SYLLABUS

MDS - PERIODONTOLOGY (9510)

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 of 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 basics 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 unfiled 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.

REVEALUATION/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.

PERIODONTOLOGY (9510)

1. GOALS:

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

(1) Develop knowledge and skills in the science and practice of Periodontology and Oral Implantology.

(2) Develop teaching skills in the field of Periodontology and Oral Implantology.

2. OBJECTIVES:

A) KNOWLEDGE:

Discuss historical perspective to advancement in the subject proper and related topics.

- Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population
- Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal pathology
- Describe various preventive periodontal measures
- Describe various treatment modalities of periodontal disease from historical aspect to currently available ones
- Describe interrelationship between periodontal disease and various systemic conditions
- Describe periodontal hazards due to estrogenic causes and deleterious habits and prevention of it
- Identify rarities in periodontal disease and environmental/Emotional determinates in a given case
- Recognize conditions that may be outside the area of his/her Speciality/ competence and refer them to an appropriate Specialist
- Decide regarding non-surgical or surgical management of the case
- Update the student by attending courses, conferences and seminars relevant to periodontics or by self-learning process.
- Plan out/ carry out research activity both basic and clinical aspects with the aim of publishing his/her work in scientific journals
- Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated
- Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis and adult periodontitis in Indian population (Region wise)
- Shall develop knowledge, skill in the science and practice of Oral Implantology
- Shall develop teaching skill in the field of Periodontology and Oral Implantology
- Principals of Surgery and Medical Emergencies.
- To sensitize students about inter disciplinary approach towards the soft tissues of the oral cavity with the help of specialist from other departments.

B) SKILLS:

- Take a proper clinical history, thorough examination of intra oral, extra oral, medical history evaluation, advice essential diagnostic procedures and interpret them to come to a reasonable diagnosis

- Effective motivation and education regarding periodontal disease maintenance after the treatment
- Perform both non-surgical & education regarding periodontal disease, maintenance after the treatment
- Perform both non-surgical and surgical procedures independently
- Provide Basic Life Support Service (BLS) recognizes the need for advance life support and does the immediate need for that.
- Human values, ethical practice to communication abilities

A) KNOWLEDGE:

- Discuss historical perspective to advancement in the subject proper and related topics.
- Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population
- Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal pathology
- Describe various preventive periodontal measures
- Describe various treatment modalities of periodontal disease from historical aspect to currently available ones
- Describe interrelationship between periodontal disease and various systemic conditions
- Describe periodontal hazards due to estrogenic causes and deleterious habits and prevention of it
- Identify rarities in periodontal disease and environmental/Emotional determinates in a given case
- Recognize conditions that may be outside the area of his/her Speciality/ competence and refer them to an appropriate Specialist
- Decide regarding non-surgical or surgical management of the case
- Update the student by attending courses, conferences and seminars relevant to periodontics or by self-learning process.
- Plan out/ carry out research activity both basic and clinical aspects with the aim of publishing his/her work in scientific journals
- Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated
- Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis and adult periodontitis in Indian population (Region wise)
- Shall develop knowledge, skill in the science and practice of Oral Implantology
- Shall develop teaching skill in the field of Periodontology and Oral Implantology
- Principals of Surgery and Medical Emergencies.
- To sensitize students about inter disciplinary approach towards the soft tissues of the oral cavity with the help of specialist from other departments.

B) SKILLS:

- Take a proper clinical history, thorough examination of intra oral, extra oral, medical history evaluation, advice essential diagnostic procedures and interpret them to come to a reasonable diagnosis
- Effective motivation and education regarding periodontal disease maintenance after the treatment

- Perform both non-surgical & education regarding periodontal disease, maintenance after the treatment
- Perform both non-surgical and surgical procedures independently
- Provide Basic Life Support Service (BLS) recognizes the need for advance life support and does the immediate need for that.
- Human values, ethical practice to communication abilities
- Adopt ethical principles in all aspects of treatment modalities; Professional honesty & integrity are to be fostered. Develop Communication skills to make awareness regarding periodontal disease Apply high moral and ethical standards while carrying out human or animal research, Be humble, accept the limitations in his/her knowledge and skill, and ask for help from colleagues when needed, Respect patients' rights and privileges, including patients right to information and right to seek a second opinion.
- To learn the principal of lip repositioning and perio-esthetics surgeries.

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

(1) Describe historical perspective of the subject to the recent advancements

(2) Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases especially in Indian population

(3) Understand biochemical, microbiological, immunological and genetic aspects of periodontal pathology

(4) Demonstrate preventive and treatment modalities of various periodontal diseases.

(5) Refer patients as needed to an appropriate specialist.

(6) Engage in research activities

(7) Take thorough history, perform examination both oral and systemic, advice relevant investigations and plan treatment both surgical and non surgical, as needed, for various periodontal diseases.

(8) Adopt ethical principles while treating patients.

3. SYLLABUS:

3.1 Theory

Part-I (9511) : Applied Basic Science
(Applied Basic Science, Applied Anatomy, Physiology and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics).

(1) Embryology

(2) Development and growth of head and neck with more emphasis on
   (a) Maxilla,

(b) Mandible,
(c) Tongue,
(d) Muscles of mastication,
(e) Oropharynx,
(f) Temporomandibular joint
(g) Tooth,
(h) Related cranial nerves (v, vii, ix, x, xi, xiii)

(3) Ultra-structure of cell and connective tissue

Applied Anatomy:

(1) Development of the tooth and periodontium.
(2) Classification of Epithelia, their structure and functions.
(3) Micro & macro structural anatomy & biology of periodontal tissues
(4) Age changes in Periodontal tissues.
(5) Anatomy of Periodontium
(a) Macroscopic & microscopic anatomy
(b) Blood supply of the Periodontium
(c) Lymphatic system of Periodontium
(d) Nerves of the Periodontium.
(6) Temporomandibular joint, Maxilla & Mandible.
(7) Nerve supply of oral cavity
(8) Tongue & Oropharynx.
(9) Muscles of mastication.
(10) Salivary Glands.

Physiology:

(1) Blood
(2) Respiratory system, knowledge of respiratory diseases which are a cause of periodontal disease (Periodontal Medicine)
(3) Cardiovascular system
(a) Circulatory system
(b) Blood pressure
(c) Normal ECG
(d) Shock
(4) Endocrinology – Hormones and their influence on periodontium with more emphasis on Sex hormones
(a) Their action, regulation & role in periodontal diseases
(b) Family planning methods
(5) Gastrointestinal system
(a) Salivary secretion-composition, functions & regulation
(6) Reproductive physiology
(7) Nervous system
(a) Pain pathways
(b) Taste-taste buds, primary taste sensation & pathways for sensation
(8) Acidosis and Alkalosis

Biochemistry:

(1) Basics and metabolism of Carbohydrates, Lipid, Proteins, Vitamins, Minerals and Trace elements
(2) Diet & nutrition & Periodontium
(3) Biochemical tests & their significance

(4) Calcium & Phosphorus
(5) Enzymes

Pathology:
(1) Cell structure & metabolism
(2) Inflammation & repair, necrosis & degeneration
(3) Immunity & Hypersensitivity
(4) Circulatory disturbances-edema, hemorrhage, shock, thrombosis, embolism infarction & hypertension
(5) Disturbances of nutrition & metabolism
(6) Diabetes mellitus
(7) Cellular growth & differentiation, regulation
(8) Lab investigations
(9) Blood

Microbiology:
(1) General Bacteriology
  (a) Identification of Bacteria
  (b) Culture media & methods
  (c) Sterilization & Disinfection
  (d) Control of Infection and cross infection.
(2) Immunology & Infection
(3) Systemic Bacteriology with special emphasis on Oral Microbiology (Streptococci, actinomyces& other filamentous bacteria Aggregatibacteractinomycetemcomitans and periodontal pathogens).
(4) Virology
  (a) General properties of viruses
  (b) Herpes, Hepatitis virus, HIV virus
(5) Mycology
  (a) Candidiasis
(6) Applied Microbiology
(7) Diagnostic microbiology & immunology, hospital infections & management

Pharmacology:
(1) General Pharmacology
  (a) Definitions-Pharmacokinetics with clinical applications, routes of administrations including local drug delivery in Periodontics.
  (b) Adverse drug reactions & drug interactions.
(2) Detailed pharmacology of
  (a) Analgesics-Opioid &nonopioid
  (b) Local anaesthetics
  (c) Haematinics& coagulants, anticoagulants
  (d) Vit. D & calcium preparations
  (e) Antidiabetic drugs
  (f) Steroids
  (g) Antibiotics
  (h) Antihypertensives
  (i) Immunosuppressive drugs & their effects on oral tissues
  (j) Antiepileptic drugs
(3) Brief Pharmacology, dental use & adverse effects of
  (a) General anaesthetics

(b) Antipsychotics
(c) Antidepressants
(d) Anxiolytic drugs
(e) Sedatives
(f) Antiepileptics
(g) Antihypertensives
(h) Antianginal drugs
(I) Diuretics
(j) Hormones
(k) Pre-anaesthetic medications

(4) Drugs used in bronchial asthma, cough
(5) Drug therapy of
(a) Emergencies
(b) Seizures
(c) Anaphylaxis
(d) Bleeding
(e) Shock
(f) Diabetic ketoacidosis
(g) Acute addisonian crisis
(6) Dental pharmacology
(a) Antiseptics
(b) Astringent
(c) Sialogogues
(d) Disclosing agents
(e) Antiplaque agents
(7) Flouride Pharmacology

Biostatistics:
(1) Introduction, definition and branches of biostatistics
(2) Collection of data, sampling, types, bias and errors
(3) Compiling data-graphs and charts
(4) Measure of central tendencies (mean, median & mode), standard deviation and variability
(5) Tests of significance (chi square test, 't' test and z-test)
(6) Null hypothesis

Part-II Paper I (9512): Normal Periodontal structure, Etiology and Pathogenesis of Periodontal Diseases, epidemiology as related to Periodontics

(1) Classification of Periodontal diseases and conditions
(2) Epidemiology of gingival and periodontal diseases
(3) Defense mechanism of Gingiva
(4) Periodontal Microbiology
(5) Basic concepts of immunity and inflammation
(6) Microbiologic interaction with the host in periodontal diseases
(7) Pathogenesis of Plaque associated Periodontal diseases
(8) Dental calculus
(9) Role of Iatrogenic and other local factors
(10) Genetic factors associated with Periodontal diseases
(11) Influence of systemic diseases and disorders on Periodontium
(12) Role of environmental factors in the etiology of Periodontal diseases
(13) Stress and Periodontal diseases

(14) Occlusion and Periodontal diseases
(15) Smoking and tobacco in the etiology of Periodontal diseases
(16) AIDS and Periodontium
(17) Periodontal Medicine
(18) Dentinal hypersensitivity

Part-II Paper-II (9513): Periodontal diagnosis, therapy and Oral Implantology.

Clinical Periodontology includes gingival diseases, periodontal diseases, periodontal instrumentation, diagnosis, prognosis & treatment of periodontal diseases

Gingival Diseases:
(1) Gingival inflammation
(2) Clinical features of gingivitis
(3) Gingival enlargement
(4) Acute gingival infections
(5) Desquamative gingivitis & Oral mucous membrane diseases
(6) Gingival diseases in the childhood

Periodontal Diseases:
(1) Periodontal pocket
(2) Bone loss & patterns of bone destruction
(3) Periodontal response to external forces
(4) Masticatory system disorders
(5) Chronic Periodontitis
(6) Aggressive Periodontitis
(7) Necrotising ulcerative periodontitis
(8) Interdisciplinary approaches
    (a) Orthodontics
    (b) Endodontics
(9) Periodontal considerations in restorative therapy

Treatment of Periodontal Diseases:
(1) History, examination, diagnosis, prognosis and treatment planning
    (a) Clinical diagnosis
    (b) Radiographic and other aids in the diagnosis of Periodontal diseases
    (c) Advanced diagnostic techniques
    (d) Risk assessment
    (e) Determination of Prognosis
    (f) Treatment plan
    (g) Rationale for Periodontal treatment
    (h) General Principles of anti-infective therapy with special emphasis on infection control in periodontal practice
    (i) Halitosis and its treatment
    (j) Bruxism and its treatment
(2) Periodontal instrumentation
    (a) Instrumentation
    (b) Principles of periodontal instrumentation
    (c) Instruments and Instrumentation used in different parts of the mouth
(3) Periodontal therapy
    (a) Preparation of tooth surface
    (b) Plaque control

(c) Antimicrobial and other drugs used in periodontal therapy
(d) Wasting diseases of teeth
(e) Periodontal management of HIV infected patients
(f) Occlusal evaluation and therapy in the management of periodontal diseases
(g) Role of Orthodontics as an adjunct to periodontal therapy
(h) Special emphasis on precautions and treatment for medically compromised patients
(i) Periodontal splints
(j) Management of Dentinal hypersensitivity

(4) Periodontal surgical phase-special emphasis on drug prescription
(a) General principles of periodontal surgery
(b) Surgical anatomy of Periodontium and related structures
(c) Gingival curettage
(d) Gingivectomy technique
(e) Treatment of Gingival enlargements
(f) Periodontal flap
(g) Osseous surgery (resective and regenerative)
(h) Furcation; Problem and its management
(i) The Periodontal-Endodontic continuum
(j) Periodontic plastic and esthetic surgery
(k) Recent advances in surgical techniques

(5) Future directions and controversial questions in Periodontal therapy
(a) Future directions for infection control
(b) Research directions in regenerative therapy
(c) Future directions in anti inflammatory therapy
(d) Future directions in Measurement of periodontal diseases

(6) Periodontal maintenance phase
(a) Supportive periodontal treatment
(b) Results of periodontal treatment

Oral Implantology

(1) Introduction and historical review
(2) Biological, clinical and surgical aspect of dental implants
(3) Diagnosis and treatment planning
(4) Implant surgery
(5) Prosthetic aspect of Dental implants
(6) Diagnosis and treatment of Peri implant complications
(7) Special emphasis on plaque control measures in implant patients
(8) Maintenance phase

Management of Medical Emergencies In Periodontal Practice

Part-II Paper-III (9514): Descriptive and analyzing type question

TEACHING / LEARNING ACTIVITIES:
The post graduate is expected to complete the following at the end of:

S.NO	Year Wise	ACTIVITIES WORKS TO BE DONE

1.	Module 1 **(First Year**)	Orientation to the PG program **Pre-clinical work (4 months)** a **a. Dental** b 1. Practice of incisions and suturing techniques on the typodont models. c 2. Fabrication of bite guards and splints. d 3. Occlusal adjustment on the casts mounted on the articulator e 4. X-ray techniques and interpretation. f 5. Local anaesthetic techniques. g 6. Identification of Common Periodontal Instruments. h 7. To learn science of Periodontal Instruments maintance (Sharpening , Sterlization and Storate) i 8. Concept of Biological width j k a. Typhodont Exercise l (i) Class II Filling with Band and Wedge Application m (ii) Crown cuttings n b. Medical o 1. Basic diagnostic microbiology and immunology, collection and handling of

sample and culture techniques.

p 2. Introduction to genetics, bioinformatics.

q 3. Basic understanding of cell biology and immunological diseases.

r

s Clinical work

t 1. Applied periodontal indices 10 cases

u 2. Scaling and root planning:- with Proper written history

v

w a. Manual 20 Cases

x b. Ultrasonic 20 Cases

y 3. Observation / assessment of all periodontal procedures including implants

z

aa

bb

2.	**Module 2** (**First Year**)	1. Interpretation of various bio-chemical investigations. 2. Practical training and handling medical emergencies and basic life support devices. 3. Basic biostatistics – Surveying and data analysis. **Clinical** 1. Case history and treatment planning 10 cases

		2. Root planning 50 cases 3. Observation / assessment of all periodontal procedures including implant. 4. Selection of topic for Library dissertation and submission of Dissertation Synopsis.
3.	**Module 3** (**First Year**)	Minor surgical cases 20 cases (i) Gingival Depigmentation 3 Cases (ii) Gingival Curettage no limits (iii) ENAP 1 Case (iv) Gingivectomy/ Gingivoplasty 5 cases (v) Operculectomy 3 cases Poster Presentation at the Speciality conference
4.	**Module 4** (Second Year)	Clinical work 1. Case history and treatment planning 10 cases 2. Occlusal adjustments 10 cases 3. Perio splints 10 cases 4. Local drug delivery techniques 5 cases 5. Screening cases for dissertation
5.	**Module 5** (Second Year)	1. Periodontal surgical procedures. a. Basic flap procedures 20 cases 2. Periodontal plastic and esthetic 10 cases a. Increasing width of attached gingival 5 cases
a	b. Root coverage procedures / Papilla	

			Preservation and Reconstruction 5 cases
		b	c. Crown lengthening procedures 5 cases
		c	d. Frenectomy 5 cases
		d	e. Vestibuloplasty 5 cases
			3. Furcation treatment (Hemisection, Rootsection, Tunelling) 5 cases
			4. Surgical closure of diastema. 2 cases
6.	**Module 6** (Third Year)		1. Ridge augmentation procedures 5 cases 2. Implants Placements and monitoring 5 cases 3. Sinus lift procedures 2 cases 4. Case selection, preparation and investigation of implants. 5. Interdisciplinary Periodontics 2 each (i) Ortho – Perio (ii) Endo – Perio (iii) Restorative Perio (iv) Preprosthetic (v) Crown Prep 6. Osseous Surgery 2 each (i) Resective (ii) Regenerative 7. Scientific paper/ poster presentation at the conference.
7.	**Module 7** (Third Year)		Clinical work 1. Flap surgeries & regenerative techniques 25 cases (using various grafts & barrier membranes)

		2. Assistance / observation of advanced surgical procedure 5 each 3. Micro Surgery 5 each 4. Record maintenance & follow-up of all treated cases including implants. 5. Submission of dissertation – 6 months before completion of III year. 6. Scientific paper presentation at conferences.
8.	**Module 8** (Third Year)	1. Refining of surgical skills. 2. Publication of an article in a scientific journal. 3. Preparation for final exams.
9.	**Module 9** (Third Year)	1. Preparation for final exams. 2. University exam

Note: Maintenance of Work Diary / Check list / Log books as prescribed.

ASSESSMENT EXAMINATION:
In addition to regular evaluation, log book etc., Assessment examination will be conducted after every 3 modules & progress of the student monitored.

MONITORING LEARNING PROGRESS:
The learning progress of each candidate will be monitored through continuous appraisal and regular assessment. The monitoring is to be done based on participation of students in various teaching / learning activities using structured checklists that assess various aspects.

3.2 Practical

1st Year

Pre Clinical work

Dental
(1) Practice of incision and suturing technique on the typhodont models
(2) Fabrication of bite guard and splints

(3) Occlusal adjustment of the cast mounted on the articulator
(4) X-ray techniques and interpretation
(5) Local Anesthetic techniques

Medical

(1) Basic diagnostic microbiology and immunology, collection and handling of samples, culture technique
(2) Basic understanding of immunological diseases
(3) Interpretation of various biochemical investigations
(4) Practical training and handling of medical emergencies and basic life support system
(5) Basic Biostatistics surveying and data analysis

Clinical work

(1) Applied Periodontal indices	10 cases
(2) Scaling and root planing (SRP)	
(a) Hand	15 cases
(b) Ultrasonic	15 cases
(3) Curettage	10 cases
(4) Gingivectomy	20 cases
(5) Gingivoplasty	10 cases

2nd Year

(1) Clinical work	10 cases
(2) Case history and treatment planning	05 cases
(3) Local drug delivery technique	
(4) Periodontal surgical procedure	
(a) Pocket therapy (flap surgery)	20 cases
(b) Muco gingival surgeries	5 cases
(c) Implants	2 cases
(d) Management of perio endo problems	3 cases
(5) Occlusal adjustments	10 cases
(6) Perio splints	10 cases

3rd Year

Clinical Work

(1) Regenerative techniques:
- Using various graft and barrier membranes

(2) Records, maintenance and follow up of all treated cases including implants
(3) Assessment examinations: In addition to the regular evaluation, log book etc. assessment examination will be conducted once every six months and progress of the students monitored.

4. TEACHING PROGRAMME:

4.1 Teaching/ Learning Activities

(1) Seminars: A minimum of 15 seminars to be presented by each student during the P.G. course (at least 5 seminars per year)
(2) Journal clubs: A minimum of 15 journal articles to be reviewed by each student during the P.G. course.

(3) Interdepartmental seminar: Each P.G. student should present at least 1 seminar in an interdepartmental meeting during the P.G. course. Such meetings may be held at least once a month.
(4) Library assignment: One topic to be presented at the end of 18 months of the course

4.2 Academic Activities

(1) Submission of synopsis for dissertation- within 6 months from the start of the course
   (a) Library assignment – to be submitted at the end of eighteen months of course.
   (b) Scientific publication - One
   (c) Scientific presentations - Three
   (d) Specialty Conferences/PG Convocations attended - Three
   (e) Submission of dissertation – 6 months before completion of III year

5. SCHEME OF EXAMINATION:

5.1 Theory : 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 (9511) : Applied Basic Science
(Applied Basic Science, Applied Anatomy, Physiology and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics).

Part - II

Paper I (9512) Normal Periodontal structure, Etiology and Pathogenesis of Periodontal Diseases, epidemiology as related to Periodontics

Paper II (9513) Periodontal diagnosis, therapy and Oral Implantology

Paper III (9514) Descriptive and analyzing type question

5.2 Practical Examination: 200 Marks

The clinical examination shall be of two days duration

1st day

Case discussion

- • Long case - One
- • Short case - One

Periodontal surgery – Periodontal Surgery on a previously prepared case after getting approval from the examiners

2nd day

Post-surgical review and discussion of the case treated on the 1st day

Presentation of dissertation & discussion

All the examiners shall participate in all the aspects of clinical examinations / Viva Voce

Distribution of Marks for Clinical examination (recommended)

a) Long Case discussion			75
b) 1 short case			25
c) Periodontal surgery	1.	Anesthesia	10
	2.	Incision	20
	3.	Post Surgery Evaluation	25
	4.	Sutures	10
	5.	Pack (if any)	10
Post – operative review			25
Total			**200**

Viva Voce : 100 marks

(1) Viva voce examination: 80 marks
All examiners 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.

(2) Pedagogy: 20 marks
A topic is 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.

MODEL PAPER

M.D.S. Part-I **Bas.Sci.-I**
9511

Master of Dental Surgery Part-I Examination Month Year

PERIODONTOLOGY

Applied Basic Sciences

(Applied Basic Science, Applied Anatomy, Physiology and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics)

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	Mention the role and limitations of antibiotics in Periodontics.	10
Q.2	Discuss the composition & function of blood. Add a note on clotting mechanism.	10
Q.3	Discuss the role of Cytokines in etiology of Periodontal diseases.	10
Q.4	Discuss the formation, composition and significance of Gingival Crevicular fluid.	10
Q.5	Implant Bone interface.	10
Q.6	Discuss the development, ossification and age changes in the mandible.	10
Q.7	Explain with diagram - Dentogingival junction and gingival sulcus	10
Q.8	Discuss the role of fat soluble vitamins in Periodontal health	10
Q.9	Statistical tests of significance	10
Q.10	Define Inflammation. Describe its clinical features. Add a note on chemical mediators of inflammation.	10

MODEL PAPER

M.D.S. Part-II **Etiopatho.-I**
9512

Master of Dental Surgery Part-II Examination Month Year

PERIODONTOLOGY

Paper - I

Normal Periodontal structure, Etiology and Pathogenesis of Periodontal Diseases, epidemiology as related to Periodontics

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 Discuss the current thinking on the role of nutrition in periodontal disease. 25

Q.2 Describe the role of systemic factors in etiopathogenesis of gingival and periodontal diseases. 25

Q.3 **Short Notes** 5x10=50

a) Acute Necrotizing Ulcerative gingivitis
b) Risk factors for Aggressive Periodontitis
c) Implementation of evidence based dentistry into periodontal clinical practice
d) Halitosis
e) Specific and non-specific plaque hypothesis and current concepts

MODEL PAPER

M.D.S. Part-II **Clin.Perio.Oral.Impl.-II**
9513

Master of Dental Surgery Part-II Examination Month Year

PERIODONTOLOGY

Paper - II

Periodontal diagnosis, therapy and Oral Implantology

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 Discuss the role of various chairside diagnostic kits in periodontal diagnosis. 25

Q.2 Describe in detail the dietary modulation of the inflammatory cascade as a part of periodontal therapy 25

Q.3 **Short Notes** 5x10=50

a) Splints in periodontal therapy
b) Current concepts in root biomodification
c) Explain wound healing in furcation defects
d) Factors responsible for failure of periodontal therapy
e) Prevention and management of peri-implantitis

MODEL PAPER

M.D.S. Part-II **Essay.-III**
9514

Master of Dental Surgery Part-II Examination Month Year

PERIODONTOLOGY

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	Describe the impact of periodontal infection on systemic health.	50
Q.2	Chemotherapeutic agents for the treatment of periodontal diseases.	50
Q.3	Interdisciplinary Periodontics.	50