

YENEPOYA



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(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade

POST GRADUATE COURSE

SYLLABUS

DEPARTMENT OF PERIODONTOLOGY

MDS Curriculum

GOALS AND OBJECTIVES OF THE COURSE

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

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 iatrogenic 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 specialty/ competence and refer them to an appropriate Specialist
- Decide regarding non-surgical or surgical management of the case
- Update him by attending course, 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 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 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

B. SKILLS

- Take a proper clinical history, thorough examination of intra orally, 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 and maintenance after the treatment
- Perform both non- surgical and education regarding periodontal disease and maintenance after the treatment
- Perform both non-surgical and surgical procedures independently
- Provide basic life support service (BLS), recognize the need for advance life support and 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 knowledge and skill and ask for help from colleagues when needed. Respect patient's rights and privileges, including patient's right to information and right to seek a second opinion.

1. SYLLABUS

I. PART I APPLIED BASIC SCIENCES

A. 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 tissues
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, Maxillae and Mandible
6. Tongue, oropharynx
7. Muscles of mastication/ Face
8. Blood supply/ nerve supply and lymphatics of head and neck
9. Spaces of Head and neck

B. PHYSIOLOGY

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

C. 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 phosphorus

D. 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

E. MICROBIOLOGY

1. General bacteriology
 - Identification of bacteria
 - Culture media and methods
 - Sterilization and disinfection
2. Immunology and Infection
3. Systemic bacteriology with special emphasis on oral microbiology – staphylococci, genus actinomyces and filamentous bacteria and actinobacillusactinomycetumcomitans
4. Virology
 - General properties of viruses
 - Herpes, Hepatitis virus, HIV virus
5. Mycology
 - Candidiasis
6. Applied microbiology
7. Diagnostic microbiology and immunology, hospital infections and management

F. PHARMACOLOGY

1. General pharmacology
 - Definitions – Pharmacokinetics with clinical applications, routes of administration including local drug delivery in Periodontics
 - Adverse drug reactions and drug interactions

2. Detailed pharmacology

- Analgesics – Opioid and Non- opioid
- Local anesthetics
- Haematinics and coagulants, Anti coagulants
- Vit D and Calcium preparations
- Antidiabetic drugs
- Steroids
- Antibiotics
- Antihypertensive
- Immunosuppressive drugs and their effects on Oral tissues
- Antiepileptic drugs

3. Brief pharmacology, Dental use and adverse effects of

- General anesthetics
- Antipsychotics
- Antidepressants
- Anxiolytic drugs
- Sedatives
- Antiepileptic drugs
- Antihypertensives
- Antianginal drugs
- Diuretics
- Hormones
- Pre- anesthetic medication

4. Drugs used in Bronchial Asthma/ Cough

5. Drug therapy of

- Emergencies
- Seizures
- Anaphylaxis
- Bleeding
- Shock
- Diabetic ketoacidosis
- Acute Addisonian crisis

6. Dental pharmacology

- Antiseptics
- Astringents
- Sialogogues
- Disclosing agents
- Antiplatelet agents

7. Fluoride pharmacology

G. BIOSTATICS

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 (chi square, t test and Z-test)
6. Null hypothesis

II. PART II

PAPER I

ETIOPATHOGENESIS

1. Classification of periodontal diseases and conditions
2. Epidemiology of gingival and periodontal diseases
3. Defence mechanisms of gingiva
4. Periodontal microbiology
5. Basic concepts of inflammation and immunity
6. Microbial interactions with host in periodontal diseases
7. Pathogenesis of plaque associated periodontal diseases
8. Dental calculus
9. Role of iatrogenic and other 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 diseases
13. Stress and periodontal disease
14. Occlusion and periodontal disease
15. Smoking and tobacco in the etiology of periodontal disease
16. AIDS and Periodontium
17. Periodontal medicine
18. Dentinal hypersensitivity

III. PAPER - II

Clinical and Therapeutic Periodontology and Oral Implantology

Please note:-

Clinical periodontology includes:-gingival diseases, periodontal diseases, Periodontal instrumentation, Diagnosis, Prognosis and treatment of Periodontal diseases.

A. GINGIVAL DISEASES

1. Gingival Inflammation
2. Clinical Features of gingivitis
3. Gingival enlargement
4. Acute Gingival Infections
5. Desquamative gingivitis and Oral mucous membrane diseases

6. Gingival diseases in childhood

B. PERIODONTAL DISEASES

1. Periodontal pocket
2. Bone loss and patterns of bone destruction
3. Periodontal response to external forces
4. Masticatory system disorders
5. chronic periodontitis
6. Aggressive periodontitis
7. Necrotizing ulcerative periodontitis
8. Interdisciplinary approaches
 - orthodontic
 - Endodontic
 - Prosthodontic

IV. TREATMENT OF PERIODONTAL DISEASES

A. History, examination, diagnosis, prognosis and treatment planning

1. Clinical diagnosis
2. Radiographic and other aids in the diagnosis of periodontal diseases
3. Advanced diagnostic aids
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 pockets
9. Halitosis and its treatment
10. Bruxism and its treatment

B. Periodontal instrumentation

1. Periodontal Instruments
2. Principles of periodontal instrumentation

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 therapy
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 on 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 for infection control
2. Research directions in regenerative therapy
3. Future 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

V. 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
8. Maintenance phase

VI. MANAGEMENT OF MEDICAL EMERGENCIES IN PERIODONTAL PRACTICE

Periodontology treatment should be practiced by various treatment plans and more number of patients to establish skill for diagnosis and treatment and after care with bio-mechanical, biological, bio-esthetics, bio-phonetics and all treatment should be carried out in more number for developing clinical skill.

TEACHING / LEARNING ACTIVITIES:

The post graduate programme is divided in to various modules as follows;

S.NO	Year Wise	ACTIVITIES / WORKS TO BE DONE
1.	Module 1 (First Year)	<p>Orientation to the PG program</p> <p>1. Pre-clinical work (4 months)</p> <p>a. Dental</p> <p>1. Practice of incisions and suturing techniques on the typodont models.</p> <p>2. Fabrication of bite guards and splints.</p> <p>3. Occlusal adjustment on the casts mounted on the 73 73 articulator</p> <p>4. X-ray techniques and interpretation.</p> <p>5. Local anaesthetic techniques</p> <p>. 6. Identification of Common Periodontal Instruments.</p> <p>7. To learn science of Periodontal Instruments maintance (Sharpening , Sterlization and Storate)</p> <p>8. Concept of Biological width</p> <p>a. Typhodont Exercise</p> <p>(i) Class II Filling with Band and Wedge Application</p> <p>(ii) Crown cuttings</p> <p>b. Medical</p> <p>1. Basic diagnostic microbiology and immunology, collection and handling of sample and culture techniques.</p> <p>2. Introduction to genetics, bioinformatics.</p> <p>3. Basic understanding of cell biology and immunological diseases</p> <p>Clinical work</p> <p>1. Applied periodontal indices - 10 cases</p> <p>2. Scaling and root planning:- with Proper written history</p> <p>a. Manual 20 Cases</p> <p>b. Ultrasonic 20 Cases</p> <p>3. Observation / assessment of all periodontal procedures including implants.</p>
2.	Module 2 (First Year)	<p>1. Interpretation of various bio-chemical investigations.</p> <p>2. Practical training and handling medical emergencies and basic life support devices.</p> <p>3. Basic biostatistics – Surveying and data analysis.</p> <p>Clinical</p> <p>1. Case history and treatment planning - 10 cases</p> <p>2. Root planning 50 cases</p> <p>3. Observation / assessment of all periodontal procedures including implant.</p> <p>4. Selection of topic for Library dissertation and submission of Dissertation Synopsis</p>

		(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 should be conducted after every 3 modules & progress of the student monitored.

MONITORING LEARNING PROGRESS:

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is 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.

EXAMINATIONS._

(a) ELIGIBILITY:

The following requirements shall be fulfilled by the candidate to become eligible for the final examination.

(i) Attendance: Every candidate shall secure (80% attendance during each academic year).

(ii) Progress and conduct: Every candidate shall participate in seminars, journal review meetings, symposia, conferences, case presentations, clinics and didactic lectures during each year organised by the concerned department.

(iii) Work diary and log book: Every candidate shall maintain a work diary and log book as per Annexure-I appended to these regulations for recording his or her participation in the training

programmes conducted by the department. The work diary and log book shall be verified and certified by the Head of the Department of the institution. The certification of satisfactory progress is based on the work diary and log book.

(iv) DISSERTATION:

Every candidate appearing for the post-graduate degree examination shall at least six months prior to the examinations, submit with his form for examination, four typewritten copies of the dissertation undertaken by the candidate, prepared under the direction and guidance of his/her guide. The dissertation so submitted shall be referred to the examiners for their examination and acceptance of it shall be a condition precedent to allow the candidate to appear for the written part of the examination:

Provided that a candidate whose dissertation has been accepted by the examiner, but declared failed at the examination, shall be permitted to re-appear at the subsequent examination without a new dissertation:

Provided further that if the dissertation is rejected by the examiner, the examiner shall assign reasons there for with suggestions for its improvement to the candidate and such candidate shall re-submit his/ her dissertation to the examiner who shall accept it before appearing in the examination.

b. EXAMINERS:

Part I: 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 number of students.

Part II: 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.

QUALIFICATION AND EXPERIENCE FOR EXAMINERS:

The qualification and experience for appointment of an examiner shall be as under:-

- (i) shall possess qualification and experience of a Professor in a post-graduate degree programme;
- (ii) a person who is not a regular post-graduate teacher in the subject shall not be appointed as an examiner;
- (iii) no person shall be appointed as an external examiner for the same institution for more than two consecutive years. However, if there is a break of one year, the person can be re-appointed.

EXAMINATION CENTRE:

(1) In the event of university exam being conducted in the same city or town having more than one post-graduate institution under the same university, one central examination centre shall be fixed by the university and the students from all the institutions of the city shall take the examination in that center: Provided that the clinical and viva-voice shall be conducted at their institute.

(2) Rotation of the institutions as center of examination shall be as per direction of the university.

VALUATION OF ANSWER BOOKS:

Part-I : Answer book/s shall be evaluated by the internal and external examiner/s

Part-II : Answer books shall be evaluated by four examiners, two internal and two external and the average marks shall be computed.

SCHEME OF EXAMINATION:

A. Theory:

Part-I: Basic Sciences Paper - 100 Marks

There shall be a theory examination in the Basic Sciences at the end of 1st year of course. The question papers shall be set and evaluated by the concerned Department/Specialty. 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

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

WRITTEN EXAMINATION shall consist of the following:-

- Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. There shall be 10 questions of 10 marks each (Total of 100 Marks)
- Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & 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 Paper-III 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.

Distribution of topics for each paper will be as follows:

Part- 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

Paper II: Periodontal diagnosis, therapy & Oral Implantology

Paper III: Essays (descriptive and analyzing type questions)

**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

Clinical/practical examination is designed to test the clinical skill, performance and competence of the candidate in skills such as communication, clinical examination, medical/dental procedures or prescription, exercise prescription, latest techniques, evaluation and interpretation of results so as to undertake independent work as a specialist. The affiliating university shall ensure that the candidate has been given ample opportunity to perform various clinical procedures.

The practical/clinical examination in all the specialities shall be conducted for six candidates in two days:

Provided that practical/clinical examination may be extended for one day, if it is not complete in two days.

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

i. 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 the course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy/ Thesis Presentation: 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.

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 the respective specialty.

RECOMMENDED BOOKS

SL.NO.	TITLE	AUTHOR
1.	Periodontal Therapy (Part I) - (1980)	Goldman and Cohen

2.	Periodontal Therapy (Part II) - (1980)	Goldman and Cohen
3.	Textbook of clinical Periodontology (part I)	Jan Lindhe
4.	Textbook of clinical Periodontology (part II)	Gunnar
5.	Textbook of Clinical Periodontology (Part III)	Jan Lindhe
6.	Biology of Periodontal connective tissues-	Mark Bartold&Sampat Narayanan
7.	History of Periodontology	Carranza &Shklar
8.	Fundamentals of periodontics-- 2 nd edition	Wilson &Kornman
9.	Periodontics: Medicine, surgery & Implants (2004)-	Rose &Mealey&Genco&Cohen
10.	Tissue Engineering – Applications in Maxillofacial Surgery & Periodontics	Samuel Lynch, Robert Genco& Robert Marx.
11.	Textbook of Periodontology and Implantology 1 st edition.	DilipNayak, AshitaUppoor, Mahesh C P
12.	Clinical Periodontology and Implant Dentistry (fifth edition)	Niklaus P Lang, Jan Lindhe
13.	Tissue Engineering (second edition) Application in Oral & Maxillofacial Surgery and Periodontics-	Samuel E Lynch, Robert E Marx, Myron Nevins, Leshi A Wisnen- Lynch
14.	Periodontal Surgery – A Clinical Atlas.	SATO NAOSHI DDS
15.	Text Book of Periodontology Oral Implantology	Dilip G Nayak AshitaUppoor Mahesh C.P
16.	Periodontics 5 th edition	Eley
17.	Periodontics 5 th edition	Grant
18.	Caranza’s Clinical Periodontology 10 th edition.	Newman
19.	Text book of Periodontology and oral Implantology 2 nd edition	Dilip G Nayak AshitaUppoor Mahesh CP
20.	Contemporary Implant Dentistry 3 rd edition	Carl E, Misch
21.	Text book of Periodontology and oral Implantology 2 nd edition	Dilip G Nayak AshitaUppoor Mahesh CP
22.	The Life of P.D. Miller The Father of Periodontal Plastic Surgery	Dr.HiralJhaveri