



**AMRITA**  
VISHWA VIDYAPEETHAM

School of  
Dentistry

**MASTER OF DENTAL SURGERY  
(MDS)-  
Periodontology (MDS.PRD)  
(As per the Regulations of Dental Council of India)**



**Our Inspiration**



**H.H. Mata Amritanandamayee Devi  
Hon. Chancellor, Amrita Vishwa Vidyapeetham**

## **PROGRAM OUTCOMES**

**The program outcomes of MDS Periodontology may be summarized as appended below. At the end of three years of training, a post graduate student in Periodontology is expected to:**

- Acquire knowledge about the historical perspective to advancement in the subject proper and related topics
- Know 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 health and pathology
- Know various preventive periodontal measures
- Learn various treatment modalities of periodontal disease from historical aspect to currently available ones
- Learn the interrelationship between periodontal disease and various systemic conditions
- Acquire knowledge on periodontal hazards due to iatrogenic causes and deleterious habits and prevention of the same.
- Identify rarities in periodontal diseases and environmental /emotional determinates in a given case
- Recognize conditions that may be outside the area of his specialty /competence and refer them to appropriate specialist
- Decide regarding surgical / non surgical management of case
- Update oneself by attending course, conference and seminars relevant to periodontics or by self learning process
- Plan out/ carry out research activity both basic and clinical aspects with an aim to publishing his work in journals
- Reach to public to motivate and educate regarding periodontal disease, its prevention and consequence if not treated
- Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis and adult periodontitis in Indian population

- Shall develop knowledge, skill in the science and practice of Oral implantology
- Shall develop teaching skill in the field of Periodontology and oral Implantology

## **PROGRAM SPECIFIC OUTCOMES**

A candidate undergoing training for the MDS program in Periodontology, shall, at the end of the three year training, inculcate the following specific skills:

- Take a proper clinical history, thorough examination of intra orally, extra orally, medical 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 and education regarding periodontal diseases, maintenance after treatment
  - Perform both surgical and non surgical procedures independently
  - Provide basic life support services, recognize the need for and advanced life support and does immediate need for that
- Human values, ethical practice and communication abilities:
- Adopt ethical principles in all aspects of treatment modalities. Professional honesty and 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 knowledge and skill, and ask for help from colleagues when needed. Respect patient's rights and privileges, including patients right to seek second opinion.

# EVALUATION AND GRADING SYSTEM

## SCHEME OF EXAMINATIONS

### PART I MDS EXAMINATIONS

The DCI, in its revised curriculum, has introduced a University level Examination at the end of the First year of the MDS course, from 2018-2019. As per this curriculum, *“the University shall conduct the Part I MDS Examination in Applied Basic Sciences at the end of the first academic year. This shall consist of One Theory Written Paper of three hours duration, and shall contain ten questions, each carrying ten marks each. The answer sheets shall be valued by one External Examiner and one Internal Examiner from the concerned specialty”*.

1. At the end of the 1<sup>st</sup> academic year (on completion of 12 months after the start of the MDS course), the University shall conduct the Part I MDS Examinations in Applied Basic Sciences, notification for which shall be issued by the Examination Control Division (ECD) of the University two months prior to the date of conduct of these Examinations.
2. As part of the **eligibility criteria** to appear for the Part I MDS Examinations, each MDS student shall have secured a **minimum of 80% attendance** in the first year of the MDS course, and shall have completed all the Pre-clinical work/exercises or any such course work, as mandated by the DCI, in its Modified Regulations (2017) or by the Head of the concerned Department /Principal of the Institution. The Principal shall send a list of students eligible to appear for the Part I MDS Examinations, to the ECD, at least 2 weeks prior to the start of the Examinations, so as to enable the University to issue hall tickets to eligible candidates
3. The Part I MDS Examinations in **Applied Basic Sciences** shall consist of *one (1) Theory Written Paper*, of three (3) hours durations, for a total of one hundred (100) marks. The Theory Written paper shall have a total of ten (10) questions, each carrying 10 marks. The single paper carrying a total of 100 marks, can comprise varied types of questions that could help assess the knowledge of the candidates in a better manner.

4. A grand viva voce on the topics covered for the Theory Examinations can be conducted by the External and Internal Examiners appointed by the University for paper Evaluation. This will impart a better value and credibility to the Part I Examination system. The Viva voce can be conducted in the respective Departments of the Dental School, on the same day as notified by the University for evaluation of the Theory answer sheets.

5. The University can appoint as Question paper setters for the Part I MDS examinations, those Examiners from the concerned specialty, who fulfill the same general criteria laid down by the DCI, to qualify as Examiners for the Part II MDS Examinations. The Examiners may take care to set the questions which apply to the Basic Science topics in their concerned specialty, as mandated in the syllabus for the same by the DCI.

6. The candidates need to secure 50% marks separately for theory written and Grand viva to be declared '**Passed**' for the Part I MDS Exams. **Candidates who have failed in the Part I MDS Examination**, will have a chance to appear for the supplementary Examinations that shall be conducted by the University six months after the conduct of the Regular Examinations. To become eligible to appear for the Part II MDS Examinations at the end of the third year of the course, the candidate shall have passed the Part I Examinations at least 6 months prior to the Part II Examinations. There shall be *NO reevaluation of the answer sheets* of the Part I MDS Examinations.

7. **The syllabus for the Part I MDS Examinations** shall be according to that specified by the DCI for each Specialty in its MDS Course Regulations, 2017.

#### **Part II MDS Examinations:**

1. Shall be conducted at the end of three years of completion of the MDS course. Notification for these Examinations shall be given by the ECD three months prior to the actual dates of the Examinations.

2. Every MDS student shall submit to the University (ECD) four printed copies of the completed **Dissertation work** duly signed and approved by the Guide/HOD, through the Principal, six months prior to the scheduled date of Examinations. *Acceptance of Dissertation by all the appointed Examiners is a mandatory pre-requisite to enable the candidate to become eligible to appear for the subsequent Part II MDS Examinations.*
3. Hall tickets shall be issued to the candidates for the Part II MDS Examinations, based on: (a) Acceptance of Dissertations by the appointed Examiners, (b) Report of eligibility of candidates from the Principal, after taking into account the completion of the required quantum of work in each specialty and (c) a minimum of 80% total attendance for each candidate.
4. There shall be *three (3) Theory Written Papers, followed by the Practicals and Viva-voce.*
5. Each **Theory Written Paper** (Paper I, II & III) will have the syllabus and contents, as prescribed in the MDS Course Regulations, for each specialty. The nomenclature of each paper for each specialty will also be in accordance with these Regulations. Each paper shall be of three hours durations, and maximum marks of One hundred (100). For Papers I and II, there shall be two essay questions, each carrying twenty five (25) marks, and five (5) short questions, each carrying ten (10) marks. For Paper III, there shall be Three (3) Essay questions of which the candidates need to answer any two (2), carrying 50 marks each. Each paper shall be of 3 hours duration.

Paper 1: Normal periodontal structures, Etiology and pathogenesis of periodontal diseases, epidemiology as related to Periodontics

Paper 2: periodontal diagnosis, therapy and oral implantology

Paper 3: essay (with emphasis on recent advances in periodontics)

The topics assigned to the different papers are generally evaluated under those sections. However a strict division of subject may not be possible

and some overlapping of topics is inevitable. Students must be prepared to answer overlapping topics

## **B. Practical/ clinical examination**

The clinical examination shall be of 2 days duration

### **1st day**

Case discussion

- Long Case -One
- Short Case -Two

Periodontal surgery – Periodontal flap surgery on a previously prepared case in one quadrant of the mouth after getting approval from the examiners

### **2<sup>nd</sup> Day**

Post-surgical discussion and review of case treated on 1<sup>st</sup> day

Presentation of dissertation and discussion

All the examiners should participate in all aspect of examinations /Viva voce

### **Distribution of marks for clinical examination**

Long Case	50
2 short case	25x2 = 50
Periodontal surgery	75
Post operative review	25
Total	200

C. Viva Voce      80 Marks

All examiners shall conduct viva voce on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills .It includes all component of course content. It include presentation and discussion of dissertation

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 topic for 8-10minutes

## MARKS DISTRIBUTION

<b>Part I Applied Basic Sciences Examination</b>	<b>Maximum Marks</b>	<b>Marks required for Pass</b>
Theory Written Exam	100	50 out of 100
Grand Viva	50	25 out of 50
<b>Part II Examinations</b>		
Theory Written Exams (3 papers)	300 (100 marks each)	150
Practical and Viva-voce	300 (200 for Practicals, 80 for Grand Viva, 20 for Pedagogy)	150
Total for Part II Exams	600 (300 + 300)	300

## COURSE DETAILS

<b>Sl#</b>	<b>COURSE NAME</b>	<b>COURSE CODE</b>
1	Applied Basic Sciences	MPER1
2	Normal periodontal structures, Etiology and pathogenesis of periodontal diseases, epidemiology as related to Periodontics	MPER2
3	Periodontal diagnosis, therapy and oral implantology	MPER3
4	Recent Advances	MPER4



## **COURSE OUTCOMES**

### **Applied Basic Sciences (MPER1)**

CO1	Acquire knowledge about the basics of Periodontology in order to apply the same in Periodontal practice
CO2	Knowledge of the regional anatomy, histology, embryology and osteology of head and neck with general disposition of thorax, abdominal and pelvic organs and translating this knowledge in Periodontal practice

### **Normal Periodontal Structures, Etiology And Pathogenesis Of Periodontal Diseases, Epidemiology As Related To Periodontics (MPER2)**

CO1	Knowledge of normal periodontal structures and pathogenesis of periodontal diseases in order to apply the same in periodontal Diagnosis and Therapy
CO2	Knowledge about epidemiology related to periodontal diseases and translate the same into research.

### **Periodontal Diagnosis, Therapy and Implantology (MPER3)**

CO1	Knowledge about 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 health and pathology
CO2	Perform both non surgical procedure and patient education regarding periodontal diseases, maintenance after treatment Perform both surgical and non surgical procedures independently

## **COURSE SYLLABUS**

### Applied Anatomy

1. Development of Periodontium
2. Micro and Macro structural anatomy and biology of the periodontal tissues
3. Age changes in periodontal tissues
4. Anatomy of periodontium
  - Macroscopic and microscopic anatomy
  - Blood supply of Periodontium
  - Lymphatic system of the periodontium
  - Nerves of periodontium
5. Temporo-mandibular joint, Maxillae and Mandible
6. Cranial nerves (5,7,9,11,12)
7. Tongue, oropharynx
8. Muscles of mastication

### Physiology

1. Blood
2. Respiratory system-Respiratory diseases which are a cause for periodontal disease
3. Cardiovascular system
  - Blood Pressure
  - Normal ECG
  - Shock
4. Endocrinology- hormonal influence on periodontium
5. Gastrointestinal system
  - Salivary secretion- Composition, function and regulation
  - Reproductive physiology-Hormones –actions and regulation, role in periodontics
6. Nervous system
  - Pain pathways
  - Taste –taste buds, primary taste sensation and pathways for sensation

### Biochemistry

1. Basics of carbohydrates, lipids, proteins, vitamins, enzymes and minerals

2. Diet, nutrition and periodontium
3. Biochemical tests and their significance
4. Calcium and phosphorous

#### Pathology

1. Cell structure and metabolism
2. Inflammation and repair, necrosis and degeneration
3. Immunity and hypersensitivity
4. Circulatory disturbances-edema, hemorrhage, shock, thrombosis, embolism, infraction and hypertension
5. Disturbance of nutrition
6. Diabetes Mellitus
7. Cell growth and differentiation, regulation
8. Lab investigations
9. Blood

#### Microbiology

1. General bacteriology
2. Immunology and infection
3. Systemic bacteriology with special emphasis on oral microbiology-staphylococci, Genus Actinomyces and other filamentous bacteria and actinobacillus actinomycetum comitans
4. Virology
5. Mycology
6. Applied Microbiology
7. Diagnostic microbiology and immunology, hospital infections and management

#### Pharmacology

1. General pharmacology
2. Detailed pharmacology of
  - a) Analgesics-opiod and non opiod
  - b) Local anesthetics
  - c) Haematinics and coagulants, anticoagulants
  - d) Vitamin D and Calcium preparations
  - e) Anti diabetics drugs
  - f) Steroids
  - g) Antibiotics

- h) Anti hypertensive
- i) Immunosuppressive drugs and their effects on oral tissues
- j) Antiepileptic drugs
- 3. Brief pharmacology, dental use and adverse effect of
  - a) General anesthetic
  - b) Antipsycotics
  - c) Antidepressants
  - d) Anxiolytic drugs
  - e) Sedatives
  - f) Anti epileptics
  - h) Antihypertensive
  - i) Antianginal drugs
  - j) Diuretics
  - k) Antidepressants
  - l) Hormones
  - k) Pre anesthetic medications
- 4. Drug 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) Astringents
  - c) Sialogogues
  - d) Disclosing agents
  - e) Antiplaque agents
- 7. Fluoride 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. Measures of central tendency (mean, median, mode), standard deviation and variability
5. Tests of significance
6. Null hypothesis

### **Etiopathogenesis**

1. Classification of periodontal diseases  
1 hour
2. Epidemiology of gingival and periodontal diseases  
3hours
3. Defense mechanism of gingiva  
2hours
4. Periodontal microbiology  
3hours
5. Basic concepts of inflammation and immunity  
3hours
6. Microbial interactions within the host in periodontal diseases  
3hours
7. Pathogenesis of plaque associated periodontal disease  
2hours
8. Dental calculus  
2hours
9. Role of iotrogenic and other local factors  
3hours
10. Genetic factors associated with the periodontal disease  
3hours
11. Influence of systemic diseases and disorders of periodontium  
3hours
12. Role of environmental factors in the etiology of periodontal diseases-  
2hours
13. Stress and periodontal disease  
3hours
14. Occlusion and periodontal disease  
3hours
15. Smoking and tobacco in the etiology of periodontal diseases  
3hours
16. AIDS and periodontium -2hours

17. Periodontal medicine -3hours  
18. Dentinal hypersensitivity -3hours

**Clinical and therapeutic Periodontology and oral Implantology**

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

Gingival disease

1. Gingival inflammation  
1 hour
2. Clinical features of gingivitis  
3hours
3. Gingival enlargement  
3hours
4. Acute gingival infections  
3hours
5. Desquamative gingivitis and oral mucous membrane disease  
3hours
6. Gingival disease in childhood  
3hours

Periodontal disease

1. Periodontal pocket  
3hours
2. Bone loss and patterns of bone destruction  
3hours
3. Periodontal response to external forces  
3hours
4. Masticatory system disorders  
2hours
5. Chronic periodontitis  
3hours
6. Aggressive periodontitis  
3hours
7. Necrotising ulcerative periodontitis  
3hours

8. Interdisciplinary approaches  
3hours
  - Orthodontic
  - Endodontic
9. Endodontic considerations in periodontal therapy  
2hours

#### Treatment of Periodontal disease

##### History, examination, diagnosis and treatment planning

1. Clinical diagnosis  
3hours
2. Radiographic and other aids in the diagnosis of periodontal disease  
2hours
3. Advanced diagnostic technique  
3 hours
4. Risk assessment  
3 hours
5. Determination of prognosis  
3hours
6. Treatment plan  
3hours
7. Rationale for periodontal treatment  
3hours
8. General principles of anti –infective therapy with special emphasis on infection control in periodontal practice  
3hours
9. Halitosis and its treatment  
2hours
10. Bruxism and its treatment  
2hours

##### Periodontal instrumentation

1. Instrumentation  
5hours
2. Principles of periodontal instrumentation  
5hours
3. Instruments used in different parts of the mouth

##### Periodontal therapy

1. Preparation of tooth surface  
3hours
2. Plaque control  
3hours
3. Anti microbial and other drugs used in periodontal therapy and  
wasting diseases of teeth  
2hours
4. Periodontal management of HIV infected patients  
2hours
5. Occlusal evaluation and therapy in the management of  
Periodontal disease  
3 hours
6. Role of orthodontics as an adjunct to periodontal therapy  
2hours
7. Special emphasis on precautions and treatment for medically  
compromised patients  
3 hours
8. Periodontal splints  
3hours
9. Management of dentinal hypersensitivity  
3hours

Periodontal surgical phase- Special emphasis on drug prescription

1. General principles of periodontal surgery  
3hours
2. Surgical anatomy of periodontium and related structures  
3hours
3. Gingival curettage  
2 hours
4. Gingivectomy techniques  
2hours
5. Treatment of gingival enlargement  
3hours
6. Periodontal flaps  
3hours
7. Osseous surgery (resective and regenerative)  
3hours



8. Furcation –problems and management  
2hours
9. Periodontic-endodontic problems  
3hours
10. Periodontic plastic and esthetic surgery  
3hours
11. Recent advances in surgical techniques  
3hours

#### Future directions about controversial questions in periodontal therapy

1. Future directions of infection control  
3hours
2. Research directions in regenerative therapy  
3 hours
3. Future directions in anti inflammatory therapy  
3hours
4. Future directions in measurement of periodontal diseases

#### Periodontal maintenance phase

1. Supportive periodontal therapy  
2hours
2. Results of periodontal treatment  
2 hours

#### Oral implantology

1. Introduction and historical review  
3hours
2. Biological, clinical and surgical aspects of dental implants  
3 hours
3. Diagnosis and treatment planning  
3 hours
4. Implant surgery  
3hours
5. Prosthetic aspects of implant
6. Diagnosis and treatment planning of peri-implant complications  
2 hours
7. Special emphasis on plaque control measures for implant patients  
3 hours
8. Maintenance phase  
3hours

Management of medical emergencies in periodontal practice  
3hours

Teaching and learning activities

- Seminars: A minimum of 15 seminars to be presented by each student during the PG course
- Journal club: A minimum of 25 journal articles to be reviewed by each student during the PG course
- Interdepartmental seminar: Each PG student should present at least 1 seminar in an interdepartmental meeting during the PG course. Such meeting should be held at least once a month
- Library assignment: One to be presented at the end of 18<sup>th</sup> month of the course

### **Clinical work (Minimum No: of Cases)**

#### **First Year**

1. Applied periodontal indices	10 Cases
2. Scaling and root planing	
Hand	15 cases
Ultrasonic	15 Cases
3. Curettage	10 cases
4. Gingivectomy	20 Cases
5 Gingivoplasty	10 cases

#### **Second year**

1. Clinical work	10 cases
2. Case history and treatment planning	05 cases
3. Local drug delivery techniques	05 cases
4. Periodontal surgical procedures	
Pocket therapy	10 cases
Mucogingival surgeries	5 cases
Implants	2 Implants
Management of Endo-perio problems	
5 Occlusal adjustments	10 Cases
6. Perio splints	10 Cases

### **Third year**

1. Regenerative techniques using various graft and barrier membranes
2. Record, maintenance and follow up of all treated cases including implants