
  - (c) Specialty Conferences/ PG Conventions attended - 3
- Every student would be required to appear in and qualify the Pre-University examination conducted at the college level .Post graduate students who fail to appear in or do not qualify the Pre-University examination shall not be permitted to appear in the final examination of the University.
- The University shall conduct not more than two examinations in a year for any subject with an interval of not less than 4 months and not more than 6 months between the two examinations.
- The examinations shall consist of Thesis, Theory papers and Clinical/ Practical and Oral examinations.
  - (a) **Thesis** : Thesis shall be submitted at least six months before the Theory and Clinical/ Practical and Oral examinations.
    - (1) The thesis shall be examined by a minimum of three examiners- one Internal and two External examiners.
    - (2) Only on the acceptance of the thesis by two examiners, the candidate shall be eligible to appear for the final examination.
  - (b) **Theory** :
    - (1) Theory exams will be conducted in 2 parts.
      - Part - I – Shall consist of one paper; Applied basic sciences paper at the end of the first year of MDS.The Paper I of Part I shall carry 100 marks. The question paper shall be set and evaluated by the paper setter (external examiner of the recognized university by DCI from out of the state). There shall be 10 questions of 10 marks each. The candidates shall have to secure a minimum of 50% in the basic Sciences and shall have to pass the Part I examination at least 6 months prior to the final (Part II) examination. There shall be one internal and one external examiner for three students appointed by the affiliating university for evaluating the answer scripts of the same speciality. However, the number of examiner/s may be increased with the corresponding increase in the number of students. Answer books shall be evaluated by the internal and external examiner/s and average marks shall be computed.
      - Part-II - Consisting of 3 papers, out of which 2 will be pertaining to the specialty and one shall be of Essays. Paper I and Paper II shall consist of 2 long answer questions carrying 25 marks each and five questions carrying 10 marks each. In paper III, three questions will be given and student has to answer any two questions. Each question carries 50 marks. There shall be four examiners in each subject. Out of them, two (50%) shall be external examiners and two (50%) shall be internal examiners. Both external examiners shall be from a university other than the

affiliating university and one examiner shall be from a university of different state. Answer books shall be evaluated by four examiners, two internal and two external and average marks shall be computed.

- (2) Each theory paper examination shall be of three hours duration.
- (3) Each theory paper shall carry maximum 100 marks.

**(c) Clinical / Practical and Oral Examination**

(1) Clinical / Practical (of 200 marks) and Oral Examination (of 100 marks ) will be conducted by at least four examiners, out of which two (50%) shall be External examiners who shall be invited from other recognized Universities from outside the State. The practical/ clinical examination in all the specialties shall be conducted for 6 candidates in two days: provided that practical/ clinical examination may be extended for one day, if it is not complete in two days.

(2) A candidate will be required to secure at least 50% (viz. 150/300) marks in the Practical including clinical and viva voce examinations.

- A candidate shall be required to secure at least 50% marks in theory papers and 50% marks in practical (including clinical & viva voce) separately to pass MDS Examination.

**GRACE MARKS:**

- No grace marks will be provided in MDS examinations.

**REVALUATION/SCRUTINY:**

- No Revaluation shall be permitted in the MDS examinations. However, the student can apply for scrutiny of the answer books.
- If a candidate fails in MDS Part-II examination in one or more theory paper(s) or practical, he/she shall have to reappear in all theory papers as well as practical.

**APPOINTMENT OF EXAMINERS:**

- Qualification and experience of Examiners  
The qualification and experience for the appointment of an examiner shall be as under:-
  - (1) shall possess qualification and experience of Professor in a post graduate degree programme.
  - (2) A person who is not a regular post graduate teacher in the subject shall not be appointed as an examiner.
  - (3) The internal examiner in a subject shall not accept external examinership in a college for the same academic year.
  - (4) No person shall be appointed as an external examiner for the same institution for more than 2 consecutive years. However, if there is a break of one year, the person can be reappointed.
- Criteria for pass certificate  
To pass the university examination, a candidate shall secure in both theory examination and in practical/ clinical including viva voce independently with an aggregate of 50% of total marks Allotted (50 out of 100 marks in part I examination and 150 marks out of 300 in part II examination in theory and 150 out of 300, clinical plus viva voce together). A candidate securing marks below 50% as mentioned above shall be declared to have failed in the examination. A candidate who is declared successful in the examination shall be granted a Degree of Master of Dental Surgery in respective speciality.



## **PEDODONTICS & PREVENTIVE DENTISTRY (9550)**

### **1. GOAL:**

The goals of the Post-Graduate Dental Education shall be to produce competent Pedodontists and / or Pediatric Dental Teachers.

### **2. OBJECTIVES:**

At the end of 3 years of training the candidate should be able to

1. Create not only a good oral health in the child but also a good citizen tomorrow.
2. Instill a positive attitude and behavior in children
3. Understand the principles of prevention and preventive dentistry right from birth to adolescence
4. Guide and counsel the parents in regards 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 efficiently life threatening conditions with emphasis on basic life support measures.

### **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 patient's right to information and right to seek a second opinion.
7. Develop an attitude to seek opinion from allied medical and dental specialties, as and when required

### **3. SYLLABUS:**

#### **3.1 Theory**

**Part-I:** Applied Basic Sciences  
(Applied Basic Sciences, Applied Anatomy, Physiology and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics. Growth and development, Dental plaque, Genetics)

- (1) Applied Anatomy & Genetics
- (2) Applied Physiology
- (3) Applied Pathology
- (4) Nutrition and Dietics
- (5) Growth & 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.
- (6) Microbiology & 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, Tumors , Oral Mucosal lesions etc.

#### **Part-II Paper-I:** Clinical Pedodontics

- (1) Conscious Sedation, Deep Sedation & General Anaesthesia in Pediatric Dentistry: Including Other Drugs, Synergistic and Antagonistic Actions of Various Drugs Used in Children.
- (2) Gingival & Periodontal diseases in children:
  - (a) Normal gingiva & Periodontium in children.
  - (b) Gingival & periodontal diseases – Etiology, Pathogenesis, Prevention & Management
- (3) Pediatric operative dentistry
  - (a) Principle of Operative Dentistry along with modification of materials/past, current & latest including tooth colored materials.
  - (b) Modifications required for cavity preparation in primary and young permanent teeth.
  - (c) Various Isolation Techniques
  - (d) Restorations of decayed primary, young permanent and permanent teeth in children using various restorative material like Glass Ionomer, Composites, Silver, Amalgam & latest material (gallium)
  - (e) Stainless steel, Polycarbonate & Resin Crowns / Veneers & fibre post systems.
- (4) Pediatric Endodontics:
  - (a) Primary Dentition: Diagnosis of pulpal diseases and their management- Pulp capping, Pulpotomy, Pulpectomy (Materials & Methods), Controversies & recent concepts.

- (b) Young permanent teeth and permanent teeth, Pulp capping, Pulpotomy, Apexogenesis, Apexification, Concepts, Techniques and Materials used for different procedures.
- (c) Recent advances in Pediatric diagnosis and Endodontics.
- (5) Prosthetic consideration in Pediatric Dentistry.
- (6) Traumatic injuries in children:
  - (a) Classifications & Importance.
  - (b) Sequelae & reaction of teeth to trauma.
  - (c) Management of traumatized teeth with latest concepts
  - (d) Management of jaw fracture in children.
- (7) Interceptive Orthodontics:
  - (a) Concepts of Occlusion and esthetics: 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.
  - (b) A comprehensive review of the local and systemic factors in the causation of malocclusion.
  - (c) Recognition and management of normal and abnormal developmental occlusions in primary, mixed and permanent dentitions in children (Occlusal Guidance).
  - (d) Biology of tooth movement: A comprehensive review of the principles of teeth movement. Review of contemporary literature. Histopathology of bone and Periodontal ligament, Molecular and ultra cellular consideration in tooth movement.
  - (e) Myofunctional appliances: Basic principle, contemporary appliances : Design & Fabrication
  - (f) Removable appliances: Basic principles, contemporary appliances: Design & Fabrication
  - (g) Case selection & diagnosis in interceptive Orthodontics (Cephalometrics, Image processing, Tracing, Radiation hygienic, Video Imaging & Advance Cephalometric Techniques).
  - (h) Space management: Etiology, diagnosis of space problems, analysis, Biomechanics
  - (i) Planned extraction in interceptive orthodontics.
- (8) Oral habits in children:
  - (a) Definition, Etiology & Classification
  - (b) Clinical features of digit sucking, tongue thrusting, mouth breathing & various other secondary habits.
  - (c) Management of oral habits in children
- (9) Dental care of children with special needs:
  - (a) Definition, Etiology, classification, Behavioral and Clinical features & Management of children with:
    - i. Physically handicapping conditions
    - ii. Mentally compromising conditions
    - iii. Medically compromising conditions
    - iv. Genetic disorders
- (10) Oral manifestations of systemic conditions in children & their management
- (11) Management of Minor Oral Surgical Procedures in children
- (12) Dental Radiology as related to Pediatric Dentistry
- (13) Pediatric Oral Medicine & Clinical Pathology: Recognition & Management of developmental Dental anomalies, teething disorders, stomatological conditions, mucosal lesions, viral infections etc.
- (14) Congenital abnormalities in children: Definition, Classification, Clinical features & management.

- (15) Dental Emergencies in Children and their Management
- (16) Dental Materials used in Pediatric Dentistry
- (17) Counseling in Pediatric Dentistry
- (18) Case History recording, Outline of principles of examination, diagnosis & treatment planning.
- (19) Comprehensive Infant oral Health care.
- (20) Comprehensive cleft care management with emphasis on counseling, feeding, naso-alveolar bone remodelling and speech rehabilitation.
- (21) Setting up of Pedodontics & Preventive dentistry Clinic.
- (22) Emerging concept in Pediatric Dentistry of scope of laser/minimum invasive procedures in Pediatric Dentistry.

**Part-II Paper–II: Preventive and Community Dentistry as applied to pediatric dentistry**

- (1) Child Psychology: Development & classification of behaviour, personality, intelligence in children, theories of child psychology, stages of psychological child development, fear anxiety, apprehension and its management.
- (2) Behaviour Management: Non- pharmacological & Pharmacological methods.
- (3) Child Abuse and Dental Neglect.
- (4) 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 fissures sealants, oral hygiene measures, Correlation of brushing with dental caries and periodontal diseases. Diet & nutrition as related to dental caries. Diet counselling
- (5) Dental plaque: Definition, Initiation, Pathogenesis, Biochemistry, and Morphology & Metabolism
- (6) Cariology
  - (a) Historical background
  - (b) Definition, Etiology & Pathogenesis
  - (c) Caries pattern in primary, young permanent and permanent teeth in children.
  - (d) Rampant caries, early childhood caries and extensive caries. Definition, Etiology.
  - (e) Pathogenesis, Clinical features, Complications & Management.
  - (f) Role of diet and nutrition in dental caries
  - (g) Dietary modifications & Diet counseling.
  - (h) Subjective & objective methods of caries detection with emphasis on caries activity tests, Caries prediction, Caries susceptibility & their clinical applications
- (7) Preventive Dentistry:
  - (a) Definition
  - (b) Principles & Scope
  - (c) Types of prevention
  - (d) Different preventive measures used in Pediatric Dentistry including fissure sealants and caries vaccine
- (8) Dental health Education & School Dental health programmes
- (9) Dental health concepts, Effects of civilization and environment, Dental Health delivery system, Public Health measures related to children along with principles of Pediatric preventive dentistry
- (10) Fluorides:
  - (a) Historical background
  - (b) Systemic & Topical fluorides
  - (c) Mechanism of action
  - (d) Toxicity & Management

- (e) Defluoridation Techniques.
- (11) Medico-legal aspects in pediatric dentistry with emphasis on informed consent.
- (12) Epidemiology: Concepts, Methods of recording & evaluation of various oral diseases. Various national & global trends of epidemiology of oral diseases.
- (13) Principles of Bio-Statistics & Research Methodology & Understanding of Computers and Photography

**Part-II Paper-III :Descriptive and analyzing type of question**

**3.2 Practical**

**Pre-Clinical Exercise**

To be completed by six months. Records of the Pre-clinical exercises to be approved by the guide and duly signed by the H.O.D. The Preclinical exercises should be presented during, the Final M.D.S. Examination.

- (1) Drawing album and records
  - (a) Table showing chronology of eruption of teeth.
  - (b) Table showing tooth dimensions.
  - (c) Pulp morphology.
  - (d) Development of dentition at different ages.
  - (e) Development of occlusion at different ages.
  - (f) Diagram showing cephalometric points, planes and angles.
  - (g) Table showing differences between primary and permanent teeth.
  - (h) Table showing modification of cavity preparation for primary teeth.
  - (i) Mixed dentition analysis, principles and measurements.
  - (j) Principles of soldering and welding.
  - (k) Principles and methods of rubber dam.
- (2) Carve all deciduous teeth in wax
  - (a) abcde
- (3) Preparation of special trays
- (4) Models – models of children with normal occlusion at age 3,7,11 and 14 years.
- (5) Cephalograms –learning and analysis of children with normal occlusion and morphology at 3,7,11 and 14 years.
- (6) Mixed dentition analysis – 1 case
- (7) Basic Orthodontic Exercises:
  - (a) Straightening of wire (6"-19 gauge).
  - (b) Square, triangle, UV and circle formation (2").
  - (c) Clasps- different types (3/4 clasp, Full clasp, Adam's clasp, Modifications of Adam's clasp such as additional arrow head, single arrowhead, Adam's on incisors, Adam's clasp with distal extension, Adam's clasp with helix).
  - (d) Labial bow – different types (short, long, high, split).
  - (e) Multiple loop exercises – different types of springs (Finger spring, single cantilever, double cantilever springs, canine retractors viz., U-loop, Helical, Palatal, buccal canine retractors and Robert's retractor).
  - (f) Soldering exercises – lamppost formation.
- (8) Appliances:
  - (a) Space maintainers:
    - i. Removable type
    - ii. Fixed type
      - 1) Band with loop (long & short loop).
      - 2) Transpalatal and Nance palatal holding arches.

- 3) Lingual arch with canine stoppers.
- 4) Space maintainer for guiding eruption of first permanent molar.
- (b) Space regainers:
  - i. Removable Type – dumbbell, split acrylic, slingshot
  - ii. Fixed Type – Gerber's
- (c) Habit breaking appliance:
  - i. Removable Type
  - ii. Fixed Type
- (d) Expansion plates with Coffin spring and Expansion screw
- (e) Hawley's retention appliance
- (f) Hawley's appliance with anterior bite plane.
- (g) Posterior bite plane with double cantilever springs.
- (h) Lower inclined plane.
- (i) Activator
- (j) Twin Block appliance
- (9) Conservative and Endodontic Exercises (on typodont / extracted teeth).
  - (a) Class – II Cavity in 64, 65 and 84, 85.
  - (b) Stainless Steel Crown on 74 and 85.
  - (c) Pulpotomy in 75.
  - (d) Pulpotomy in extracted teeth 51, 61, 54 or 64, 55 or 65, 75 or 85.
  - (e) Class – II MOD in 46.
  - (f) Class – I mesial and distal pit with palatal extension in 26.
  - (g) Class – I with buccal extension on 36 or 46.
  - (h) Jacket Crown on 12 or 22 and 31 or 41.
  - (i) Crown with acrylic facing on 11 or 21.
  - (j) Class – II Inlay in 37 or 47.
  - (k) Pin Restoration in 36 or 46.
  - (l) RCT in Extracted teeth 16,22,23,36 or 46.
  - (m) Post and Core crown on 11 or 21.
- (10) Proforma of behavioral rating scales and tests for children.
- (11) Computation of:
  - (a) Caries index and performing various caries activities tests.
  - (b) Oral hygiene index.
  - (c) Periodontal index.
- (12) Oral Radiology:
  - (a) Taking of periapical, occlusal bitewing radiographs in children.
  - (b) Developing and processing of films.
  - (c) Tracing of soft tissue dental and skeletal landmarks as observed on cephalometric radiographs.
  - (d) Drawing of various planes and angles.
- (13) Fixed Appliance Technique: Training shall be imparted in one basic technique i.e., Begg Technique or its derivative / Edge wise / Straight wire etc., with adequate exposure to other techniques.
  - (a) Band pinching.
  - (b) Bracket positioning and placement.
  - (c) Different stages in treatment appropriate to technique taught.

### **Clinical Requirements**

The list is the minimum requirements to be completed before the candidate appears for the Final M.D.S. Examination. Clinical records should be maintained and approved by the guide and duly certified by the H.O.D.

No.	Clinical Work	Total	7 to12 Months	13 to 24 Months	25 to 36 Months
1.	Behaviour management of different age groups children	17	2	10	5
2.	Detailed case evaluation with complete records, treatment planning and presentation of cases with chair side discussion.	17	2	10	5
3.	Step-by-step chair side preventive dentistry scheduled for high risk children with gingival and periodontal diseases and Dental Caries.	11	1	5	5
4.	Practical application of preventive dentistry concepts in a class of 35-50 children & Dental Health & Motivation.	7	1	4	2
5.	Pediatric Operative Dentistry with application of recent concepts.				
	(a) Management of Dental Caries				
	i. Class 1	50	30	10	10
	ii. Class 2	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) Pediatric Endodontic Procedures				
	i. Deciduous teeth Pulpotomy/ pulpectomy	150	30	50	70
	ii. Permanent Molars	20	03	07	10
	iii. Permanent Incisor	15	02	03	10
	iv. Apexification & Apexogenesis	20	02	08	10
6.	Stainless Steel Crowns	50	10	20	20
7.	Other Crowns	05	01	02	02
8.	Fixed : Space Maintainers Habit Breaking Appliances	30	08	12	10
9.	Removable : Space Maintainers Habit breaking appliances	20	05	07	08
10.	Functional Appliances	05	01	02	02
11.	Preventive measures like Fluoride applications & Pit and fissure sealants applications with complete follow-up and diet counseling	20	08	08	04
12.	Special Assignments				
	i. School Dental Health Programmes	03	01	01	01
	ii. Camps etc.,	02	01	01	-
13.	Management of jaw and other minor surgical procedures	05	01	02	02
14.	Full mouth rehabilitation cases under GA / Sedation	03	01	01	01
15.	Comprehensively treated and complete cases with full records	15	-	-	-

## **4. TEACHING PROGRAMME**

### **4.1 Schedule for 3 years**

#### **1st Year M.D.S.**

- (1) Theoretical exposure to basic sciences and the materials used in Pediatric and Preventive Dentistry.
- (2) Pre-clinical exercises of various preventive and interceptive orthodontic procedures including habit breaking appliances, different types of wire bending, welding / soldering exercises.
- (3) Carving of deciduous and permanent teeth, sectioning of deciduous and permanent teeth, tracing of Cephalogram etc.
- (4) A broad outline of the psychological and emotional development of a child, development and rate of intelligence, theories of growth and development and growth forecasting.
- (5) The postings in the Department of Child Psychology, Pediatric and other departments to enable the postgraduate to learn the latest developments for better applicability in Pediatric Dentistry.
- (6) Commencement of Library Dissertation in the first half of I M.D.S.
- (7) Submission of the topic for University Dissertation within six months of commencement of MDS course.

#### **2nd Year M.D.S.**

- (1) The practical applicability of the different behavioral management procedures and its implementation.
- (2) Learning the principles of developmental social behavior, speech and communication skills.
- (3) Management of handicapped children.
- (4) Clinical pediatric dentistry including restoration of decayed teeth with tooth colored restorative materials, etc.
- (5) Pediatric Endodontics, Preventive and interceptive procedures, Chair side Preventive Dentistry Procedures.
- (6) Management of traumatic injury cases.
- (7) Submission of Library Dissertation by the middle of second year.
- (8) Commencement of University Dissertation.

#### **3rd Year M.D.S.**

- (1) University Dissertation should be submitted 6 months prior to final examinations.
- (2) Understanding the principles of cariology, nutrition, diet and dental / oral health.
- (3) In-depth study of indices of dental caries, periodontal diseases and malocclusion.
- (4) Planning of oral health survey.
- (5) Detailed clinical procedures involving restoration, Endodontics,
- (6) Preventive and Interceptive Orthodontic procedures, etc.
- (7) Diet recording and counseling.
- (8) Preventive Dentistry.
- (9) Chair side procedures in management of children with blood dyscrasias and other medically compromised children.
- (10) Minor Oral Surgical and Surgical Endodontic procedure.
- (11) Patient management under general anaesthesia.
- (12) Management of children with cleft lip and cleft palate.



**Clinical Postings in Other Specialties:**

- (1) Candidates will be posted on rotation to the various departments like
  - (a) Pediatric surgery and Pediatric Medicine
  - (b) Psychology

**Special Assignments:**

- (1) School Health Program: During the course candidate should submit a project report of their work.
- (2) Library dissertation: The topic for Library dissertation should be finalized and approved by the end of first six months and the same should be submitted by the middle of 2nd year, approved by the guide and certified by the H.O.D.
- (3) Dissertation: Subject and protocol for the dissertation to be submitted within the first six month of commencement of course. He / she should complete the work and submit the dissertation 6 months before university examination.

**Academic Assignments:**

- (1) Lectures and Seminars on Basic Sciences.
- (2) Seminars and Journal Club on specialty subject.
- (3) Case presentations and discussion.
- (4) Lecture classes and Clinical discussions for Under-graduate students.
- (5) Attending Workshops / continuing dental education programs.
- (6) At least three scientific presentations.
- (7) At least one scientific paper and a case report should be published in an indexed journal.

Before the University Examination, submission of all clinical records of work done during the entire 3 years period with the approval of the Post-graduate teacher, Head of the Department and Head of the Institution. Submission of Clinical Photographs, Clinical Records and University Dissertation, etc.

**5. SCHEME OF EXAMINATION**

5.1 Theory: Total 400 Marks

Part-I : Basic Sciences Paper – 100 Marks

Part – II : Paper-I, Paper-II & Paper-III- 300 Marks (100 Marks for each Paper)

- (1) Part-I : examination shall consist of Basic sciences paper of three hours duration and shall be conducted at the end of First year of MDS courses. Paper shall be of 100 marks and there shall be 10 questions of 10 marks each. The candidates shall have to secure a minimum of 50% in the Basic Sciences and shall have to pass the Part-I examination at least six months prior to the final (Part-II) examination.
- (2) Part – II Examination shall be conducted at the end of Third year of MDS course and shall consist of Paper-I, Paper-II and Paper –III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper – III will be on Essays in which three questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers.

## Nomenclature of Papers

### Part- I (9551) Applied Basic Sciences

(Applied basic sciences: Applied Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, Research methodology and Biostatistics, Growth and Development, Dental plaque and Genetics)

### Part - II

#### Paper I (9552) Clinical Pedodontics

Clinical Pedodontics Dentistry: Sedation in pediatric dentistry, gingival and periodontal disease in children, pediatric operative dentistry, pediatric endodontics, pediatric endodontics, traumatic injuries in children, interceptive orthodontics, oral habits, dental care of child with special needs, oral manifestations of systemic disease in children, minor oral surgery in children, dental radiology as related to pediatric dentistry, pediatric oral medicine and clinical pathology, congenital abnormalities, dental emergencies in children, dental materials in Pedodontics, case history, setting up of Pedodontics clinic.

#### Paper II (9553) Preventive and Community Dentistry as applied to Pediatrics Dentistry

Preventive and Community Dentistry as applied to pediatric dentistry: Child psychology, behavior, child abuse and neglect, preventive Pedodontics, cariology, preventive dentistry, dental health education and school health program, fluorides, epidemiology, comprehensive infant oral health, comprehensive cleft care, principles of biostatistics and research methodology, understanding of computers and photography.

#### Paper III (9554) –Descriptive and analyzing type of question

### 5.2 Practical examination:

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

#### 1st Day

(a)	Pulp Therapy on a Primary Molar –		
	- Case Discussion	:	20
	- Rubber Dam Application	:	10
	- Working Length (X-ray) / Canal Preparation	:	20
	- Obturation	:	20
	<b>TOTAL</b>	<b>:</b>	<b>70</b>
(b)	Crown Preparation of Primary Molar for Stainless steel crown		
	- Case Discussion	:	10
	- Crown Preparation	:	20
	- Crown Selection and Cementation	:	20
	<b>TOTAL</b>	<b>:</b>	<b>50</b>
(c)	Band Adaptation for Fixed type of Space Maintainer and Impression making		
	- Case Discussion	:	20
	- Band Adaptation	:	20
	- Impression	:	20
	<b>TOTAL</b>	<b>:</b>	<b>60</b>

#### 2nd Day

(a)	Evaluation of Fixed Space Maintainer		
	- Cementation	:	20
	<b>TOTAL</b>	<b>:</b>	<b>200</b>

(3) Viva voce: 100 marks

(a) Viva voce – 80 marks: Examiners will conduct viva voce on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents and presentation and discussion of dissertation also.

(b) Pedagogy exercise – 20 marks: A topic will be given to each candidate in the beginning of clinical examination and they are asked to make a presentation on the topic for 8-10 min.

## **6. BOOKS:**

### **Core Books**

1. Child management in dentistry – Wright
2. Clinical Pedodontics – S. Finn
3. Clinical use of Furoides – Stephan Wei
4. Community dental health – Jony
5. Cariology – Newbrun
6. Cariology – Nikiforuk
7. Dentistry for child and Adolesence – Mcdonold and
8. Fundamental of Pediatric Dentistry – Mathenwson
9. Essential of dental caries – Kidd
10. Kennedy's Pediatric Operative Dentistry – Kennedy
11. Pediatric Dentistry Scientific foundation – Stewart
12. Pediatric Dentistry – Welbusy
13. Pediatric Dentistry Infancy through Adolesence – Casamea
14. Pedodontics clinical approach – Koch
15. Traumatic Injuries to teeth – Andearsen
16. Text book of pediatric dentistry – NiktilMarwah
17. Text book of Pediatric dentistry – Damle
18. Text book of Pedodontics – ShobhaTandon
19. Pediatric Dentistry Principles and Practice – Muthu
20. Principle and Practice of Pediatric Dentistry – Rao

### **Guide Books**

1. Development of Dentition – Linden
2. Tooth Colored Restorative– Albus
3. Removable Orthodontic appliances – Adams
4. Nutrition In Preventive dentistry – Nixel
5. Pediatric dental medicine – Foresta
6. Practical Infection Control – Cottone
7. Minor tooth movement in children – Sim
8. Forensic Dentistry – Mertz
9. Endodontic therapy – Weine
10. Endodontic practice – Grossman
11. Primary Preventive dentistry – Normann Harris
12. Local Anesthesia – Monheim's
13. Essential of oral pathology – Kawson
14. Oral and Maxiufacial lesion – Wood
15. Orthodontic principles and techniques – Graber
16. Atlas of LIC – Mount
17. Minor oral surgery – Kaban

**Journals**

- (1) ASDC Journal of Dentistry for Children.
- (2) International Journal of Pediatric Dentistry.
- (3) Pediatric Dentistry Journal.
- (4) Journal of Clinical Pediatric Dentistry.
- (5) Journal of Indian Society of Pedodontics and Preventive Dentistry.
- (6) International Journal of Clinical Pediatric Dentistry
- (7) European Journal of Pediatric Dentistry
- (8) Japanese Journal of Pediatric Dentistry

## MODEL PAPER

**M.D.S. Part-I**  
**9551**

**Bas.Sci.-I**

Master of Dental Surgery Part-I Examination Month Year  
**PAEDODONTICS AND PREVENTIVE DENTISTRY**

### **Applied Basic Sciences**

(Applied basic sciences: Applied Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, Research methodology and Biostatistics, Growth and Development, Dental plaque and Genetics)

Time: Three Hours  
Maximum Marks: 100

Attempt all Questions.

All the parts of one question should be answered at one place in sequential order.  
Illustrate your answers with suitable diagrams, wherever necessary.

- |      |                                                                                              |    |
|------|----------------------------------------------------------------------------------------------|----|
| Q.1  | What are chemical mediators of inflammation. Discuss the vascular events during information. | 10 |
| Q.2  | Course and distribution of mandibular nerve.                                                 | 10 |
| Q.3  | What are the major and minor structure of enamel.                                            | 10 |
| Q.4  | Explain the composition, secretion, function of saliva.                                      | 10 |
| Q.5  | Skeletal age vs dental age.                                                                  | 10 |
| Q.6  | Discuss the blood supply, nerve supply, lymphatic drainage of tongue.                        | 10 |
| Q.7  | Explain the prenatal development of maxilla and post natal development of mandible.          | 10 |
| Q.8  | What are theories of growth and explain FMC.                                                 | 10 |
| Q.9  | Food guide pyramids - evolution and current concept.                                         | 10 |
| Q.10 | Discuss amelogenesis in detail with diagram.                                                 | 10 |

## MODEL PAPER

M.D.S. Part-II  
9552

Clin.Pedo.Denti.-I

Master of Dental Surgery Part-II Examination Month Year  
**PAEDODONTICS AND PREVENTIVE DENTISTRY**

Paper-I  
**Clinical Pedodontics**

Time: Three Hours  
Maximum Marks: 100

Attempt all Questions.

All the parts of one question should be answered at one place in sequential order.

Illustrate your answers with suitable diagrams, wherever necessary.

- Q.1 Classify and discuss the etiopathology of trauma to anterior teeth in children. Describe in detail the management of trauma to anterior teeth in a 9 year old child with reference to present techniques and strategies. 25
- Q.2 Discuss in detail the histopathology of a deep carious lesion in a young permanent tooth. Describe in detail the management of pulp in a deeply carious tooth with reference to recent treatment modalities. 25
- Q.3 Short notes: 5x10= 50
- (a) Calcium hydroxide.
  - (b) Space regainers.
  - (c) Pedodontic clinic.
  - (d) Hand wrist radiographs.
  - (e) Teething problems.

**MODEL PAPER**

**M.D.S. Part-II  
9553**

**Prev.Comm.Denti.Appl.-II**

Master of Dental Surgery Part-II Examination Month Year  
**PAEDODONTICS AND PREVENTIVE DENTISTRY**

Paper-II

**Preventive and Community Dentistry as applied to Pediatrics Dentistry**

Time: Three Hours  
Maximum Marks: 100

Attempt all Questions.

All the parts of one question should be answered at one place in sequential order.

Illustrate your answers with suitable diagrams, wherever necessary.

- Q.1 Define dental caries. Explain in detail the etiopathology of rampant and early childhood caries with reference to recent concepts in treatment modalities. 25
- Q.2 Define and explain caries risk assessment in detail. What are the various caries activity tests commonly employed chair side. Explain in detail. 25
- Q.3 Short Notes 5x10 =50
- (a) Plaque.
  - (b) Cariogram.
  - (c) Dental fluorosis.
  - (d) QLF.
  - (e) Chlorohexidine.

**MODEL PAPER**

**M.D.S. Part-II  
9554**

**Essay.-III**

Master of Dental Surgery Part-II Examination Month Year  
**PAEDODONTICS AND PREVENTIVE DENTISTRY**

Paper-III

**Descriptive and analyzing type question**

Time: Three Hours  
Maximum Marks: 100

Answer any two questions.

All the parts of one question should be answered at one place in sequential order.

Illustrate your answers with suitable diagrams, wherever necessary.

Q.1	Fluorides	50
Q.2	Fear and anxiety	50
Q.3	Management of caries	50