

## **PERIODONTOLOGY-DS202**

At the end of three years of training the candidate should be able to acquire adequate knowledge and skills pertaining to the discipline and inculcate the right attitude.

### **KNOWLEDGE:**

Theoretical, clinical and practical knowledge of all periodontal disease, diagnosis procedure pertaining to them and discuss historical perspective to advancement in subject proper and related topic.

### **SKILLS:**

1. Diagnostic skill in recognition of periodontal disease.
2. Skills to interpretate and establish radiographic diagnosis
3. Research skills in handling scientific problem pertaining to periodontal disease and their treatment.
4. Teaching skills.
5. Communication skill.

### **ATTITUDE:**

Positive mental attitude and interest to update the knowledge and skills through continued learning.

### **COURSE CONTENTS:**

#### **Part- I**

**Paper-I : Applied Basic Sciences: Applied Anatomy, Physiology, and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics.**

#### **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, maxilla and mandible.
6. Nerves of periodontics
7. Tongue, Oropharynx.
8. Muscles of mastication.

**Physiology:**

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

**Biochemistry:**

1. Basics of carbohydrates, lipids, proteins, vitamins, enzymes and minerals.
2. Diet and nutrition and periodontium
3. Biochemical test 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-oedema ,  
haemorrhage,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 genus actinomysis , and other filamentous bacteria and actinobacillus actinomycetum comitans
4. Virology
  - a. General properties of viruses
  - b. Herpes, hepatitis virus. HIV virus
5. Mycology
  - a. Candidiasis
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 non Opioid
  - b. Local anaesthetics
  - c. Hematinics and coagulants, anti-coagulants
  - d. Vitamin d and calcium preparations
  - e. Anti diabetic drugs
  - f. Steroids
  - g. Antibiotics
  - h. Antihypertensive
  - i. Immunosuppressive drugs and their effects on oral tissue
  - j. Antiepileptic drugs
3. Brief pharmacology, dental use and adverse effects of –
  - a. General anesthetics
  - b. Anti-psychotics
  - c. Anti- depressants
  - d. Axiolytic drugs
  - e. Sedatives
  - f. Anti epileptics
  - g. Anti- hypertensive's
  - h. Anti- anginal drugs
  - i. Diuretics
  - j. Hormones
  - k. Pre-anesthetic medications
4. Drugs used in bronchial asthma, cough
5. Drug therapy of-
  - a. Emergency
  - b. Seizures
  - c. Anaphylaxis
  - d. Bleeding

- e. Shock
  - f. Diabetic ketoacidosis
  - g. Acute adisonian 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 and mode) ,standard deviation and variability
5. Test of significance( chi square test, “t” test and “z” test
6. Null hypothesis

**Part-II**

**Paper I: Normal Periodontal structure, Etiology and Pathogenesis of Periodontal diseases, epidemiology as related to Periodontics**

**Etiopathogenesis:**

1. Classification of periodontal diseases and conditions
2. Epidemiology of gingival and periodontal diseases
3. Defense mechanisms of gingiva
4. Periodontal microbiology
5. Basics 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 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

## **Paper II: Periodontal diagnosis, therapy and Oral implantology**

Clinical and therapeutic Periodontology and oral Implantology

Please note:

Clinical periodontology includes gingival diseases, periodontal diseases, and 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 infection
5. Desquamative gingivitis and oral mucous membrane diseases
6. Gingival diseases in 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. Entotic
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. Advance 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 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 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
- IV. 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 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
- V. Management of medical emergencies in periodontal practice**

### **Paper III: Descriptive and analysing type question Academic Activities**

#### **First Year**

- 05 seminars in basic science subject
- 05 journal club presentation.
- 05 cases presentation in detail.
- Interdepartmental seminar: Each PG student should present at least 1 seminar in and interdepartmental meeting during PG course. Such meeting may be held at least once every month.
- Library dissertation to be submitted at end of one year.
- Selection of topic for dissertation and submitting the protocol within 6 months from start of course.
- Undergraduate teaching –taking small group discussion.
- Two short studies-observational study or clinical trial.
- Present at least 1 poster/paper at PG convention or conference/CDE.
- Basic training in computer.
- Assessment examination: In addition to regular evaluation, log book ,etc. Assessment
- Examination should conduct once every 6 month and progress of the student monitored.
- Maintenance of work done/log books prescribed by university:

#### **Pre – clinical work**

##### **Dental**

1. Practice of incision and suturing technique on the typhodont models
2. Fabrication of bite guard and splint
3. Occlusal adjustment on the cast mounted on the articulator
4. X-ray technique and interpretation
5. Anesthetic techniques

##### **Medical**

1. Basic diagnostic microbiology and immunology, collection, and handling of sample, culture techniques
2. Basic understanding of immunological diseases
3. Interpretation of various biochemical investigations
4. Practical training and handling medical emergencies and basic life support devices
5. Basic biostatistics – surveying and data analysis

##### **Clinical work**

- |                                |         |
|--------------------------------|---------|
| 1. Applied periodontal indices | 10CASES |
| 2. Scaling and root planning   |         |
| a) Hand                        | 15CASES |
| b) Ultrasonic                  | 15CASES |
| 3. Curettage                   | 10CASES |
| 4. Givectomy                   | 20CASES |
| 5. Gingivoplasty               | 10CASES |

**SECOND YEAR**

- Case history taking and clinical examination and treatment of various cases seen in department.
- 5 seminars.
- 5 journal club presentation.
- 5 cases presentation in detail.
- Interdepartmental seminar: Each PG student should present at least 1 seminar in and interdepartmental meeting during PG course. Such meeting may be held at least once every month.
- Present at least 1 poster/paper at PG convention or conference/CDE.
- Undergraduate teaching –taking small group discussion.
- Undergraduate teaching-2 lecture classes.
- Dissertation work.
- Assessment examination: In addition to regular evaluation, log book ,etc. Assessment examination should conduct once every 6 month and progress of the student monitored.
- Maintenance of work done/log books prescribed by university:

1. Clinical work	10 CASES
2. Case history and treatment planning	5 CASES
3. Local drug delivery technique	5 cases
4. Periodontal surgical procedures with 1 yr follow up	
- pocket therapy	
- Muco-gingival surgeries	
- Implants (2 implant)	
-Management of Perio endo problems	
5. Occlusal adjustments	10 CASES
6. Perio splints	10 CASES

**THIRD YEAR**

- Case history taking and clinical examination and treatment of various cases seen in department.
- 5 seminars
- Present at least 1 poster/paper at PG convention or conference/CDE.
- 5 journal club presentation.
- 5 cases presentation in detail
- Interdepartmental seminar: Each PG student should present at least 1 seminar in and interdepartmental meeting during PG course. Such meeting may be held at least once every month.
- Completion of dissertation and presentation.(6 months before completion of 3<sup>rd</sup> year)

- Publication of at least one case report /short study in indexed journal. (national or international).
- Submission of 15 type seminar and 10 interesting cases, 25 J.C and department profile of one year follow up.
- Model examination and theory and practical examination.
- University exam at the end of third year with four theory exam and clinical exam on 2 days with one long case, 1 short cases and two spotters, radiographic exercises dissertation presentation, viva voice.
- Assessment examination: In addition to the regular evaluation, log book etc., Assessment examination should be conducted once every six months and progress of the student monitored.
- Maintenance of work done/log books prescribed by university:

### Clinical work

1. Regenerative techniques
  - using various graft and barrier membrane
2. Record. Maintenance and follow up of all treated including implants

### Practical/clinical examination: 200 marks

The clinical examination shall be of two days duration.

#### 1<sup>st</sup> day: Case Discussion

\*Long Case-1

\*Short Case-1

#### 2<sup>nd</sup> day: Distribution of marks for clinical examination (recommended)

Sr no.	Title	Marks
1.	<b>Long Case discussion</b>	50
2.	<b>1 Short Case</b>	20
3.	<b>Periodontal surgery</b>	
	<b>Case selection</b>	10
	Case history	15
	Infection control	5
	LA	10
	Reflection of flap	10
	Debridement	40
	Suture	10
	<b>Total</b>	<b>90</b>
4.	<b>Post op viva</b>	30
5.	<b>Total</b>	<b>200</b>

### C. VIVA VOICE: 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 course contents. It includes presentation and discussion on dissertation also.

**ii. Pedagogy Exercise: 20 marks**

A topic be 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.