



**VINAYAKA MISSION'S  
RESEARCH FOUNDATION**  
(Deemed to be University under section 3 of the UGC Act 1956)



**VINAYAKA MISSION'S  
SANKARACHARIYAR  
DENTAL COLLEGE**



# Program and Course Outcomes -MDS



**Vinayaka Mission's Sankarachariyar Dental College**  
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# MASTER OF DENTAL SURGERY PROGRAM LEARNING OUTCOME



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## ORAL MEDICINE AND RADIOLOGY

A MDS graduate is expected to be

PLO 1. Able to examine, develop diagnostic skills and differentiate all oral mucosal lesions, skeletal involvement of maxillofacial region.

PLO 2. Able to apply the knowledge of basic medical sciences in dental patients and Plan necessary and advanced diagnostic procedures in oral mucosal lesions, skeletal involvement of maxillofacial region and in orofacial pain.

PLO 3. Performs, Plans extra oral radiographic techniques and displays diagnostic skills in interpreting radiographs and chairside investigations.

PLO 4. Formulates the treatment plan in non-surgical management of dental patients with systemic diseases, Orofacial plan, TMJ disorders.

PLO 5. Develops basic research skills and displays didactic skills

PLO 6. Demonstrates good communication skills, positive mental attitude and demonstrates continued learning skills.

## ORAL AND MAXILLO FACIAL SURGERY

At the end of the programme the students will be able to

PLO 1. Execute basic sciences relevant to practice of oral and maxillofacial surgery

PLO 2. Implement adequate knowledge and understanding of the etiology, pathophysiology and diagnosis, treatment planning of various common oral and maxillofacial surgical problems

PLO 3. Recognise social, cultural, economic, genetic and environmental factors and their relevance to disease process management in the oral and maxillofacial region

PLO 4. Perform minor oral surgical procedures and common maxillofacial surgery to treat both medically and surgically the problems of the oral and maxillofacial and the related area

PLO 5. Execute providing care for maxillofacial surgery patients

PLO 6. Shares knowledge and clinical experience with professional colleagues

PLO 7. Proceeds new techniques of surgical management developed from time to time based on scientific research which are in the best interest of the patient

## PERIODONTOLOGY

### **PLO 1.**

Able to demonstrate, understand biostatistics and research methodology

### **PLO 2.**

Understand the etiology, pathogenesis, diagnosis and management of periodontal diseases

### **PLO 3.**

Able to perform both surgical and non-surgical management of periodontal diseases

### **PLO 4.**

To develop skills and knowledge to perform in the field of oral implantology, laser surgery, piezosurgery and advanced regenerative techniques

### **PLO 5.**

To gain knowledge outside the area of his/her speciality and refer those to an appropriate speciality

### **PLO 6.**

To understand and manage the interrelationship between periodontal disease and various systemic conditions.

## Conservative and Endodontics

On completion of this course, the students will be able to

PLO 1. Formulate etiology, pathophysiology, diagnosis, differential diagnosis and management of restorative/endodontic situations that include contemporary management of trauma, pulpal pathosis including periodontal situations and also develop skill to master differential diagnosis and recognise conditions that may require multidisciplinary approach or a clinical situation outside the realm of the speciality, which the operator should be able to recognise and refer to appropriate specialist.

PLO 2. Apprise by self-study on attending basic and advanced courses, conferences, seminars, workshops and also teach /guide colleagues and other students.

PLO 3. Design research study with aim of publishing his/her work and presenting the same at scientific platform

PLO 4. Construct and perform all levels of restorative work, surgical and non-surgical endodontics as well as endodontic-periodontal surgical procedures as part of multidisciplinary approach.

PLO 5. Justify ethical principles in all aspects of restorative and contemporary Endodontics.

## **ORTHODONTICS AND DENTOFACIAL ORTHOPEDICIS**

### **PO1**

Apply basic scientific knowledge for the safe, effective and efficient practice of orthodontics.

### **PO2**

Assess anomalies of the dentition and facial growth and attain competency in practical and clinical skills in orthodontic management.

### **PO3**

Support a multidisciplinary approach for compromised cases and engage the community to enhance their potential in oral healthcare through social skills.

### **PO4**

Conduct oneself in a professional manner within the ethical and legal framework pertaining to the practice of preventive and interceptive orthodontics.

### **PO5**

Communicate effectively with patients, accompanying family members, peers and other health professionals to ensure a more holistic delivery of health care.

### **P06**

Acquire problem solving and scientific skills in order to manage complex dentofacial and orthodontic problems.

### **P07**

Acquire the competency to manage information and life –long learning skills.

### **P08**

Act effectively as an individual and in a group with leadership, managerial and entrepreneurial capabilities.

## PEDIATRIC AND PREVENTIVE DENTISTRY

PLO 1. Conceptualize and advocate the various behaviour management techniques in pediatric dentistry & appraise a good oral health by constructing positive attitude in children

PLO 2. Organise, relate and operate on the principles of prevention in pediatric dentistry right from birth to adolescence including children with special health care needs

PLO 3. To plan and construct an individualized treatment protocol for the developing malocclusion

PLO 4. To understand and apply the principles of bio statistics and research methodology



## PROSTHODONTICS

PLO 1: Apply experience, scientific knowledge and methods to the management of problems associated with partial and completely edentulous situations.

PLO 2: Demonstrate the clinical proficiency necessary to carry out appropriate

PLO 3: Treatment at higher level of knowledge, training and practice skills currently available in field of prosthodontics

PLO 4: Manage a diverse patient population and have the interpersonal and communication skills to function successfully in a multi-cultural work environment.

PLO 5: Apply the principles of ethical reasoning and professional responsibility as they pertain to patient care and practice management in pertaining to basic & advanced courses in Prosthodontics

PLO 6: Communicate effectively with dental auxiliaries, dental laboratory technicians and other health care providers to ensure appropriate prosthodontics treatment

PLO 7: Analyse and solve clinical problems through scientific knowledge & skills particularly in relation with basic & advanced courses in Prosthodontics

PLO 8: Use the scientific literature and information management resources to provide evidence based care

PLO 9: To acquire managerial & entrepreneurial skills for management of complex prosthodontic problems

**ORAL & MAXILLOFACIAL PATHOLOGY AND ORAL  
MICROBIOLOGY**

A MDS graduate is expected to be

PLO 1. Able to Demonstrate, Understand biostatistics and research methodology.

PLO 2. Able to Apply, Implement the knowledge of basic medical sciences in dental patients and to recall, reproduce and to implement the basic pathology, microbiology and basic molecular aspects of pathologies.

PLO 3. Calibrate and Reproduce Basic hematological tests and urine analysis and Recognize and Confirms its clinical significance.

PLO 4. Understand the pathological processes of oral diseases, Identify , Compare and Interpret diseases based on clinical, radiological and histopathological findings.

PLO 5. Perform ground sections of hard tissues, Oral Exfoliative Cytology, Oral Histology slides, biopsy procedures, tissue processing and slide preparation with more efficiency and confidence.

PLO 6. To Prepare Pathological Slides and be able to Differentiate and Identify the diseases based on microscopy.

PLO 7. Develop and Display knowledge on Forensic Odontology and measure or Calibrate the age based on teeth, cast and x rays.

PLO 8. Understand and Identify the diagnosis of the Pathologies to the patients and Support the Oral Surgeons in Planning the treatment

## PUBLIC HEALTH DENTISTRY

**PO1:** To take history, conduct clinical examination including all diagnostic procedure to arrive at diagnosis at the individual level and Community Level to conduct survey of the community at state and national level of all conditions related to oral health to arrive at community diagnosis.

**PO2:** To understand the knowledge of epidemiology to identify causes and plan appropriate preventive and control measures with multi-disciplinary approach.

**PO3:** To develop appropriate Community Oral Health Program, conduct the program and evaluate at the community level.

**PO4:** To Demonstrate knowledge of global and national needs, policies and regulatory frame works relevant to oral health.

**PO5:** to Communicate effectively with fellow colleagues, health care givers, patients, and to improve health care outcomes.

**PO6:** To understand and manage ethical, medico-legal, and professional issues in dental practice.

**MASTER OF DENTAL SURGERY (MDS)**

**COURSE LEARNING OUTCOME**

**ORAL MEDICINE & RADIOLOGY**

**ORAL MEDICINE & RADIOLOGY**  
**COURSE LEARNING OUTCOMES**

**PART I: APPLIED BASIC SCIENCES**

At the end of the course training in Applied Basic Sciences, a student should be able to:

1. Apply(C3) and implement (C3) the knowledge gained from Anatomy, Histology, Biochemistry and Physiology of oral and para oral structures.
2. Recall (C1), reproduce (C1) and implement (C3) the Basic Pathology, Microbiology, pharmacology in applied clinical aspects.
3. Demonstrate (C3) knowledge and understanding (A1) of Biostatistics and Research Methodology.

**Part II**

**Paper I: Oral and Maxillofacial Radiology**

On completion of the course, the Post Graduate (MDS) in Oral Medicine and Radiology will be able to;

1. Conceptualizes(A4) the knowledge of diagnosis and diagnostic methods, ionizing radiation, its applications in dentistry and its limitations.
2. Demonstrates(A3) the proficiency in detailed physical examination of the oral and para-oral structures, identification(C2) of pathologies and techniques involved in conventional and advanced diagnostic radiographic examination.
3. Perform(P4) intraoral and extraoral radiographs and interpret(C3) them.
4. Apply high moral(A3) and ethical standards while carrying out clinical and radiographic examinations.
5. Identify(C2) the principles of various imaging modalities and image feature of normal anatomy.
6. Assess(P4) the appropriate imaging examination methods and image quality for the pathological conditions to ensure optimal images.

7. Analyse(**C5**) the morphology and functions of oral and maxillofacial region using radiographic imaging modalities and apply radiographic differential diagnosis.
8. Describe (**C2**) the philosophy and methods regarding radiation safety and protection protocol.
9. Alter (**P6**) the routine imaging parameters according to patient limitations/needs.

### **Paper II: Oral Medicine, Therapeutics and Laboratory investigations**

On completion of the course, the Post Graduate (MDS) in Oral Medicine and Radiology will be able to;

1. Possess ample understanding(**A1**) and knowledge of etiology, pathophysiology and principles of diagnosis of odontogenic and non-odontogenic lesions in adults and children
2. Displays(**P5**) clinical skill to diagnose and able to give differential diagnosis of various oral lesions including dental, oral mucosal conditions and Oro-facial pain.
3. Perform(**P4**) special investigations like smear, FNAC, biopsy.
4. Choose(**P1**) and apply (**C3**) the appropriate chairside and laboratory investigations for Oro facial pathologic conditions.
5. Perform(**P4**) non-surgical treatment modality for oral lesions.
6. Choose (**P1**) appropriate dental treatment method for patients with systemic disease and medically compromised patients.
7. Understand(**C2**) and manage medical emergencies in dental situation.
8. Apply high moral(**A3**) and ethical standards while performing clinical examination, investigations and treatments.

**Paper III: RECENT ADVANCES IN ORAL MEDICINE AND RADIOLOGY**

On completion of MDS course, the specialist in oral medicine and radiology must be able to

1. Understand and have knowledge about the recent advances in various aspects of dental, oral and jaw lesions.
2. Differentiate the oral manifestation and dental implication of systemic disorders in dental patients
3. Have comprehensive knowledge of the basics and recent advances in diagnosis, investigations and treatment of orofacial conditions.
4. Acquire knowledge of the recent advances and developments in radiography and other imaging modalities of the oral and maxillofacial region.

**MASTER OF DENTAL SURGERY (MDS)**

**COURSE LEARNING OUTCOME**

**ORAL AND MAXILLO FACIAL SURGERY**



## ORAL AND MAXILLO FACIAL SURGERY

At the end of the programme the student should be able to

### PART I- PAPER I-APPLIED BASIC SCIENCES

1. Describe the surgical anatomy ,the pathologies and congenital abnormalities of head and neck [C1]
2. Relate the investigations to the clinical findings to form the final diagnosis of the conditions of the head and neck. [C4]
3. Apply the knowledge of fluid and electrolyte homeostasis in minor and major surgical procedures. [C3]
4. Define and recognise infections of maxillofacial region with knowledge of management of immunosuppressed individuals.[C1, C2]
5. Apply [C3] knowledge and understanding [A1] of Biostatistics and research methodology

### PART II PAPER I- MINOR ORAL SURGERY AND TRAUMA

1. Perform [A2] minor oral surgical procedures with efficiency and confidence.
2. Describe assessment and management of maxillofacial trauma ,
3. Perform management of airway obstruction , medical emergencies

### PAPER II: MAXILLOFACIAL SURGERY

1. Correction of jaw deformities, TMJ disorders, cyst and tumors of head and neck region and management of craniofacial anomalies. [C2]
2. Apply knowledge on preoperative workups, surgical intervention under general anesthesia , post operative care of patients undergoing maxillofacial surgical procedures. [C3]  
and infections involving head and neck regions. [A2]
3. Describe the management of cleft lip and palate ,implantology and distraction osteogenesis [C2].
4. Understands [C2] the principles of management of head and neck oncology including various precancer lesions and surgical techniques of reconstruction following ablative surgery.

**PAPER III- Recent advances(Descriptive & Analyzing type)**

Apply [C3] basic knowledge from

At the end of the programme, the students should diagnose, meticulously plan and manage competently various conditions in the maxillofacial region .

They should know the conventional and recent advances in the diagnosis and management of oral and maxillofacial conditions.

The students would be well versed in basic surgical principles and knowledgeable about the advanced skills required in maxillofacial surgery. They should be capable of working as a team when necessary.

**MASTER OF DENTAL SURGERY (MDS)**

**COURSE LEARNING OUTCOME**

**PERIODONTOLOGY**

## **PERIODONTOLOGY**

### **PART I PAPER 1 (APPLIED BASIC SCIENCES)**

At the end of the course training in **PART I PAPER 1 (APPLIED BASIC SCIENCES)**, a student should be able to

1. Describe (C1) micro and macro structural anatomy and biology of the periodontal tissues.
2. Explain (C2) anatomy of the Periodontium.
3. Describe (C1) age changes in the periodontal tissues.
4. Describe (C1) development of the Periodontium.
5. Describe (C1) interrelationship between periodontal disease and various systemic conditions.
6. Describe (C1) Inflammation and repair, necrosis and degeneration in periodontal tissues.
7. Demonstrate (C3) Sterilization and disinfection.
8. Describe (C1) Pharmacokinetics with clinical applications, routes of administration including local drug delivery in Periodontics.
9. Demonstrate ( C3 ) knowledge and understanding of biostatistics and research methodology.

## **PART II PAPER 1 (ETIOPATHOGENESIS )**

At the end of the course training in **PART II PAPER 1 (ETIOPATHOGENESIS )**, a student should be able to

1. Identify (C2) patients with existing gingival and periodontal pathologies.
2. Classify (C2) of periodontal diseases and conditions.
3. Describe (C2) clinical features of gingivitis, plaque associated gingivitis and acute gingival infections.
4. Classify (C2) gingival enlargement, desquamative gingivitis, periodontal Pockets and explain (C2) the mechanism of spread of inflammation from gingival area to deeper periodontal structures.
5. Define (C1) dental plaque and discuss (C2) the role of dental plaque in the pathogenesis of periodontal diseases.
6. Define (C1) Trauma from Occlusion and Explain Its Role in Pathogenesis of Periodontal Diseases
7. Describe (C1) the mechanism of initiation and progression of periodontal diseases.
8. Describe (C2) the association between systemic diseases and periodontitis.
9. Differentiate (P1) between chronic periodontitis and aggressive periodontitis.

**PART II PAPER 2 (CLINICAL AND THERAPEUTIC PERIODONTOLOGY  
AND ORAL IMPLANTOLOGY)**

1. Define (C2) prognosis and describe (C2) the types of prognosis.
2. Define (C1) treatment plan and Explain (C2) phases of treatment plan.
3. Demonstrate (C3) brushing techniques and dental flossing techniques.
4. Describe (C2) the indications and contraindications of periodontal flap and explain (C2) the goals of periodontal flap.
5. Describe (C1) the flap Techniques.
6. Differentiate (P1) between resective and additive osseous surgery.
7. Explain (C2) gingival extension procedures like lateral pedicle graft, frenectomy and frenotomy.
8. Define (C1) periodontal regeneration, reattachment, repair and new attachment.
9. Explain (C2) methods of maintaining periodontal stability of dental implants during maintenance phase.
10. List (C1) the antibiotics and analgesics used in periodontal therapy.
11. Explain (C2) sterilization procedures for periodontal instruments.

**PART II PAPER 3 ( DESCRIPTIVE AND ANALYSING TYPE QUESTION)**

1. Explain ( C2) the need for advanced diagnostic aids and describe (C1) the principles of diagnostic tests.
2. Define (C1) laser, Discuss (C2) about various soft tissue lasers and Describe (P1) the application of diode lasers in periodontology.
3. Define (C1) a dental implant, Explain (C2) the types of implant and Explain (C2) osseointegration.
4. Classify (C2) periodontal splints and Explain (C2) principles of periodontal splinting.
5. Explain (C2) principles of photodynamic therapy.
6. Explain (C2) the recent advancements in periodontal treatment modalities.

**MASTER OF DENTAL SURGERY (MDS)**

**COURSE LEARNING OUTCOME**

**CONSERVATIVE DENTISTRY AND ENDODONTICS**



## CONSERVATIVE DENTISTRY AND ENDODONTICS

### PART -I:APPLIED BASIC SCIENCES, BIOSTATISTICS, RESEARCH METHODOLOGY AND DENTAL MATERIALS

At the end of the course in Applied Basic Sciences, the PG student should be able to:

1. **Describe and implement** the knowledge gained from Head and neck Anatomy, oral and paraoral structures, Applied Physiology and biochemistry, Applied pathology and microbiology, Applied pharmacology for effective diagnosis and treatment planning. Execute the basic science knowledge in comprehensive management of clinical cases. (C2,C3)
2. **Recall, reproduce and implement** the basic science knowledge in diagnosis/differential diagnosis and management of conservative and endodontic clinical conditions.(C1,C3)
3. **Select, design and formulate** applicable Biostatistics and Research Methodology. (C5,C6,A4)

### PART -II (PAPER I):CONSERVATIVE DENTISTRY, DENTAL MATERIALS & RECENT ADVANCES

On completion of this course, the PG students should be able to

1. **Formulate** etiopathogenesis, diagnosis, differential diagnosis and management of dental caries including contemporary concepts in management of deep carious lesions, minimal invasive dentistry and develop skill to master various aesthetic techniques in conservative dentistry. (C6)
2. **Appraise** by self-study on attending advanced courses, conferences, seminars, workshops and also teach /guide colleagues and other students. (C5)
3. **Design** research study with aim of publishing his/her work and presenting the same at scientific platform.(P7)
4. **Construct** and perform all levels of conservative and aesthetic work, including procedures by a multidisciplinary approach.(P5)

5. **Justify** ethical principles of all aspects of conservative and aesthetic dentistry.(A3)

**PART –II (PAPER II): ENDODONTICS, DENTAL MATERIALS**  
**&RECENT ADVANCES**

On completion of this course, the students will be able to

1. **Formulate** etiology, pathophysiology, diagnosis, differential diagnosis and management of endodontic situations that include contemporary management of trauma, pulpal pathosis including periodontal situations and also develop skill to master differential diagnosis and recognise conditions that may require multidisciplinary approach or a clinical situation outside the realm of the speciality, which the operator should be able to recognise and refer to appropriate specialist. (C6)
2. **Apprise** by self-study on attending basic and advanced courses, conferences, seminars, workshops and also teach /guide colleagues and other students. (C5)
3. **Design** research study with aim of publishing his/her work and presenting the same at a scientific platform.(P7)
4. **Construct** and perform all levels of restorative work, surgical and non-surgical & surgical endodontics as well as endodontic-periodontal surgical procedures as part of multidisciplinary approach.(P5)
5. **Justify** ethical principles in all aspects of contemporary Endodontics.(A3)

## **PART -II (PAPER III)**

### **ESSAYS**

On completion of this course, the students will be able to

1. Critically discuss on recent concepts in the management of a maxillary central incisor with open apex, for a patient aged 20 years by Regenerative endodontics.  
(C5,C2)
  
2. Smile design – Construct and select on the ideal treatment protocol for the management of malformed non carious incisors and cuspids in a female patient, aged 18 years.(C6,C5)
  
3. Critically compare and contrast chronologically, concepts and advances in Adhesion strategies.(C5,C4)

**MASTER OF DENTAL SURGERY (MDS)**

**COURSE LEARNING OUTCOME**

**ORTHODONTICS AND DENTOFACIAL ORTHOPAEDICS**

## **ORTHODONTICS AND DENTOFACIAL ORTHOPAEDICS**

### **PART I-PAPER I -APPLIED BASIC SCIENCES**

The student will be able to

- 1) Understand the knowledge of human body [Anatomy, Physiology]
- 2) Understand basic concepts of growth of human
- 3) Understand basic anatomical area of human head and skull [hard and soft tissue]
- 4) Understand the properties and usage of materials used in dentistry and orthodontics.
- 5) Understand the basic knowledge of application of statistics.
- 6) Understand genetics related to malocclusion, genetic counselling.

### **PART II – PAPER I-DIAGNOSIS AND TREATMENT PLANNING**

- 1) With the basic knowledge of growth and development of hard and soft tissues.
- 2) With a normal and increased and decreased values [linear and angles] Diagnosis and appropriate treatment planning for good form, function and aesthetics.

### **PART II-PAPER II - CLINICAL ORTHODONTICS AND MECHANOTHERAPY**

- 1) By knowing and understanding the mechanics used in the field of orthodontics, globally accepted, experimental, evidence based literature and international textbooks.
- 2) Implementing techniques to the patients for better results without producing any ill effects.

### **PART II- PAPER III-ESSAYS (DESCRIPTIVE AND ANALYZING TYPE)**

Having an advanced knowledge of understanding and implementing the standard of recent advances in technology and advanced implementation of latest technologies incorporating in the field of orthodontics.

**MASTER OF DENTAL SURGERY (MDS)**

**COURSE LEARNING OUTCOME**

**PEDIATRIC AND PREVENTIVE DENTISTRY**

## PEDIATRIC AND PREVENTIVE DENTISTRY

### 1. PART I- APPLIED BASIC SCIENCES

At the end of the course training in applied basic sciences, a student should be able to:

- a. **Recognize (C2) and implement (C3)** the modifications in growth and development as it applies to pediatric population based on the knowledge gained from Anatomy, Physiology, Biochemistry, Microbiology, Pathology and genetics.
- b. **Understand (A1, C2)** the general principles and **propose (A3)** an appropriate nutrition and diet plan for a growing child.
- c. **Understand (A1, C2) and plan (C3)** the Basic Research Methodology and Biostatistics so as to **execute (C3)** an effective research protocol.

### 2. PART II- PAPER I CLINICAL PAEDODONTICS

At the end of the course training in clinical pedodontics, a student should be able to:

- a. **Identify (C2) and recognize (C2)** the various dental diseases and based on the behavior pattern **sketch (C3)** a suitable treatment procedure that includes sedation and general anesthesia.
- b. **Recall (C1) and reproduce (P3)** the concepts and **perform (A2)** dental operative procedures for various pulpal diseases, traumatic injuries and **execute (C3)** minor oral surgical procedures and **respond (P3)** to dental emergencies in Children
- c. **Recognise (C2)** the developing oral habits and malocclusions to **plan (C3)** and **construct (P5)** an individualized treatment protocol.
- d. **Listen (A1), understand (A1, C2) and assist (A2)** on the conditions of disabled children efficiently and **act upon (A5)** their individual requirement and conditions.
- e. Distinguish the behaviour pattern and proceed and sketch a treatment plan

### 3. PART II-PAPER II -PREVENTIVE AND COMMUNITY DENTISTRY AS APPLIED TO PEDIATRIC DENTISTRY

At the end of the course training in Preventive and Community Dentistry as applied to Pediatric Dentistry a student should be able to:

- a. **Translate (C2)** the concepts of child psychology, **Conceptualize (A4) and advocate (A5)** the various behaviour management techniques in pediatric dentistry.
- b. **Detect (P1), report (C2) and act upon(A5)** the cases of Child Abuse & dental Neglect

- c. **Organise (A4, C4, P5), relate (C4, P1) and operate (C3)** on the principles of prevention in pediatric dentistry right from birth through adolescence.
- d. **Understand (A1, C2) and plan (C3)** the Basic Research Methodology and Biostatistics so as to **execute (C3)** an effective research protocol.
- e. **Appraise (C5) and Support (C5)** the clinical cases using photography and computers for evidence based documentation.

4. **PART II-PAPER III- ESSAYS (DESCRIPTIVE AND ANALYZING TYPE QUESTIONS)**

At the end of the course training in descriptive and analyzing type essay question a student should be able to:

- a. **Understand (A1, C2), assist (A2), initiate (A3), conceptualize (A4) and justify (A5)** the pediatric oral health practices and to **construct (P5)** a positive attitude in children.
- b. **Differentiate (C4), distinguish (C4), defend (C5) and support (C5)** the various principles and practices employed in pediatric and preventive dentistry.



**MASTER OF DENTAL SURGERY (MDS)**

**COURSE LEARNING OUTCOME**

**PROSTHODONTICS AND CROWN & BRIDGE**

## PROSTHODONTICS AND CROWN & BRIDGE

At end of the course training in prosthodontics, the learner should be able to:

### PART I- APPLIED BASIC SCEINCES

1. Apply the principles of craniofacial development and growth in relation to clinical dentistry.
2. Demonstrate the understanding of anatomy, physiology, molecular medicine, oral histology, tooth morphology, pathology & microbiology of the tissues related to oral cavity.
3. Outline the various drugs & their pharmacokinetic & pharmacodynamic properties used in the management of oral of diseases.
4. Demonstrate the understanding of biostatistics & research methodology which are helpful in undertaking research
5. Conceptualize the values of ethics & comply with medico legal aspects of dentistry.
6. Analyse the composition, properties, biocompatibility, manipulation and recent advances of Dental materials used in the field of prosthodontics.
7. Formulate diagnosis for defects/ diseases of teeth using basic and advanced diagnostic procedures and develop a comprehensive treatment plan to address restorative needs and desires of the patient in conjunction with their overall dental health needs.

### **Part II**

#### Paper I : Removable, Prosthodontics and Implant Supported Prosthesis (Implantology), Geriatric Dentistry and Craniofacial Prosthodontics.

On completion of the course, the post graduates (MDS) in Prosthodontics and Crown and Bridge including Implantology will be able to;

1. Conceptualizes (A4) the knowledge of diagnosis for edentulous, partially edentulous and craniofacial defects.
2. Conceptualizes (A4) the knowledge of diagnosing the problems in Geriatric Patients.
3. Demonstrates (A3) the proficiency in detailed examination of the defects, identification(C2) of the problem.
4. Perform (P4) impression making and cast fabrication, analyse and carry out the designing (C6) of the prosthesis for the given situation.
5. Interpret (C3) radiographs and CBCT for treatment planning for implant restoration.
6. Evaluates (C5) various concepts and views and adopt them in most rational approach.
7. Identify (C4) social , economic, environmental and emotional determinants in a given case and take them into account for planned treatment.
8. Recognise (C5) conditions that may be outside the area of speciality or competence and to refer them to the concerned specialist (in case of Craniofacial defects)
9. Apply high moral (A3) and ethical standards while carrying out the procedures.

## **PART: II PAPER: II**

### **FIXED PROSTHODONTICS, OCCLUSION, TMJ AND ESTHETICS**

On completion of the course, the post graduates (MDS) in fixed prosthodontics will be able to:

1. Possess ample understanding (A1) and knowledge, definitions, terminologies, classifications, principles of tooth preparation, designs, mechanical and biological considerations of components like retainers, connectors, pontics, abutments, crown morphologies, splinting's, TMJ, muscles of mastication
2. Display (P5) clinical skills in individual tooth preparation for metal crowns, metal ceramic restorations, all ceramic restorations, veneers, laminates, partial crowns, inlays and onlays.
3. Perform (P4) tooth preparation, isolation, fluid control with rubber dam, impression making, cast pouring.
4. Perform (P4) Lab procedures for fabrications of ceramics, resins, gold alloys.
5. Understand (C2) about CAD-CAM, Failed restorations, osteointegration support fixed prosthesis

### **PART II PAPER III: RECENT ADVANCES IN PROSTHODONTICS AND CROWN & BRIDGE**

On Completion of MDS course, the specialist in Prosthodontics and crown and bridge must be able to

1. Understand and have knowledge about the recent advances in various aspects of Dental restoration for the completely edentulous, Partially edentulous and maxillofacial defects.
2. Differentiate the oral manifestations and the dental implications of systemic disorders in completely and partially edentulous patients.
3. Acquire knowledge of the recent advances and developments in Dental Materials & Implantology.
4. Have a comprehensive knowledge of the basics and recent advances in diagnosis, treatment planning of temporomandibular disorders.

**MASTER OF DENTAL SURGERY (MDS)**

**COURSE LEARNING OUTCOME**

**ORAL AND MAXILLOFACIAL PATHOLOGY & ORAL MICROBIOLOGY**

## **ORAL AND MAXILLOFACIAL PATHOLOGY & ORAL MICROBIOLOGY**

### **PART I. APPLIED BASIC SCIENCES**

At the end of the course training in Applied Basic Sciences, a student should be able to :

1. Demonstrate **(C3)** knowledge and understanding **(A1)** of Biostatistics and Research Methodology.
2. Apply **(C3)** and implement **(C3)** the knowledge gained from Anatomy, Histology, Biochemistry and Physiology of oral and paraoral structures into effective Pathology reporting.
3. Recall **(C1)**, reproduce **(C1)** and implement **(C3)** the Basic Pathology, Microbiology and Basic Molecular aspects of pathology in reporting Pathologies.

### **PART II PAPER I-ORAL PATHOLOGY, MICROBIOLOGY, IMMUNOLOGY AND FORENSIC ODONTOLOGY**

At the end of the course training in Oral pathology, Microbiology and Forensic Odontology, a student should be able to :

1. Understand **(A1)**, explain **(P2)** and describe **(C1)** the pathological processes of oral diseases.
2. Understand **(A1)** the pathological processes of oral diseases, identify **(C2)**, compare **(C4)** and interpret **(C3)** diseases based on clinical, radiological and histopathological findings.
3. Construct **(C6)**, make **(P4)** and perform **(A2)** ground sections of hard tissues, Oral Exfoliative Cytology and Oral Histology slides with efficiency and confidence.
4. Display **(P2)** knowledge to prepare **(P4)**, design **(C6)** and construct **(P4)** Pathological Slides and be able to differentiate **(C4)** and identify **(P1)** the diseases based on microscopy.
5. Develop **(C6)** and display **(P2)** knowledge on Forensic Odontology and measure or calibrate **(P5)** the age based on teeth, cast and x rays.
6. Understand **(C2)** and identify **(P1)** the diagnosis of the Pathologies to the patients and Support **(A5)** the Oral Surgeons in planning **(P4)** the treatment.

## **PARTII-PAPER II- LABORATORY TECHNIQUES, DIAGNOSIS AND ONCOLOGY**

At the end of the course training in Laboratory Techniques, Diagnosis and Oncology, a student should be able to:

1. Display **(P2)** knowledge and efficiency **(P4)** and proceed **(P2)** to do Exfoliative Cytology, Biopsy Procedures, Tissue Processing and Slide preparation.
2. Recognize **(C2)**, differentiate **(C4)** and begins **(P2)** to use the chemicals and equipment's in laboratory.
3. Proceed **(P2)** to take short and long case histories, Detect **(P1)** and differentiate **(P1)** the microscopic slides and compose **(P7)** Pathological report of oral diseases and oral lesions.
4. Calibrate **(P4)** and reproduce **(P3)** Basic hematological tests and urine analysis and recognize **(C2)** and conforms **(A2)** its clinical significance.

## **PART II PAPER III-ESSAY**

At the end of the course training in Essays, a student should be able to :

1. Display **(P2)** comprehensive knowledge on Pathologies of oral and paraoral structures and should be able to reproduce **(C1)** related pathologies.
2. Describe **(C1)**, discuss **(C2)** and explain **(P2)** the recent advanced methodology / techniques and molecular aspect.

**MASTER OF DENTAL SURGERY ( MDS )**  
**COURSE LEARNING OUTCOME**  
**PUBLIC HEALTH DENTISTRY**

## PUBLIC HEALTH DENTISTRY

### **PAPER-I- BASIC SCIENCES AND RESEARCH METHODOLOGY**

1. To Apply **(C3)** basic sciences knowledge regarding etiology, diagnosis and management of the prevention, promotion and treatment of all the oral conditions at the individual and community level.
2. To Perform **(A2)** to take history, conduct clinical examination including all diagnostic procedure to arrive at diagnosis at the individual level and conduct survey of the community at state and national level of all conditions related to oral health to arrive at community diagnosis.

### **PAPER-II- PUBLIC HEALTH**

1. To Identify **(C2)** social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of Community Oral Health Program.
2. To Develop **(C6)** appropriate Community Oral Health Program, conduct the program and evaluate at the community level.
3. To Develop **(C6)** the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.
4. To apply **(C3)** ethical and moral standards while carrying out epidemiological researches.

### **PAPER-III- DENTAL PUBLIC HEALTH**

1. To Perform **(A2)** Oral Health Surveys in order to identify all the oral health problems affecting the community and find solutions using multi-disciplinary approach.
2. To Develop **(C6)** appropriate Man power at various levels and their effective utilization.
3. To Perform **(A2)** survey and use appropriate methods to impart Oral Health Education.

### **PAPER-III- ESSAY (DESCRIPTIVE AND ANALYZING TYPE QUESTION)**

1. To Understand **(A1, C2)**, the knowledge of epidemiology to identify causes and plan appropriate preventive and control measures.
2. To Develop **(C6)** the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.