

MDS CURRICULUM

MDS Curriculum is available in VMSDC website and is subject to change from time to time based on council norms.

PERIODONTOLOGY

OBJECTIVES

The following objectives are laid out to achieve the goals of the course.

KNOWLEDGE

Discuss historical perspective to advancement in the subject in 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 systematic conditions
- Describe periodontal hazards due to estrogenic causes and deleterious habits and prevention of it
- Identify rarities in periodontal disease and environmental / Emotional determinants in a given case
- Recognize conditions that may be outside the area of his Specialty / competence and refer them to an appropriate Specialist
- Decide regarding non-surgical management of the case
- Update him by attending course, conferences and seminars relevant to periodontics or by selflearning process
- Plan out / carry out research activity both basic and clinical aspects with the aim of publishing his 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

<u>SKILLS</u>

- Take a proper clinical history, thorough examination of intra orally, extra orally, 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 and 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, Adopt ethical principal 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 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.

COURSE CONTENTS

PART I - PAPER I:Applied Basic Sciences: Applied anatomy, Physiology&Biochemistry, Pathology, Microbiology, Pharmacology, Research

APPLIED ANATOMY:

- 1. Development of the periodontium
- 2. Micro and Macro structural anatomy and biology of the periodontal tissues
- 3. Age changes in the periodontal issues.
- 4. Anatomy of the periodontium
 - Macroscopic and microscopic anatomy
 - Blood supply of the periodontium
 - Lymphatic system of the periodontium
 - Nerves of the Periodontium
- 5. Temporomandibular joint, Maxilla and Mandible
- 6. Tongue, oropharynx
- 7. Muscles of mastication

PHYSIOLOGY:

- 1. Blood
- 2. Respiratory system Acknowledge of the respiratory diseases which are a cause periodontal diseases (Periodontal Medicine)
- 3. Cardiovascular System
 - a. Normal ECG
 - b. Normal ECG
 - c. Shock
- 4. Endocrinology hormonal influences on periodontium
- 5. Gastrointestinal system
 - a. Salivary secretion composition, function & regulation
 - b. Reproductive physiology
 - c. Hormones Actions and regulations, role in periodontal disease
 - d. Family planning methods
- 6. Nervous system
 - a. Pain pathways
- b. Taste Taste buds, primary taste sensation & pathways for sensation



BIOCHEMISTRY

- 1. Basics of carbohydrates, lipids, proteins, vitamins, proteins, enzymes and minerals
- 2. Diet and nutrition and periodontium
- 3. Biochemical tests and their significance
- 4. Calcium and phosphorus

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, infarction and hypertension
- 5. Disturbances of nutrition
- 6. Diabetes mellitus
- 7. Cellular growth and differentiation, regulation
- 8. Lab investigations
- 9. Blood
- MICROBIOLOGY
- 1. General bacteriology
 - a. Identification of bacteria
 - b. Culture media and methods
 - c. Sterilization and disinfection
- 2. Immunology and infection
- 3. Systemic bacteriology with special emphasis on oral microbiology staphylococci, actinomyces and other filamentous bacteria and aggregatibacter actinomycetemcomitans
- 4. Virology
 - a. General properties of viruses
 - b. Herpes, Hepatitis, virus, HIV virus
- 5. Mycology
 - a. Candidasis
- 6. Applied microbiology
- 7. Diagnostic microbiology and immunology, hospital infections and management

PHARMACOLOGY:

1. General Pharmacology

a. Definitions – Pharmacokinetics with clinical applications, routes of administration including local drug delivery in Periodontics

- b. Adverse drug reactions and drug interactions
- 2. Detailed Pharmacology of
 - a. Analgesics opioid and nonopioid
 - b. Local anesthetics
 - c. Haematinics and coagulants, Anticoagulants
 - d. Vit D and Calcium preparations
 - e. Antidiabetics drugs
 - f. Steroids
 - g.Antibiotics
 - h.Antihypertensive
 - I. Immunosuppressive drugs and their effects on oral tissues
 - j. Antiepileptic drugs



- 3. Brief pharmacology, dental use and adverse effects of
 - a. General anesthetics
 - b. Antiypsychotics
 - c. Antidepressants
 - d. Anxiolytic drugs
 - e. Sedatives
 - f. Antiepileptics
 - g. Antihypertensives
 - h. Antianginal drugs
 - I. Diuretics
 - j. Hormones
 - k. Pre- anesthetic 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. Astringents
 - c. Sialogogues
 - d. Disclosing agents
 - e. Antiplaque agents
- 7. Fluoride pharmacology

BIOSTATISTICS:

- Introduction, definition and branches of biostatistics
- Collection of data, sampling, types, bias and errors
- Compiling data graphs and charts
- Measures of central tendency (mean, median and mode), standard deviation and variability
- Tests of significance (chi square test 't'test and Z-test)
- Null hypothesis

PART II-PAPER I: Normal Periodontal structure, Etiology & 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 inflammation and immunity
- 6. Microbial interactions 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 of the periodontium
- 12. Role of environmental factors in the etiology of periodontal disease
- 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. Dental hypersensitivity

PART II-PAPER II Periodontal diagnosis, Clinical and therapeutic Periodontology and Oral Implantology

<u>Please Note</u>: Clinical periodontology includes gingival diseases, periodontal diseases, periodontal instruments, diagnosis, prognosis and treatment of periodontal diseases.

I. GINGIVAL DISEASES

- 1. Gingival inflammationh
- 2. Clinical features of gingivitis
- 3. Gingival enlargement
- 4. Acute gingival infections
- 5. Desquamative gingivitis and oral mucous membrane diseases
- 6. Gingival diseases in the childhood

II. PERIODONTAL DISEASES

- 1. Periodontal pocket
- 2. Bone loss and patterns of bone destruction
- 3. Periodontal response to external force
- 4. Masticatory system disorders
- 5. Chronic periodontitis
- 6. Aggressive periodontitis
- 7. Necrotising ulcerative periodontitis
- 8. Interdisciplinary approaches
 - Orthodontic
 - Endodontic
- 9. Periodontic considerations in periodontal therapy

III. TREATMENT OF PERIODONTAL DISEASES



A. History, examination, diagnosis and treatment planning

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

B. Periodontal instrumentation

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

C. Periodontal therapy

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

D. Periodontal surgical phase - special emphasis in drug prescription

- 1. General principles of periodontal surgery
- 2. Surgical anatomy of periodontium and related structures
- 3. Gingival curettage
- 4. Gingivectomy technique
- 5. Treatment of gingival enlargements
- 6. Periodontal flap



- 7. Osseous surgery (resective and regenerative)
- 8. Furcation Problem and its management
- 9. The periodontic endodontic continuum
- 10. Periodontic plastic and esthetic surgery
- 11. Recent advances in surgical techniques

E. Future directions and controversial questions in periodontal therapy

- 1. Future directions and controversial questions in periodontal therapy
- 2. Research directions in regenerative therapy
- 3. Future directions in anti-inflammatory therapy
- 4. Future directions in measurement of periodontal diseases

F. Periodontal maintenance phase

- 1. Supportive periodontal treatment
- 2. Results of periodontal treatment

II. Oral Implantology

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



PART II- PAPER III Recent advancements in Periodontology and Oral Implantology

Teaching / learning Activities

- Seminars:- A minimum of 15 seminars to be presented by each student during the P.G. course (At least 5 Seminars per year)
- Journal clubs:- a minimum of 15 Journal articles to be reviewed by each student during the P.G. course
- Pedagogy 5 in a year
- Clinical case presentations 4 in a year
- Lectures taken for undergraduates- 1 in a year
- Interdepartmental Seminars 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 every month.

ACADEMIC ACTIVITIES

I <u>Year</u>

Submission of synopsis for Dissertation-within 6 months from the start of the course. One PG convention (one Paper) and One speciality conference (one poster). Short study publication

II <u>Year</u>

Library Dissertation- to be submitted at the end of the 18 months. One PG convention (one Paper) and One speciality conference (one poster). One publication (Case report/review)

III <u>Year</u>

Submission of Dissertation - 6 months before completion of III year



SKILLS

TEACHING / LEARNING ACTIVITIES:

The post graduate is expected to complete the following at the end of:

SI. No.	Year Wise	ACTIVITIES WORKS TO BE DONE	Require ment	Work done (verified by Guide /HOD)	Work done (verified by Council's Inspectors)	Remarks
1	First	Orientation to the PG				
	Year	program				
		Pre-clinical work				
		a. Dental				
		1. Practice of incisions and suturing techniques on the typodont models				
		2. Fabrication of bite guards and splints				
		3. Occlusal adjustment on the casts mounted on the articulator				
		4. X-ray techniques and interpretation				
		5. Local anaesthetic techniques				
		6. Identification of Common Periodontal Instruments				
		7. To learn science of Periodontal Instruments maintance (Sharpening , Sterlization and Storage)				
		8. Concept of Biological width				
		a. Medical				
		 Basic diagnostic microbiology and immunology, collection and handling of sample and culture techniques 				
		2. Introduction to genetics, bioinformatics				
		3. Basic understanding of cell biology and immunological diseases				
		Clinical Work	4.0			
		1. Applied periodontal indices	10 Cases			
		2. Scaling and root planning:- with Proper written history				
		a. Manual	20 Cases			
		b. Ultrasonic	20			

31

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

Note : Pre-clinical work to be completed within first three months

Practical training and handling medical emergencies and basic life support (BLS)		
Basic biostatistics and Research Methodology – Surveying and data analysis		

2.	First	1. Interpretation of			
	Year	various bio-chemical			
		investigations			
		2. Practical training and	To be		
		handling medical	applied		
		emergencies and	in all 9		
		basic life support	departme		
		devices	nts in 1 st		
			year		
			training		
		3. Basic biostatistics	To be		
		and Research	applied		
		Methodology –	in all 9		
		Surveying and data	departme		
		analysis	nts in 1 st		
		5	year		
			training		
		clinical			
		1. Case history and	10 Cases		
		treatment planning			
		2. Root planning	40 Cases		
		3. Observation /			
		assessment of all			
		periodontal			
		procedures including			
		implant			
		4. Selection of topic for			
		Library dissertation			
		and submission of			
		Disseration			
		Synopsis			
3.	First	non surgical cases	10 Cases		
	Year				
		(i) Gingival	3 Cases		
		Depigmentati			
		on			
		(ii) Gingival	No limits		
		Curettage			
		(iii) ENAP	1 Cases		
		(iv) Gingivectomy	5 Cases		
		/ Gingivoplasty			
		(v) Operculecto	3 Cases		

		mv			
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.	Second Year	1. Periodontal surgical procedures			
		a. Basic flap procedures	20 Cases		
		2. Periodontal plastic and esthetic	10 - 25 Cases		
		a. Increasing width of attached gingival			
		b. Root coverage procedures / Papilla Preservation and Reconstruction			
		c. Crown lengthening procedures			
		d. Frenectomy			
		e. Vestibuloplasty			
		3. Furcation treatment (Hemisection, Rootsection, Tunelling)	5 Cases		
6.	Third Year	1. Ridge augmentation procedures	3 - 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	0		
		b. Usseous Surgery	2 each		
		(I) Resective			

		(ii) Regenerative			
7.	Third Year	Clinical work			
		 Flap surgeries & regenerative techniques 	5 cases (using various grafts & barrier membran es)		
		2. Assistance / observation of advanced surgical procedure	5 each		
		3. Record maintenance & follow-up of all treated cases including implants			
		4. Submission of dissertation	6 months before completi on of III year		



Assessment examinations: - In addition to the regular evaluation, log book etc., Assessment examination should be conducted once every six months & progress of the student monitored.

MONITORING LEARNING PROGRESS:

It is essential to monitor the learning progress to each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring to be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Section IV.

Scheme of Examination:

A. Theory: 400 Marks

Written examination shall consist of four question papers each of three hours duration. Total marks for each paper will be 100marks.

I MDS shall have one paper Part I-Paper I, consisting of 10 short notes each carrying 10 marks.

Final year MDS shall have 3 Papers as follows.

- Part II- Paper I (Essays: 2questions, each carrying 25 marks Short notes:5 questions ,each carrying 10 marks)
- Part II- Paper II (Essays: 2questions, each carrying 25 marks Short notes:5 questions ,each carrying 10 marks)
- Part II- Paper III (Essays: 3 of any 2questions, each carrying 50marks.

Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

- Part I-Paper I : Applied Basic Sciences: Applied Anatomy, Physiology & Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics.
- PART II -Paper I : Normal Periodontal structure, Etiology & Pathogenesis of Periodontal diseases, epidemiology as related to Periodontics.
- PART II Paper II : Periodontal diagnosis, therapy & Oral implantology
- PART II -Paper III : 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 the subject may not be possible and some overlapping of topics is inevitable. Students should be prepared to answer overlapping topics.



B. Practical / Clinical Examination : 200 Marks

The clinical examination shall be of two days duration

Day 1 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.

Day 2

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

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	50
b) 2 short cases	50
c) Periodontal surgery	75
Post – operative review	25
Total	200

C. Viva Voce: 100 Marks

i. Viva – Voce Examination:

All examiners will conduct viva – voce conjointly on candidates. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy / Presentation of Dissertation

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



I – YEAR – TIME TABLE

DAY	8.30 to 9.00 AM	9.00 to 10.00 AM	10.00 AM to 1.30 PM	2 PM to 3.30 PM
MON	STERILIZATION	LD/MD/SHORT STUDY	CLINICS OP AND REVIEW	BASIC SCIENCES CLASSES
TUE	STERILIZATION	LD/MD/SHORT STUDY	CLINICS OP AND REVIEW	BASIC SCIENCES CLASSES
WED	STERILIZATION	SEMINAR	CLINICS OP AND REVIEW	BASIC SCIENCES CLASSES
THU	STERILIZATION	LD/MD/SHORT STUDY	CLINICS OP AND REVIEW	BASIC SCIENCES CLASSES
FRI	STERILIZATION	PEDAGOGY/ JOURNAL CLUB	CLINICS OP AND REVIEW	BASIC SCIENCES CLASSES
SAT	STERILIZATION	DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW

Basic science classes include Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology and Biostatistics.



II – YEAR – TIME TABLE

DAY	8.30 AM – 9.00	9.00 - 10.00	10.00 – 1.30	2.00-3.30
MON	STERILIZATION	THESIS DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
TUE	STERILIZATION	THESIS DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
WED	STERILIZATION	SEMINAR	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
тни	STERILIZATION	THESIS DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
FRI	STERILIZATION	PEDAGOGY/ JOURNAL CLUB	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
SAT	STERILIZATION	DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW



III – YEAR – TIME TABLE

DAY	8.30AM-09.00	09.00-10.00	10.00-1.30	2.00-3.30
MON	STERILIZATION	THESIS DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
TUE	STERILIZATION	THESIS DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
WED	STERILIZATION	SEMINAR	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
THU	STERILIZATION	THESIS DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
FRI	STERILIZATION	PEDAGOGY/ JOURNAL CLUB	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW
SAT	STERILIZATION	DISCUSSION	CLINICS OP AND REVIEW	CLINICS OP AND REVIEW

PG INSTRUMENTS LIST:



List of Instruments to be purchased by the students:

HU- FRIEDY CURETTE

- 1. #1/2 Gracey Standard Curettes Satin
- 2. #3/4 Gracey Standard Curettes Satin
- 3. #5/6 Gracey Standard Curettes Satin
- 4. #7/8 Gracey Standard Curettes Satin Steel
- 5. #9/10 Gracey Standard Curettes Satin Steel
- 6. #11/12Gracey Standard Curettes Satin Steel
- 7. #13/14 Gracey Standard Curettes Satin Steel
- 8. #2R/2L Columbia Universal Curette
- 9. #4R/4L Columbia Universal Curette

GDC

- 10. Steri Tray DSC (for Autoclaving)
- 11. Pocket Marker # PMGF1/PMGF2
- 12. Orban Knife
- 13. Castroviejo scissor curved
- 14. Castroviejo scissor straight
- 15. Kirkland knife
- 16. Naber's color coded
- 17. University of North Carolina probe
- 18. Sub gingival scalers
- 19. Periosteal elevator Glickman
- 20. Periosteal elevator molt 9 small
- 21. Periosteal elevator molt 9 Large
- 22. B.P. Handle adjustable
- 23. Tissue holding forceps Adson(12cm)
- 24. Tissue Forceps Adson
- 25. Scissor iris (11.5cm)
- 26. Scissor iris curved (11.5cm)
- 27. Empty cassette for 20 instruments
- 28. Senn- Miller blunt
- 29. Crane- Kaplan scaler
- 30. Cumine scaler
- 31. Goldman fox scissors

INDIAN BRAND

- 32. Mouth mirrors
- 33. Explorer
- 34. Tweezers
- 35. Willam's Probe
- 36. Dapen Dish
- 37. Ultrasonic scaler tips (Woodpecker UDS)
- 38. Kidney tray (Large and Small)
- 39. Rectangular Tray

Miscellaneous:

Microsoft Tablet Pc

Scrub (2 Sets)

To be Provided by the College:

Aprons (2 sets)

Disposable aprons for the patients and Students.