PERIODONTOLOGY
SYLLABUS

PAPER –I

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
   - Microscopic and macroscopic anatomy
   - Blood supply of the periodontium
   - Lymphatic system of the periodontium
   - Nerves of the periodontium
5. TMJ, maxillae, mandible
6. Nerves of periodontics
7. Tongue, oropharynx
8. Muscles of mastication

PHYSIOLOGY

1. Blood
2. Respiratory system- respiratory disease which are a cause of periodontal disease. (periodontal medicine)
3. Cardiovascular system
   a. Blood pressure
   b. Normal ECG
   c. Shock
4. Endocrinology hormonal influence on periodontium
5. Gastrointestinal system
   a. Salivary secretion –composition, function, regulation
   b. Reproductive physiology
   c. Hormones
   d. Family planning methods
6. Nervous system
   a. Pain pathways
   b. Taste – taste buds,primary taste sensation, pathways of sensation

BIOCHEMISTRY

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

PATHOLOGY

1. Cell structure and metabolism
2. Inflammation and repair necrosis, degeneration
3. Immunity and hypersensitivity
4. Circulatory disturbance – oedema, hemorrhage, shock, thrombosis, embolism
5. Disturbances of nutrition
6. Diabetes mellitus
7. Cellular growth and differentiation, regulation
8. Lab investigations

9. Blood

MICROBIOLOGY

1. General Bacteria
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
4. Virology
a. General properties of viryuses
b. Herpes, hepatitis, HIV virus
5. Mycology
a. Candidiasis
6. Applied microbiology
7. Diagnostic microbiology and immunology, hospital 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. Haematics and coagulants, anticoagulants
    d. Vitamin D and calcium preparations
    e. Antidiabetic drugs
    f. Steroids
    g. Antibiotics
    h. Antihypertensives
    i. Immunosuppressive drugs
    j. Antiepilectic drugs
3. Brief pharmacology, dental use, adverse effects of
    a. General anesthetics
    b. Antipsychotics
    c. Antidepressants
    d. Anxiolytic drugs
    e. Sedatives
    f. Antiepileptics
    g. Antihypertensives
    h. Antianginal drugs
    i. Diuretics
    j. Hormones
    k. Pre anethetics medications
4. Drugs used in bronchial asthama cough
5. Drug therapy of
    a. Emergencies
    b. Seizures
    c. Anaphylaxis
    d. Bleeding
    e. Shock

f. Diabetic ketoacidosis
g. Acute addisonnian 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 of data – graphs, charts
- Measures of central tendency (mean, median and model standard deviation and variability
- Tests of significance (chi square test , t est, , Z test)
- Null hypothesis

PAPER II

ETIOPATHOGENESIS

1. Classification of periodontal disease and conditions
2. Epidemiology of gingival and periodontal diseases
3. Defense mechanisms of gingiva
4. Periodontal microbiology
5. Basic concepts of immunity and inflammation
6. Microbial interactionswith the host in periodontal diseases
7. Pathogenesis of paque 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 periodontium.
12. Role of environmental factors in the etiology of periodontal diseases
13. Sress and periodontal disease
14. Occlusion and periodontal disease
15. Smoking and tobacco in the etiology of periodontal diseases
16. AIDS and periodontium
17. Periodontal medicine
18. Dentinal hypersensitivity

PAPER III

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.

I. GINGIVAL DISEASES

1. Gingival inflammation
2. Clinical features of gingivitis
3. Gingival enlargement
4. Acute gingival infections
5. Desquamative gingivitis and OMM 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 forces
4. Masticatory system disorders
5. Chronic periodontitis
6. Aggressive periodontitis
7. Necrotizing ulcerative Periodontitis
8. Interdisciplinary approaches
a. Orthodontic
b. Endodontic
9. Periodontics considerations in periodontal therapy

III. 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 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
1. Bruxism and its treatment

B. Periodontal Instrumentation
1. Instrumentation
2. Principles of Periodontal instrumentation
3. Instruments used in different parts of mouth

C. Periodontal Therapy
1. Preparation of tooth surface
2. Plaque control
3. Antimicrobial and other drugs used in periodontal therapy and wasting diseases of the teeth
4. Periodontal management of HIV patients
5. Occlusion 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 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 (respective and regenerative)
8. Furcation problem and its management
9. The periodontic endodontic continuum
10. Periodontic plastic and aesthetic 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. Research directions in anti- inflammatory therapy
4. Future directions in measurement of periodontal diseases

F. Periodontal maintenance phase
1. Supportive periodontal treatment
2. Result of periodontal treatment

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 implants
6. Diagnosis and treatment of peri-implant complication
7. Special emphasis on plaque control measures implant patients
8. Maintenance phase.

MANAGEMENT OF MEDICAL EMERGENCIES IN PERIODONTAL PRACTICE
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 25 journal articles to be reviewed by each student during the P.G. course
- Interdepartmental seminars : each student during the P.G. course should present at least 1 seminar in interdepartmental meeting .meetings can be held at least once in a month.
- Library assignment: one to be presented at the end of the I8 months of the course.

ACADEMIC ACTIVITIES

I YEAR
Submission of synopsis for dissertation – within 6 months from the start of the course
Library assignment- to be submitted at the end of 1 year
II YEAR
Scientific paper presentation at the conferences
III YEAR
Scientific paper / poster presentation at the conferences
Submission of dissertation 6 months before the completion of 3rd year.

SKILLS:
First Year
Pre-clinical work

Dental
Practice of incisions and suturing techniques on the thyphodont models
Fabrication of bite guards and splints
Occlusal adjustments on the casts mounted on the articulator
x-ray techniques and interpretation
local anesthetic techniques

Medical
Basic diagnostic microbiology and immunology, collection and handing of samples, culture techniques
Basic understanding of the immunological diseases
Interpretation of various biochemical investigations
Practical training and handing medical emergencies and basic life support devices
Basic biostatistics –surveying and data analysis

CLINICAL WORK

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

Second year
CLINICAL WORK

1.	Case history and treatment planning	10 Cases
2.	Local drug delivery techniques	05 Cases
3.	Periodontal surgical procedures	
•	Pocket therapy	
•	Mucogingival surgeries	
•	Implants (2)	
•	Management of perio- endo problems	
4.	Occlusal adjustment	10 Cases
5.	Perio splints	10Cases

Third Year

CLINICAL WORK

1. Regenerative techniques
• Using various grafts and barrier membranes
2. Record, maintenance, follows up of all treated cases

3.5.3 FORMATIVE EVALUATION

-Assessment examinations: in addition to the regular evaluation, log book etc.

-Assessment examination should be conducted once every six months and progress of student monitored.

Note:-Submission of the synopsis for dissertation should be done within 06 months of the commencements of the course

Submission of two copies of library assignments at the end of 1 and 2nd year
Submission of pre-clinical work as scheduled.
Submission of dissertation – 6 months before completion III Year.
Maintenance of work diary / logbook.

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 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.

MDS I

Theory -

- Written examination every 3 months
- Term examination : October – 1st term, April – 2nd term
- Two papers : paper I – Basic Science, paper II – Basics in periodontology.

Practical :-

- Two term exams in October and April
- Hand scaling and Case History

MDS II

Theory:-

- Every two months
- Term examination : October – 1st term, April – 2nd term
- Four papers: Paper I, II, III, IV

Practical:-

- Term Examination
- Case History and sextant flap surgery

MDS III

Theory:-

- Monthly examination
- Preliminary examination in month of February
- Four papers: paper I, II, III, IV

Practical:-

- Flap surgery
- Short and long case history with case history discussion
- Post surgical viva
- Grand viva
- Main dissertation presentation

SUMMATIVE EVALUATION

UNIVERSITY EXAMINATION PATTERN FOR M.D.S.

1. **Theory :** 400 Marks

Total marks for each paper 100 Marks
Duration of each paper 03 Hours

Paper I:-
Applied basic sciences: Applied anatomy physiology, biochemistry, pathology, microbiology, pharmacology, research methodology & bio statistics.

Paper II :-
Normal periodontal structure, Etiology and pathogenesis of periodontal diseases, epidemiology as related to periodontics.

Paper III:-
Periodontal diagnosis, Therapy and oral implantology

Paper IV:
An essay

The topic assigned to the different papers is 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.

1st Day-

i)Appropriate periodontal surgery of patients including diagnosis & Treatment planning of the case. (Short Case)
100 Marks
ii) Detail case analysis, treatment planning and discussion (long case)100 Marks.

2nd Day -

i. Post- operative evaluation and discussion of surgical patients 50 Marks
ii. Evaluation of five completed periodontal implant cases. 50 Marks.

FORMATIVE EVALUATION

University examination Final year MDS will have 4 papers

- Paper I- Basic periodontology and Epidemiology
- Paper II- Etiology, pathogenesis of periodontal disease
- Paper III – Periodontal therapy including implantology
- Paper IV – Essay question

Clinical Examination:-

- Conducted over two days
- 1 quadrant flap surgery
- 1 long and 1 short case discussion
- Post-operative discussion on the 2nd day

Dissertation:-

- A student should defend his/her dissertation.

Viva- Voce