



## **COURSE OUTCOMES-BDS**

### **GENERAL HUMAN ANATOMY INCLUDING EMBRYOLOGY & HISTOLOGY**

1. Osteology, muscles, nerve tissue and vascular supply of the Head, Face and Neck & Thorax
2. Histological basis of the anatomical structures.
3. Growth and development of the anatomical structures including intra uterine development
4. Identify the normal anatomical structures including normal variations and their functions
5. Anatomical anomalies
6. Identify the normal histological structures including normal Variations
7. Implement knowledge in clinical practice to deliver effective patient care
8. The student shall exhibit ability to share knowledge with Colleagues.

### **GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY**

1. The student should understand the unique role of each organ and organ system in maintaining health.
2. Should be able to describe the functions of the distinctive cells that comprise each major organ and when appropriate define the role of physiological functional limits
3. The student should learn to recognize and explain the basic concepts that govern each organ and organ system and their integration to maintain homeostasis, as well as some clinical aspects of failure of these systems.
4. The student should learn to identify bodily processes, which enables them to recognize impairments thereof.
5. Structure and Composition of human blood and its metabolism.
6. Energy needs, nutritional balance and malnutrition including energy metabolism, mineral metabolism.
7. Regulation of functions of essential organs like liver, kidney and blood sugar level and its regulation.
8. Carry out basic biochemical tests in a laboratory setting.
9. Read and interpret biochemical reports and relate them clinically.
10. Refer the patient to the relevant centers for testing.
11. Respect patient's rights and privileges including patient's right to information and right to seek second opinion.



### **GENERAL PATHOLOGY & MICROBIOLOGY**

1. Describe the role of a pathologist in diagnosis and management of disease
2. Enumerate common definitions and terms used in Pathology
3. Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance
4. Demonstrate and apply basic facts, concepts and theories in the field of Pathology to the practice of dentistry
5. Integrate knowledge from the basic sciences, clinical medicine and dentistry in the study of Pathology
6. Recognize and analyze pathological changes at Macroscopic Level.
7. Recognize and analyze pathological changes at Microscopic Level and explain their observations in terms of disease processes.
8. Demonstrate understanding of the capabilities and limitations of morphological Pathology in its contribution to medicine, dentistry and biological research.
9. Demonstrate ability to consult resource materials outside lectures, laboratory and tutorial classes
10. Seek to update his knowledge to contemporary practices in Pathology as applied to practice of dentistry.
11. Maintain high standard of professional ethics.
12. Educate patient regarding preventive aspects of dental pathologies



## **GENERAL & DENTAL PHARMACOLOGY & THERAPEUTICS**

1. The pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dentistry in particular.
2. The indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason
3. The use of appropriate drugs in disease with consideration to its cost, efficacy, safety for individual and mass therapy needs.
4. Special care in prescribing common and essential drugs in special medical situations such as pregnancy, lactation, old age, renal, hepatic damage and immuno-compromised patients.
5. The rational drug therapy in clinical pharmacology.
6. Indicate the principles underlying the concepts of "Essential drugs.
7. Prescribe drugs for common dental and medical ailments.
8. To appreciate adverse reactions and drug interactions of commonly used drugs.
9. Seek to update his knowledge to contemporary practices in Pharmacology as applied to the practice of dentistry.
10. Observe experiments designed for study of effects of drugs.
11. Critically evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used in dentistry.
12. Follow prescribing rationale as advised by regulatory bodies from time to time.
13. Maintain high standard of professional ethics.

## **DENTAL MATERIALS**

1. The student has knowledge about the use and properties of all dental Materials
2. The student has knowledge about the biocompatibility of dental materials and their clinical applications.
3. The student shall choose, manipulate and use appropriate dental materials in a given clinical scenario and laboratory procedures
4. The student is now able to use dental material without causing injury to the patient and use the material without wastage.
5. The student is now able to adopt ethical principles in all dental Practice
6. The student now has Professional honesty and integrity.



7. The student now delivers treatment irrespective of social status, caste, creed or religion of patient.
8. The student is now willing to share the knowledge and clinical experience with professional colleagues.
9. The student is now willing to adopt new methods and techniques in prosthodontics from time to time based on scientific research which is in the patient's best interest
10. The student is now willing to respect the patient's rights and privileges including patient's right to information and right to seek second opinion.

### **PRE- CLINICAL PROSTHODONTICS**

1. The student now has the knowledge about applied medical subjects related to the field of prosthodontics.
2. Properties and use of various materials used in fabricating complete and removable partial dentures
3. The student has acquired skills pertaining to diagnosis and treatment planning for patients requiring Prosthodontic therapy.
4. The student has acquired skills to carry out various clinical and laboratory procedures to fabricate complete dentures and removable partial dentures
5. The student now uses dental materials judiciously without causing injury to the patient
6. The student is now able to use dental materials without wastage.

### **PRE- CLINICAL CONSERVATIVE DENTISTRY**

1. Students are now able to make Cavity outlines on Plaster Models.
2. Students now understand the usage of Silver Amalgam in Dentistry.
3. Students now understand the importance of Pulp Protection in Restorative Dentistry.
4. Students now understand the importance of Pulp- Dentin Complex in Restorative Dentistry.
5. Students now understand the importance of Proper Position for both Patients and Doctors in Restorative Dentistry.
6. Students are able to prepare and restore all categories of teeth on the Plaster Models.
7. Students are able to prepare and restore all categories of cavity on Extracted Teeth.
8. Students are able to prepare and restore all categories of cavity on Ivorine Teeth.
9. Students are now able to dispense and manipulate materials for restorative work.
10. Students now are able to plan and execute various indirect restorations.



## GENERAL MEDICINE

1. Has basic knowledge about signs and symptoms of various diseases.
2. Has basic Knowledge about recording a general case history of medical cases.
3. Has basic Knowledge about general investigations like blood pressure recording, inspection, palpation of medical cases.
4. Has basic knowledge about the dental management of medically compromised cases
5. Is able to record a detail case history of medical cases.
6. Is able to identify oral manifestation of medically compromised Cases
7. Is able to record blood pressure and other basic investigation required.
8. Is able to identify sign and symptoms of various diseases.
9. Is willing to apply current knowledge of General medicine in the best interest of patients and community
10. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.

## GENERAL SURGERY

1. Student now has knowledge of General Surgical Principles pertaining to Acute & Chronic Infections
2. Student now has knowledge of General Surgical Principles pertaining to Inflammation.
3. Student now has knowledge of General Surgical Principles pertaining to wound Healing.
4. Student now has knowledge of General Surgical Principles pertaining to Blood, Blood transfusion and management of blood loss.
5. Student now has knowledge of General Surgical Principles pertaining to Cysts & Benign & Malignant Tumors.
6. Student now has knowledge of General Surgical Principles pertaining to trauma.
7. Student now has knowledge of General Surgical Principles pertaining to Developmental Anomalies
8. Student now has knowledge of General Surgical Principles pertaining to Nerve Injuries and Management.
9. Student is able to demonstrate and apply principles of Suturing.
10. The student is now able to diagnose & do basic management of patient with surgical problem.
11. The student is now able to develop good rapport with patient & Relatives
12. The student is now able to inform bad news to patient's relatives.



## PERIODONTICS

### **Knowledge:**

- To have adequate knowledge and understanding of the etiology, pathophysiology, diagnosis & treatment planning of various periodontal problems.
- To have understood the periodontal surgical principles like pre and post-surgical management of periodontal diseases.
- Essential knowledge of personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of infectious disease

### **Skills:**

- To obtain proper clinical history, examination of the patient, perform diagnostic procedures and order essential laboratory tests and interpret them and to arrive at a provisional diagnosis about the periodontal condition.
- To perform with competence various periodontal nonsurgical procedures. To treat non surgically the various periodontal diseases.

### **Attitude:**

- Periodontal surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Respect patient right and privileges, including patients right to information and right to seek a second opinion
- Develop attitude to seek opinion from an allied medical and dental specialist as and when required.

### **Communicative Skills and Ability:**

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular periodontal problem and obtain a true Informed consent from them for the most appropriate treatment available at that point of time.
- Develop the ability to communicate with professional colleagues.
- Develop ability to teach undergraduates, present seminars and develop leadership skills



## ORAL MEDICINE AND RADIOLOGY

### **Knowledge:**

- To have adequate knowledge and understanding of the aetiology, pathophysiology, diagnosis & treatment planning of various oral mucosal diseases.
- To have understood the principles of various radiographic techniques in oral and maxillofacial region.
- Essential knowledge of personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of infectious disease

### **Skills:**

- To obtain proper clinical history, examination of the patient, arrive at a provisional diagnosis; perform diagnostic procedures including radiographs, interpret them and devise the treatment plan.
- To perform with competence various intraoral radiographs and interpret them.

### **Attitude:**

- Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Respect patient right and privileges, including patients right to information and right to seek a second opinion.

## PUBLIC HEALTH DENTISTRY

### **Knowledge:**

- To have adequate knowledge and understand the basic principles of epidemiology, environmental care, health education and public health administration at community level.
- Apply 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.
- To have minimum knowledge about how to conduct research and Oral Health Surveys in order to identify all the oral health problems affecting the community and find solutions using multi-disciplinary approach.



### Skills:

- Take case history, conduct clinical examination, indices recording to arrive at diagnosis and treatment planning.
- Plan appropriate Community Oral Health Program, conduct the program and evaluate, at the community level.
- To perform hands on procedure – pit and fissure sealants & topical fluoride application.

### Values:

- Adopt ethical principles in all aspects of Community Oral Health Activities.
- Develop communication skills, in particular to explain the causes and prevention of oral diseases to the patient.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

## ORTHODONTICS

### Knowledge:

- Adequate knowledge of the objectives and scope of Orthodontics and Dentofacial Orthopaedics.
- Adequate knowledge of the prenatal and postnatal growth and development of face, development of normal occlusion, cognitive and emotional development and functional development.
- Adequate knowledge of terminology and classification of malocclusion, etiology of malocclusion and diagnostic aids.
- Adequate clinical experience required for diagnosis of all types of malocclusion and ideal timing of treatment for each type of malocclusion.

### Skills:

- Able to do preclinical wire bending exercises for fabrication of removable appliances.
- Able to examine, record and diagnose various common orthodontic problems encountered in general dental practice.
- Acquire skill to take very good quality impressions of the dental arches.
- Able to make the patients aware of orthodontic problems and counsel them for undergoing treatment at the right time.





## Attitudes:

- Willing to apply current knowledge of orthodontics in the best interest of the patients and the community.
- Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- Empathetic to the patients and communicate well.
- Seek to improve orthodontic awareness throughout the community.

## PEDODONTICS

### Knowledge:

- To have adequate knowledge and understanding of the scientific and systematic procedure of history taking and examination of Orofacial region to arrive at proper diagnosis and management
- To have understood the morphology of primary teeth and basic differences in the principles of cavity preparation in primary and permanent teeth
- To have essential knowledge of the preventive (oral prophylaxis, topical fluoride application) and therapeutic measures (restoration of carious teeth, extraction of primary teeth) in caries management

### Skills:

- To communicate and manage child patient
- To obtain proper clinical history, examination of the patient, perform diagnostic procedures and interpret them to arrive at a provisional diagnosis
- To prepare various cavity designs on primary and permanent teeth and restore them using different restorative materials.
- To extract primary teeth



### Attitude:

- To deliver optimum treatment to pediatric patients with tender loving care irrespective of the social status, caste, creed or religion of the patient
- Willing to share the knowledge and clinical experience with professional colleagues
- Respect patient rights and privileges, including patients/ parents right to information, obtaining consent from parents for each procedure and right to seek a second opinion
- Develop attitude to seek opinion from an allied medical and dental specialists as and when required.

### Communicative Skills and Ability:

- Develop adequate communication skills to manage child patient, explaining various treatment options to parents and obtain a true informed consent from them for the most appropriate treatment available at that point of time
- Develop the ability to communicate with professional colleagues
- Develop ability to present seminars and develop leadership skills.

## PROSTHODONTICS

### Knowledge:

The candidate should possess knowledge applied basic and systematic medical sciences.

- On human anatomy, embryology, histology, applied in general and particular to head and neck, Physiology & Biochemistry, Pathology and microbiology, Health and diseases of various systems of the body (systemic) principles in surgery and medicine, Pharmacology.
- Ability to diagnose and planned treatment for patients requiring a Prosthodontic therapy
- Ability to read and interpret a radiograph and other investigations for the purpose of diagnoses treatment plan
- Tooth and tooth surface restorations, complete denture prosthodontics, removable partial dentures Prosthodontics, fixed prosthodontics and maxillofacial Prosthodontics.
- Ability to diagnose failed restoration and provide Prosthodontic therapy and after care.
- General health conditions and emergency as related to prosthodontics treatment,



- Identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.
- Should have a sound knowledge for the application of pharmacology. Effects drugs on oral tissue and systems of a body and for medically compromised.

### **Skills:**

- The candidate should be able to examine the patients requiring Prosthodontic therapy, investigate the patient systemically, analyze the investigation results, radiography, diagnose the ailment, plan a treatment, communicate it with the patient and execute it.
- The candidate should be able to restore the lost functions of the stomatognathic system namely speech, mastication etc. to provide a quality health care
- Identify target diseases and awareness amongst the population for Prosthodontic therapy.
- Perform clinical procedure with understanding of biomaterials, tissue conditions related to prosthesis and have competent dexterity and skill for performing clinical and laboratory procedures in fixed, removable and maxillofacial Prosthodontics.

### **Attitudes:**

- Adopt ethical principles in all Prosthodontic practice. Professional honesty and integrity are to be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient.
- Willing to adopt new methods and techniques in prosthodontics from time to time based on scientific research, which is in patient's best interest.

### **Communication Abilities:**

- Develop communication skills, in particular, to explain treatment option available in management.
- Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patient. He should be able to guide and counsel the patient with regard to various treatment modalities available.



## CONSERVATIVE DENTISTRY & ENDODONTICS

### **Knowledge:**

- To have adequate knowledge of understanding and interpreting etiology, pathophysiology, diagnosis and treatment planning of dental caries, diseases of dental pulp and its sequelae.
- Essential knowledge about composition and properties of restorative materials.
- Understand the fundamentals of tooth preparation for amalgam, composite, GIC, etc.
- Essential knowledge about rationale, instrument and technique of endodontic treatment
- Understand the principles of aesthetic dental procedures.

### **Skills:**

- Perform diagnostic procedure of all types of carious lesions
- Demonstrate appropriate Isolation techniques
- Competent to perform class I and class II cavities and their restoration with amalgam.
- Manage Hypersensitive teeth & Cervical lesions
- Diagnose and appropriately treat pulpally involved teeth (pulp capping procedures)
- Competent to carryout small composite restorations
- Able to perform Root canal Treatment on Anterior teeth

### **Attitude:**

- Competent in control of pain and anxiety during dental treatment
- Have empathy for patient
- Maintain high standards of professional ethics and conduct
- Knowledge about asepsis, disinfection and sterilization of instruments and clinical area with personal care

### **Communicative Skills and Ability:**

- Develop adequate communication skills to manage patient, explaining various treatment options for the most appropriate treatment available at that point of time
- Develop the ability to communicate with professional colleagues



## ORAL AND MAXILLOFACIAL SURGERY

### **Knowledge:**

- To have adequate knowledge and understanding of etiology, pathophysiology, diagnosis and treatment planning of various surgical problems.
- To have understood surgical principle like pre and post-surgical management of minor surgical procedures.
- Essential knowledge of personal hygiene and infection control, prevention of cross infection and waste disposal of hospital waste keeping in view the high prevalence of infectious disease.

### **Skills:**

- To obtain proper clinical history, examination of the patient, perform diagnostic procedure and advise essential laboratory test and interpret them to arrive at a provisional diagnosis about the pathologic condition.
- To perform with competence various minor surgical procedure (exodontia, alveoloplasty etc.)

### **Attitude:**

- Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Respect patient's right and privileges including patient's right to information and right to seek a second opinion.
- Develop attitude to seek opinion from an allied medical and dental specialist.

### **Communication skill and abilities:**

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular surgical problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time.



- Develop the ability to communicate with professional colleagues.
- Develop ability to teach undergraduates, present seminars and develop leadership skills.

## ORAL PATHOLOGY AND MICROBIOLOGY

### Knowledge

- To have understood the fundamentals of the tooth development, physiology, Temporomandibular joint and occlusion, detailed morphology of deciduous and permanent teeth.
- To have adequate knowledge and understanding of aetiology, pathogenesis, histopathology, laboratory tests and diagnosis.
- Essential knowledge of personal hygiene and safe disposal of laboratory wastes.

### Skills

- To develop skills to carve deciduous and permanent teeth.
- To interpret slides and arrive at the proper diagnosis.
- To estimate age of individual based on the dentitions for forensic studies. Attitude
- To develop an approach towards the diagnosis of Oral and maxillofacial lesions along with general dentistry.
- To develop an interest towards research activities
- Willingness to share knowledge and clinical experience with professional colleagues.
- Develop attitude to seek opinion from an allied medical and dental specialists as and when required.
- Respect patient right and privileges, including patients right to information and right to seek a second opinion.

### Communicative skills and Ability

- Develop adequate communication skills particularly with the patients.
- Develop the ability to communicate with professional colleagues.
- Develop ability to present seminars and leadership skills.



## MDS COURSE OUTCOMES

### PERIODONTICS

#### **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 estrogenic 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 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



## Skill:

- Take a proper clinical history, thorough examination 01 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 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 patients' rights and privileges, including patients right to information and right to seek a second opinion.

## ORAL MEDICINE AND RADIOLOGY

### Knowledge:

Theoretical, Clinical and practical knowledge of all mucosal lesions, diagnostic procedures pertaining to them and latest information of imaging modules.

### Skills:

- Diagnostic skill in recognition of oral lesions and their management
- Research skills in handling scientific problems pertaining to oral treatment
- Clinical and Didactic skills in encouraging younger doctors to attain learning objectives





## Attitudes:

The positive mental attitude and the persistence of continued learning need to be inculcated

## PUBLIC HEALTH DENTISTRY

### Knowledge:

- Apply 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.
- Identify 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.
- Ability to conduct Oral Health Surveys in order to identify all the oral health problems affecting the community and find solutions using multi-disciplinary approach ability to act as a consultant in community Oral Health, teach, guide and take part in research (both basic and clinical), present and publish the outcome at various scientific Conferences and journals, both national and international level skills.

### Skills:

- Take history, conduct clinical examination including all diagnostic procedures 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. Plan and perform all necessary treatment, prevention and promotion of Oral health at individual and community level.
- Plan appropriate Community Oral Health Program, conduct the program and evaluate, at the community level.
- Ability to make use of knowledge of epidemiology to identify causes and appropriate preventive and control measures.
- Develop appropriate person power at various levels and the effective utilization.
- Conduct survey and use appropriate methods to impart Oral Health Education.
- Develop ways of helping the community towards easy payment plan, and followed by evaluation for their oral health care needs.



- Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.

### Values:

- Adopt ethical principles in all aspects of Community Oral Health Activities.
- To apply ethical and moral standards while carrying out epidemiological researches.
- Develop communication skills, in particular to explain the causes and prevention of oral diseases to the patient.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed and promote team work approach.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

## ORTHODONTICS

### Knowledge:

- The dynamic interaction of biologic processes and mechanical forces acting on the stomatognathic system during orthodontic treatment.
- The aetiology, pathophysiology, diagnosis and treatment planning of various common Orthodontic problems.
- Various treatment modalities in Orthodontics preventive interceptive and corrective.
- Basic sciences relevant to the practice of Orthodontics.
- Interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro - facial deformities.
- Factors affecting the long-range stability of orthodontic correction and their management.
- Personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste, keeping in view the high prevalence of Hepatitis and HIV and other highly contagious diseases.



## Skills:

- To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures, and interpret them and arrive at a reasonable diagnosis about the Dentofacial deformities.
- To be competent to fabricate and manage the most appropriate appliance - intra or extra oral, removable or fixed, mechanical or functional, and active or passive - for the treatment of any orthodontic problem to be treated singly or as a part of multidisciplinary treatment of Orofacial deformities.

## Attitude:

- Develop an attitude to adopt ethical principles in all aspects of Orthodontic practice.
- Professional honesty and integrity are to be fostered
- Treatment care is to be delivered irrespective of the social Status, cast, creed or colleagues
- Willingness to share the knowledge and clinical experience with professional colleagues
- Willingness to adopt, after a critical assessment, new methods and techniques of orthodontic management developed from time to time based on scientific research, which are in the best interest of the patient
- Respect patients' rights and privileges, including patients right to information and right to seek a second The training programme in Orthodontics is to structure and achieve the following four objectives opinion
- Develop attitude to seek opinion from allied medical and dental specialists as and when required.

## Communication skills:

- Develop adequate communication skills particularly with the patients giving them various options available to manage a particular Dentofacial problem and to obtain a true informed consent from them for the most appropriate treatment available at that point of time.
- Develop the ability to communicate with professional colleagues, in Orthodontics or other specialties through various media like correspondence, Internet, e-video, conference, etc. to render the best possible treatment.



## PEDODONTICS

### **Knowledge:**

- To have adequate knowledge of Child psychology and Behavior management techniques
- To have knowledge of the etiology, pathophysiology, diagnosis and treatment planning of various common problems
- Understand the principles of prevention and preventive dentistry right from birth to adolescence
- Various treatment modalities to prevent and intercept malocclusion
- To have knowledge of aberrant oral habits, diagnosis and available habit breaking treatment options

### **Skills:**

- Obtain proper clinical history, methodological examination of the patient, perform essential diagnostic procedures and interpret them, and arrive at a reasonable diagnosis and treat appropriately.
- Be competent to treat dental diseases which are occurring in child patient.
- Manage to repair and the lost/tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.
- Manage the disabled children effectively and effectively, tailored to the needs of individual requirement and conditions.

### **Attitudes**

- Develop an attitude to adopt ethical principles in all aspects of Pedodontic practice.
- Professional honesty and integrity are to be fostered.
- Treatment care is to be delivered irrespective of the social status, cast creed, and religion of the patients.
- Willingness to share the knowledge and clinical experience with professional colleagues.
- Willingness to adopt, after a critical assessment, new methods and techniques of pedodontic management developed from time to time, based on scientific research, which are in the best interest of the child patient.



- Respect child patient's rights and privileges, including child patient's right to information and right to seek a second opinion.
- Develop an attitude to seek opinion from allied dental specialties, as and when required.

### **Communication Skills and Ability:**

- Develop adequate communication skills to manage child patient, explaining various treatment options to parents and obtain a true informed consent from them for the most appropriate treatment available at that point of time
- Develop the ability to communicate with professional colleagues
- Develop ability to teach undergraduates, present seminars and develop leadership skills.

## **PROSTHODONTICS**

### **Knowledge:**

The candidate should possess knowledge applied basic and systematic medical sciences.

- On human anatomy, embryology, histology, applied in general and particular to head and neck, Physiology & Biochemistry, Pathology and microbiology, virology, Health and diseases of various systems of the body (systemic) principles in surgery and medicine, Pharmacology, Nutrition, behavioural Science, Age changes, genetics, Immunology, Congenital defects and syndrome and Anthropology, Bioengineering, Bio-medical and Biological Principle and application Dental material science
- Ability to diagnose and planned treatment for patients requiring a Prosthodontic therapy
- Ability to read and interpret a radiograph and other investigations for the purpose of diagnoses treatment plan
- Tooth and tooth surface restorations, Complete denture prosthodontics, removable partial dentures Prosthodontics, fixed prosthodontics and maxillofacial and Craniofacial Prosthodontics, implants supported Prosthodontics, T.M.J, and occlusion, craniofacial aesthetic, and biomaterials. Craniofacial disorders - problems of psychogenic origin.



- Age changes and Prosthodontic Therapy for aged.
- Ability to diagnose failed restoration and provide Prosthodontic therapy and after care.
- Should have essential knowledge on ethics, laws and Jurisprudence and forensic odontology in Prosthodontics
- General health conditions and emergency as related to prosthodontics treatment,
- Identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.
- Identify cases, which are outside the area of his specialty/ competence and refer them to appropriate specialists.
- Advice regarding case management involving surgical, interim treatment etc.
- Competent specialization in team management of craniofacial design.
- Should attend continuing education Programmes, seminars and conferences related to prosthodontics in thus updating himself.
- Teach and guide his / her team, colleague and other students.
- Should be able to use information technology tools and carry out research basic and clinical, with the aims of publishing his/ her work and presenting hi work at various scientific forum.
- Should have essential knowledge of personal hygiene, infection control, prevent of cross infection and safe disposal of waste, keeping in view the risks of transfer of Hepatitis & HIV.
- Should have an ability to plan to establish Prosthodontic clinic/hospital teach; department and practice management
- Should have a sound knowledge for the application of pharmacology. Effects drugs
- on oral tissue and systems of a body and for medically compromised.

### **Skills:**

- The candidate should be able to examine the patients requiring Prosthodontic therapy, investigate the patient systemically, analyze the investigation results, radiography, diagnose the ailment, plan a treatment, communicate it with the patient and execute it.
- Understand the prevalence and prevention of diseases of craniomandibular system related to Prosthetic dentistry.



- The candidate should be able to restore the lost functions of the stomatognathic system namely speech, mastication etc. to provide a quality health care for craniofacial region
- The candidate should be able to interact with other specialty including a medical specialty for a planned team management of patients for a craniofacial and oral acquired and congenital defects, Temporomandibular joint syndromes, esthetics, Implant supported Prosthetics and problems of Psychogenic origin,
- Should be able to demonstrate the clinical competence necessary to carry out appropriate treatment at higher level of knowledge, training and practice skills currently available in their specialty area.
- Identify target diseases and awareness amongst the population for Prosthodontic therapy.
- Perform clinical and Laboratory procedure with understanding of biomaterials, tissue conditions related to prosthesis and have competent dexterity and skill for performing clinical and laboratory procedures in fixed, removable, implant and maxillofacial TMJ, esthetics Prosthodontics.
- Laboratory technique management based on skills and knowledge of Dental Materials and dental equipment and instruments, management.
- To understand demographic distribution and target diseases of Cranio mandibular region related to Prosthodontic including crown & bridge and implantology.

### **Attitudes:**

- Adopt ethical principles in all Prosthodontic practice. Professional honesty and integrity are to be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Willing to adopt new methods and techniques in prosthodontics from time to time based on scientific research, which is in patient's best interest.
- Respect patient's rights and privileges including patient's right to information and right to seek second opinion.

### **Communication Abilities:**

- Develop communication skills, in particular, to explain treatment option available in management.
- Provide leadership and get the best out of his group in a congenial working atmosphere.



- Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patient. He should be able to guide and counsel the patient with regard to various treatment modalities available.
- Develop the ability to communicate with professional colleagues through various media like Internet, e-mail, videoconference, and etc. to render the best possible treatment.

## CONSERVATIVE DENTISTRY & ENDODONTICS

### **Knowledge:**

- Describe etiology, pathophysiology, periapical diagnosis and management of common restorative situations, endodontic situations that will include contemporary management of dental caries, management of trauma and pulpal pathosis including periodontal situations.
- Demonstrate understanding of basic sciences as relevant to conservative / restorative dentistry and Endodontics.
- Identify social, economic, environmental and emotional determinants in a given case or community and take them into account for planning and execution at individual and community level.
- Ability to master differential diagnosis and recognize conditions that may require multi disciplinary approach or a clinical situation outside the realm of the specialty, which he or she should be able to recognize and refer to appropriate specialist.
- Update himself by self-study and by attended basic and advanced courses, conferences, seminars, and workshops in the specialty of Conservative Dentistry- Endodontics-Dental Materials and Restorative Dentistry.
- Ability to teach, guide, colleagues and other students. Use information technology tools and carry out research both basic and clinical with the aim of his publishing his work and presenting the same at scientific platform

### **Skills:**

- Take proper chair side history, exam the patient and perform medical and dental diagnostic procedures and order as well as perform relevant tests and interpret to them to come to a reasonable diagnosis about the dental condition in general and Conservative Dentistry - Endodontics in particular. And undertake complete patient monitoring





including preoperative as well as post-operative care of the patient.

- Perform all levels of restorative work and surgical and non-surgical Endodontics including endodontic endosseous implants, as well as endodontic-periodontal surgical procedures as part of multidisciplinary approach to clinical condition.
- Provide basic lifesaving support in emergency situations.
- Manage acute pulpal and pulpo-periodontal situations.
- Have a thorough knowledge of infection control measures in the dental clinical environment and laboratories.

### **Human Values, Ethical Practice and Communication Abilities:**

- Adopt ethical principles in all aspects of restorative and contemporary Endodontics including non-surgical and surgical Endodontics.
- Professional honesty and integrity should be the top priority.
- Dental care has to be provided regardless of social status, caste, creed or religion of the patient.
- Develop communication skills- in particular to explain various options available management and to obtain a true informed consent from the patient.
- Apply high moral and ethical standards while carrying on human or animal research. He /She shall not carry out any heroic procedures and must know his limitations in performing all aspects of restorative dentistry including Endodontics. Ask for help from colleagues or seniors when required without hesitation or Respect patient's rights and privileges including patient's right to information.

### **ORAL AND MAXILLOFACIAL SURGERY**

**Objectives:** The training program in Oral and Maxillofacial Surgery is structured to achieve the following four objectives-

- Knowledge
- Skills
- Attitude
- Communicative skills and ability



## Knowledge:

- To have acquired adequate knowledge and understanding of the etiology, patho physiology and diagnosis, treatment planning of various common oral and Maxillofacial surgical problems both minor and major in nature.
- To have understood the general surgical principles like pre and post-surgical management, particularly evaluation, post-surgical care, fluid and electrolyte management, blood transfusion and post-surgical pain management.
- Understanding of basic sciences relevant to practice or oral and maxillofacial surgery.
- Able to identify social, cultural, economic, genetic and environmental factors and their relevance to disease process management in the oral and Maxillofacial region.
- Essential knowledge of personal hygiene and infection control, prevention c cross infection and safe disposal of hospital waste keeping in view the high prevalence of hepatitis and HIV.

## Skill

- To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures and order relevant laboratory tests and interpn them and to arrive at a reasonable diagnosis about the surgical condition.
- To perform with competence minor oral surgical procedures and common maxillofacial surgery. To treat both surgically and medically (or by other means of the oral and Maxillofacial and the related area).
- Capable of providing care for maxillofacial surgery patients.

## Attitude:

- Develop attitude to adopt ethical principles in all aspect of surgical practice, professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Wiling to adopt new and techniques of surgical management developed from time to time based on scientific research which are in the best interest of the patient
- Respect patient right and privileges, including patients right to information and right to seek a second opinion.



- Develop attitude to seek opinion from an allied medical and dental specialists as and when required.

### **Communication skills:**

Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular surgical problem and obtain a true informed consent from them for the most appropriate treatment available.

## **ORAL PATHOLOGY AND MICROBIOLOGY**

### **Knowledge:**

- To train a post graduate dental surgeon so as to ensure higher competence in both general and special pathology dealing with the nature of oral diseases, their causes, processes and effects.
- An oral pathologist is expected to perform routine histopathological evaluation of specimens relating to oral and perioral tissues, to carry out routine diagnostic procedures including hematological, cytological, microbiological, Immunological and ultra-structural investigations.
- He/she is expected to have an understanding of current research methodology, collection and interpretation of data, ability to carry out research projects on clinical and or epidemiological aspects, a working knowledge on current databases, automated data retrieval systems, referencing and skill in writing scientific papers.
- He/she is expected to present scientific data pertaining to the field, in conferences both as poster and verbal presentations and to take part in group discussions

### **Skills**

- To develop skills to carve deciduous and permanent teeth.
- To interpret slides and arrive at the proper diagnosis.
- To estimate age of individual based on the dentitions for forensic studies.
- To develop an approach towards the diagnosis of Oral and maxillofacial lesions along with general dentistry.
- To develop an interest towards research activities
- Willingness to share knowledge and clinical experience with professional colleagues.
- Develop attitude to seek opinion from an allied medical and dental specialist as and when



required.

- Respect patient right and privileges, including patients right to information and right to seek a second opinion.

### **Ability:**

- Apply the basic knowledge of both general and oral pathology in dealing with the nature of oral diseases, their causes, processes and effects.
- Perform routine histopathological evaluation of specimens relating to oral and perioral tissues, including principles of histochemistry, Immunochemistry, applied and theoretical biochemical basis of histochemistry.
- Plan and administer the routine diagnostic procedures including hematological, cytological, microbiological, Immunological and ultrastructural investigations.
- Demonstrate the current research methodology, collection and interpretation of data, the ability to carry out research projects on clinical and or epidemiological aspects. To Write scientific papers and Update knowledge on current databases, automated data retrieval systems and referencing.
- Demonstrate the scientific data pertaining to the field and present it in conferences both as poster and verbal presentations and take part in group discussions.
- Recognize the pathology of oral tissues as well as the relation of local pathologic and clinical findings to systemic conditions.
- Apply basic oral microbiology and their relationship to various branches of dentistry affecting hard and soft tissues. Describe the basics in Forensic Odontology and ability to apply it in medicolegal issues.
- Demonstrate and practice integrity, responsibility, respect and selflessness.
- Examine and interpret gross tissue specimens.