

PROGRAM SPECIFIC LEARNING OBJECTIVES

FOR UNDER GRADUATES

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PROGRAM SPECIFIC LEARNING OBJECTIVES

FOR POST GRADUATES

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PROGRAMME SPECIFIC LEARNING OUTCOMES

At the end of Undergraduate course, the student will be prepared with the following attributes

ORAL MEDICINE AND RADIOLOGY

The following are the programme specific learning outcomes for the 2 year Undergraduate programme in the department.

The student should be able to

- To carry out clinical examination independently and arrive at a specific diagnosis.
- To identify the clinical symptoms and signs and diagnose the most common oral conditions and diseases.
- To identify the oral manifestations of systemic diseases.
- Dental management of medically related disorders affecting the oral and maxillofacial region.
- To handle medical emergencies on a dental chair.
- To carry out various chair side investigative procedures for oro mucosal lesions.
- To know and understand the basic concepts in Radiology.
- To know and efficiently manage about the protective measures of radiation for the patient as well as the operator.
- To efficiently take intra oral radiographs after understanding the techniques of intra oral radiographs.
- To efficiently process intra oral radiographs after understanding the various methods of processing of an X-ray film.





• To understand the principles of radiographic interpretation and independently interpret radiographs and arrive at radiographic diagnosis.

- To efficiently perform digital orthopantomography.
- To also know about the specialised imaging modalities.
- To effectively plan and formulate the treatment plan in a systematic way.

ORTHODONTICS AND DENTOFACIAL ORTHODONTICS

The following are course outcomes in teaching program in the 2 year Undergraduate programme in the Department of Orthodontics and Dentofacial Orthodontics. The student should be able to

- Define Orthodontics and their basic principles
- Understood the concepts of growth and development of arches, occlusion and associated craniofacial structures
- Classify and explain different malocclusions
- Explain different types of dental and skeletal malocclusions with their associated etiological factors
- Define, classify and explain different types of anchorage system used in Orthodontics
- Types of tooth movements, biomechanics and tissue reactions associated with it.
- To make upper and lower impressions, prepare study models and perform model analysis
- Identification of landmarks, analyse and interpret the radiographs for diagnosis and treatment plan
- Describe various laboratory procedures and various materials used in fabrication of Orthodontic appliances







- Know the etiology, various schools of retention and theories in retention and relapse
- Fabrication of removable appliances and retainers in Orthodontics
- Recognize and refer complex and severe Orthodontic cases to a specialist and for higher level care.

ORAL AND MAXILLOFACIAL SURGERY

The following are the course outcomes for the two-year undergraduate program in the Department of Oral and Maxillofacial Surgery. The student should be able to:

- Acquireknowledgeregardingthescientificandsurgical principlesrequiredtoprovide
 Oral Maxillofacial surgical care and prevention of crossInfection
- Apply the knowledge gained from basic science and clinical subjects (anatomy, physiology, biochemistry, pathology, microbiology, pharmacology, general medicine and general surgery) in-the diagnosis and management of oral surgical problems.
- Record case history, perform clinical examination, order essential investigations and arrive at a final diagnosis.
- Plan the treatment and management of oral and maxillofacial problems.
- Competently diagnose and treat medically compromised patients with minor oral surgical problems
- Manage medical emergencies if any during the procedures.
- Performcompetentlyextractionoftooth/teethunderlocalanaesthesiaandproperfollowupcare.
- Manage of intra/post-operative complications
- Ability to carry out simple minor oral surgical procedures such as alveoloplasty, frenectomy, incision and drainage, dental wiring and biopsy.





PEDIATRIC AND PREVENTIVE DENTISTRY

The following are the course outcome of the two- year undergraduate program in the department of Pediatric and Preventive Dentistry. By the end of the two- year program the student should be able to:

- Understand the principles and practices of Pediatric and Preventive Dentistry, from birth through adolescence including those with special healthcare needs.
- Record detailed case history, conduct clinical examination of the paediatric patient along with the diagnostic procedure and reach at the diagnosis.
- Plan a comprehensive treatment plan and treat appropriately.
- Understand the concept of growth and development and to clinically correlate with the developmental milestones of the child.
- Understand the concept of psychological development and behavioural changes in the child, and to use appropriate non- pharmacological behaviour management techniques on them.
- To relate to the current concept of dental caries in paediatric patients and correlate the same in the clinical situation along with the early preventive and interceptive management techniques.
- To have the knowledge of restorative dentistry along with various commercially available restorative materials like Glass lonomer cement (Type1, 2 &9), composite resins and full coverage restorations like Stainless steel crowns, and other aesthetic crowns. To perform restorative treatment on the paediatric patient.



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- To have the knowledge of different stages of development of occlusion and the use of appropriate appliance in prevention and interceptive of certain malocclusions and oral habits.
- To identify and differentiate the morphology of primary and permanent teeth.
- To have the knowledge of pulp therapies done on Primary and Permanent teeth along with the regenerative dentistry.
- To have the knowledge of difference in morphology and pathology of gingiva and to perform Oral prophylaxis along with topical fluoride application. To render oral hygiene instructions to the patients.
- To administer local anaesthesia along with extraction of the Primary teeth.
- Develop and render oral health education and participate in school dental health programs.

PERIODONTICS

The following are the course outcomes in the subject of periodontics for a BDS student as distributed under the three learning domains

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 o 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 specialists as and when required.

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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



PROSTHODONTICS

The following are the course outcome of the two- year undergraduate program in the department of Prosthodontics. The students should be able to know

- Able to understand and use various dental materials
- Competent to carry out treatment of conventional complete and partial removable dentures and fabricate fixed partial dentures
- Able to carry out treatment of routine Prosthodontic procedures.
- Familiar with the concept of Osseointegration and the value of implantsupported Prosthodontic procedures
- To train the dental graduates so as to ensure higher level of competence in both general and specialty areas of Prosthodontics and prepare candidates with teaching, research and clinical abilities including prevention and after care in Prosthodontics – removable dental prosthodontics, fixed dental prosthodontics (Crown &Bridge), implantology, maxillofacial prosthodontics and esthetic dentistry.

GENERAL OBJECTIVES OF THE COURSE:



Training program for the dental graduates in Prosthetic dentistry– removable dental prosthodontics, fixed dental prosthodontics (Crown & Bridge), implantology, maxillofacial prosthodontics and esthetic dentistry and Crown & Bridge including Implantology is structured to achieve knowledge and skill in theoretical and clinical laboratory, attitude, communicative skills and ability to perform research with a good understanding of social, cultural, educational and environmental background of the society. To have adequate acquired knowledge and understanding of applied basic and systemic medical sciences, both in general and in particularly of head and neck region.

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DENTAL ANATOMY AND DENTAL HISTOLOGY

At the end of undergraduate course, the student will be equipped with the following attributes-

Objectives-

- The student be able to identify different teeth in different dentition
- Demonstrate knowledge about development of maxilla, mandible, palate, tongue lips and to state the congenital defects during their formation.
- Appreciate the morphological features of both sets of dentitioni.e primary and permanent teeth, knowledge about its chronology, sequence of eruption, occlusion and various morphology.
- To outline the salient features of human dentition
- To differentiate between normal and pathological state of oral structures.
- To describe both microscopically and macroscopically the structure and functions of oral facial tissues through laboratory and clinical exercises.

Skills-

- CONTRACTOR OF THE STREET
- To identify and describe any tooth by its morphology
- To be able to remember the chronology of both deciduous and permanent teeth
- To brief about physiological process of tooth development
- To describe functions of each anatomical part of teeth structures and its Clinical significance
- To carve human teeth morphology in wax blocks
- To describe the types of dentition, dental formula and tooth numbering system



• To mention the pattern of tooth eruption and its clinical significance.

ORAL PATHOLOGY AND MICROBIOLOGY-

Objectives-

- To know the various developmental defects in relation to soft and hard tissues of oral cavity
- To describe in detail about various potentially malignant disorders, benign and malignant neoplasms of head and neck region.
- To know in detail the uses of oral histopathology, Biopsy, FNAC, Cytological examinations, frozen sections, immunohistochemistry.
- To know the oral manifestations of systemic, metabolic disorders, bacterial, fungal and viral infections
- To know the role of dentist in the field of forensic odontology
- To know various form of salivary gland tumours, vesiculobullous lesions affecting oral cavity.
- To know the procedure of tissue processing and staining



Skills-

- To be able to identify various development defect tooth specimens and mentions its morphological features
- Writing oral histopathology and requisition form
- Interpretation of pathological reports and data
- Describe various pathological processes that involved in oral cavity and manifestations of common diseases, their diagnosis.

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Handling and maintenance of microscope



- Preservation of surgical specimen for histopathology report
- Discuss teeth anomalies, polymorphisms with the help of dental casts

DEPARTMENT OF CONSERVATIVE DENTISTRY AND ENDODONTICS

The following are the course outcomes for the two-year undergraduate program in the Department of Conservative Dentistry and Endodontics. The student should be able to:

- Diagnosis and treatment planning: Develop expertise in diagnosing and treatment planning for various dental conditions including caries, tooth fractures, and pulpal diseases. Understand the importance of thorough clinical examinations, radiographic interpretation, and patient history assessment.
- **Caries management:** Deep understanding of caries and its management. Learn about preventive measures, non-surgical interventions (such as fluoride application and sealants) and restorative techniques for carious lesions of different severities.
- **Dental materials:** Knowledge about different restorative materials used in conservative dentistry such as amalgam, composite resin and glass ionomer their indication properties, manipulation techniques and clinical considerations.



Tooth preparation: Tooth preparation for various restorative treatments, including cavity preparation for amalgam and composite restoration.

Direct and indirect restorations: Direct restoration such as composite resin filling and indirect restoration including inlays, onlays



and crowns. Understand the principles of tooth preparation, material selection and cementation technique.

- Endodontics: Expertise in endodontic procedures including root canal treatment. Know about pulp anatomy, diagnosis of pulpal and periapical diseases, access cavity preparation, instrumentation, obturation techniques, and management of complication.
- **Pulpal and periapical diseases:** Understand the etiology, diagnosis and management of pulpal and periapical diseases such as irreversible pulpitis, pulpal necrosis, apical periodontitis and periapical abscess. Be familiar with different treatment options including vital pulp therapies and root canal treatments.
- Endodontics retreatment and surgical endodontics: Gain knowledge about retreatment of failed root canal treatments and surgical endodontic.
- **Traumatic dental injuries:** Learn about the diagnosis and management of traumatic dental injuries, including crown fracture, root fracture and luxation injuries.
- Infection control and sterilization: Develop strong foundation in infection control protocols including proper sterilization techniques and disinfection.

GENERAL SURGERY



The following are the programme specific learning outcomes for the 1 year Undergraduate programme in the department. The student should be able to

To acquaint the student with various diseases, which may require surgical expertise





- To train the student to analyse the history and be able to do a thorough physical examination of the patient.
- To understand, diagnose and manage the common surgical problems.
- To understand the diseases as related to head and neck region are to be given due importance, at the same time other relevant surgical problems are also to be addressed.
- To follow the principles of sterilization, asepsis and disinfection protocol.
- At the end of one year of study the student should have a good theoretical knowledge of various ailments, and be practically trained to differentiate benign and malignant diseases and be able to decide which patient requires further evaluation.
- Recognise and provide basic life support to patients who require it.

GENERAL MEDICINE

The following are the programme specific learning outcomes for the 1 year Undergraduate programme in the department. The student should be able to

- To record the arterial pulse, blood pressure and be capable of suspecting by sight and superficial examination of the body – diseases of the heart, lungs, kidneys, blood etc.
- Should be capable of handling medical emergencies encountered in dental practice.
- Definitions of signs, symptoms, diagnosis, differential diagnosis treatment & prognosis.
- To know about Infections. Enteric fever, AIDS, herpes simplex, herpes zoster, syphilis diphtheria. Infectious mononucleosis mumps, measles etc.
- To know the importance of various diseases as applicable to dentistry.





- Special precautions/ contraindication of anaesthesia and various dental procedures in different systemic diseases
- To know about the Oral manifestations of systemic diseases.

GENERAL PATHOLOGY

The following are the programme specific learning outcomes for the 1 year Undergraduate programme in the department. The student should be able to

- To apply the scientific study of disease processes, which result in morphological and functional alterations in cells, tissues and organs to the study of pathology and the practice of dentistry.
- Enabling the student to demonstrate and apply basic facts, concepts and theories in the field of Pathology
- To recognize and analyse pathological changes at macroscopically and microscopical levels and explain their observations in terms of disease processes.
- To Integrate knowledge from the basic sciences, clinical medicine and dentistry in the study of Pathology.
- To demonstrate understanding of the capabilities and limitations of morphological Pathology in its contribution to medicine, dentistry and biological research.
- To demonstrate ability to consult resource materials outside lectures, laboratory and tutorial classes.

PHARMACOLOGY



The following are the programme specific learning outcomes for the 1 year Undergraduate programme in the department. The student should be able to

To inculcate rational and scientific basis of therapeutics.



- The student shall be able to describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dentistry in particular.
- To List the indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason.
- Tailor the use of appropriate drugs in disease with consideration to its cost, efficacy, safety for individual and mass therapy needs.
- Indicate 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.
- Integrate the rational drug therapy in clinical pharmacology.
- Indicate the principles underlying the concepts of "Essential drugs".
- Prescribe drugs for common dental and medical ailments.
- To appreciate adverse reactions and drug interactions of commonly used drugs.
- Observe experiments designed for study of effects of drugs.
- Critically evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used in dentistry.
- Practical knowledge of use of drugs in clinical practice will be acquired through integrated teaching with clinical departments.
- General principles of pharmacology; sources and nature of drugs dosage forms; prescription.

PHYSIOLOGY



The following are the programme specific learning outcomes for the 1 year Undergraduate programme in the department. The student should be able to

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- To Explain the normal functioning of all the organ systems and their interactions for well co-ordinated total body function.
- Assess the relative contribution of each organ system towards the maintenance of the milieu interior.
- List the physiological principles underlying the pathogenesis and treatment of disease.
- To Conduct experiments designed for the study of physiological phenomena.
- To Interpret experimental and investigative data
- To distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

DENTAL MATERIALS

The following are the programme specific learning outcomes for the 1-year Undergraduate programme in the department. The student should be able to understand

- **Material Properties:** Understand the physical, chemical and mechanical properties of different dental materials such as ceramics, composites, metals, and polymers. Gain knowledge about how these properties affect their clinical performance and selection for various applications.
- **Restorative Materials:** Have thorough knowledge, indications, properties, manipulation techniques and clinical consideration of restorative materials.
- **Dental Bonding:** Gain knowledge about various bonding techniques, bonding agents, their application in various restorative procedures.
- Dental Impression Material: learn aboutvarious impression materials such as elastomers, alginate, and hydrocolloids. Understand their properties, indications and technique for making accurate dental impression.

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- Biomaterials and Biocompatibility: Learn about biomaterials used in dentistry such as dental implants, bone grafts, and tissue engineered constructs. Understand biocompatibility, osseointegration and factors influencing the success and longevity of dental implants.
- **Dental Material Testing:** Become familiar with different testing methods used to evaluate dental materials. These may include tests for mechanical strength, wear resistance, hardness, adhesion and biocompatibility.
- Dental Material Safety: Be aware of safety considerations related to dental materials, such as toxicity, allergic potential and handling precautions. Understand the relevant regulations and guidelines for material handling, disposal, and patient safety.
- Patient Communication: Develop effective communication skills to educate patients about different dental materials, their benefits and limitations.

HUMAN ANATOMY

The following are the programme specific learning outcomes for the 1 year Undergraduate programme in the department. The student should be able to

- To gain the knowledge and insight into, the functional anatomy of the normal human head and neck, functional histology and an appreciation of the genetic basis of inheritance and disease, and the embryological development of clinically important structures.
- To Know the normal disposition of the structures in the body while clinically examining a patient and while conducting clinical procedures.
- To Know the anatomical basis of disease and injury.



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- To Know the microscopic structure of the various tissues, a pre-requisite for understanding of the disease processes.
- To Know the nervous system to locate the site of lesions according to the sensory and or motor deficits encountered.
- To have an idea about the basis of abnormal development, critical stages of development, effects of teratogens, genetic mutations and environmental hazards.
- Know the sectional anatomy of head neck and brain to read the features in radiographs and pictures taken by modern imaging techniques.
- Know the anatomy of cardio-pulmonary resuscitation.
- To locate various structures of the body and to mark the topography of the living anatomy.



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POST GRADUATE SPECIFIC LEARNING OUTCOMES

ORAL MEDICINE AND RADIOLOGY

OBJECTIVES

At the end of 3 year training programme, the post graduate candidate should possess adequate knowledge of the discipline.

Knowledge

Thorough knowledge of theory, clinical and practical portions of all oro mucosal lesions of both the soft tissue as well as the hard tissue conditions/lesions and skeletal involvement of maxillofacial region, various investigative and diagnostic procedures related to the same and knowledge about the recent advances in maxillofacial imaging.

Skills and attitude

The following skills should be imbibed

- Identification and diagnosis of oral mucosal lesions with radiographic diagnosis and their effective management.
- Didactic Skills in teaching the undergraduates.
- Possess the Research activities and conduct various researches pertaining to oral and maxillofacial disorders.

ATTITUDES

Learning process should be continued with a positive mental attitude.



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ORAL AND MAXILLOFACIAL SURGERY

Objectives:

ThetrainingprograminOralandMaxillofacialSurgeryisstructured toachievethefollowing

FOUR OBJECTIVES:

- Knowledge
- Skills
- Attitude
- Communicative skills andability

Knowledge:

- To have acquired adequate knowledge and understanding of the etiology, pathophysiology and diagnosis, treatment planning of various common oral and Maxillofacial surgical problems both minor and major innature.
- To have understood the general surgical principles like preand post-surgical management, particularly evaluation, post-surgical care, fluid and electrolyte management, blood transfusion and post-surgical pain management.
- Understandingofbasicsciencesrelevanttopractice or oral and maxillofacial surgery.
- Abletoidentifysocial,cultural,economic,geneticandenvironmentalfactorsandtheirrelev ancetodiseaseprocessmanagementintheoralandMaxillofacialregion.
- Essential knowledge of personal hygiene and infection control, prevention ofcross

infectionandsafedisposalofhospitalwastekeepinginviewthehighprevalenceof hepatitis and HIV.

• To obtain proper clinical history, methodical examination of the patient,







performessential diagnostic procedures and order relevant laboratory tests and interpret them andtoarriveatareasonablediagnosisaboutthesurgicalcondition.

- Toperformwithcompetenceminororalsurgicalproceduresandcommonmaxillofacialsur gery. To treat both surgically and medically (or by other means of the oraland Maxillofacial and the relatedarea).
- Capable of providing care for maxillofacial surgerypatients.

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 professionalcolleagues.
- Wiling to adopt new techniques of surgical management developed fromtime to time based on scientific research which are in the best interest of the patient
- Respectpatient'srightandprivileges, includingpatientsrighttoinformation and right to seek a secondopinion.
- Develop attitude to seek opinion from an allied, medical and dental specialists as and whenrequired.

Communication skills:

- Develop adequate communication skills particularly with the patientsgiving them thevariousoptionsavailabletomanageaparticularsurgicalproblemandobtainatrue informedconsentfromthemforthemostappropriatetreatmentavailableatthatpoint oftime
- Develop the ability to communicate with professional colleagues.



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• Develop ability to teachundergraduates.

PEDIATRIC AND PREVENTIVE DENTISTRY

The following are the course outcome of the three- year postgraduate program in the department of Pediatric and Preventive Dentistry. By the end of the three- year program the student should be able to:

- Understand the principle and practices of Pediatric and Preventive dentistry from birth through adolescence and those with special health care needs.
- To understand growth and development of the child and correlate it clinically with the development milestones of development. To identify any deviation in the milestones and intimate the parents or caregivers about the same and seek necessary medical help.
- Create a healthy oral environment that will lead to healthy general health.
- To guide and educate parents about the importance of primary dentition, and explain about the various treatment modalities available including the preventive procedures.

SKILLS



- Recording of proper case history, methodological examination of the child including the diagnostic procedures and arriving at a diagnosis and treating the accordingly.
- Treating most of the dental disorders that occur in the children.
- Practice of appropriate behaviour management in children.
- Perform restorative and pulp therapies in both primary and permanent teeth including regenerative endodontics.
- Management of traumatic injury to primary and permanent teeth



- Diagnosis of developing malocclusion and meticulously plan to prevent or intercept the malocclusion.
- Treatment of children with special health care need under oral sedation, deep sedation or under general anesthesia.
- Surgical treatment of various conditions like mucocele, high frenal attachment etc,.

ATTITUDE

- Follow ethical principles in all aspects of Pediatric dentistry
- Professional honesty and integrity are fostered
- Treatment of the patient to be done irrespective of the socioeconomic status, creed or religion.
- To share the knowledge and clinical experience with fellow colleagues.
- To adopt the newer advances in the various fields of pediatric dentistry
- Respect the child's opinions and rights including the right to information and to seek second opinion.
- Develop an attitude and be open for opinions and seek help if required from the medical and dental specialities.

DEPARTMENT OF PROSTHODONTICS

The following are the course outcome of the three- year postgraduate program in the department of Prosthodontics.

GENERAL OBJECTIVES OF THE COURSE:

• To have adequate acquired knowledge and understanding of applied basic and systemic medical sciences, both in general and in particularly of head and neck region.



• The postgraduates should be able to provide Prosthodontic therapy for patients with competence and working knowledge with understanding of applied medical, behavioural and clinical science, that are beyond the treatment skills of the general BDS graduates and MDS graduates of other specialties,

• To demonstrate evaluative and judgment skills in making appropriate decisions regarding prevention, treatment, after care and referrals to deliver comprehensive care to patients.

KNOWLEDGE:

The candidate should possess knowledge of applied basic and systemic medical sciences.

• On human anatomy, embryology, histology, applied in general and particularly to head and neck, Physiology & Biochemistry, Pathology 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 & syndromes and Anthropology, Bioengineering, Bio-medical & Biological Principles

• The student shall acquire knowledge of various Dental Materials used in the specialty and be able to provide appropriate indication, understand the manipulation characteristics, compare with other materials available, be adept with recent advancements of the same.



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• Students shall acquire knowledge and practice of history taking, Diagnosis, treatment planning, prognosis, record maintenance of oral, craniofacial and systemic region.

• Ability for comprehensive rehabilitation concept with pre prosthetic treatment plan including surgical re-evaluation and prosthodontic treatment planning, impressions, jaw relations, utility of face bows, articulators, selection and positioning of teeth, teeth 43 arrangement for retention, stability, esthetics, phonation, psychological comfort, fit and insertion.

• Instructions for patients in after care and preventive Prosthodontics and management of failed restorations shall be possessed by the students.

• Understanding of all the applied aspects of achieving physical, psychological well-being of the patients for control of diseases and / or treatment related syndromes with the patient satisfaction and restoring function of Cranio mandibular system for a quality life of a patient.

• Ability to diagnose and plan treatment for patients requiring Prosthodontic therapy

• Ability to read and interpret radiographs, and other investigations for the purpose of diagnosis and treatment planning.

 The theoretical knowledge and clinical practice shall include principles involved for support, retention, stability, esthetics, phonation, mastication, occlusion, behavioral, psychological, preventive and social aspects of Prosthodontics science of Oral and Maxillofacial Prosthodontics and Implantology

 Tooth and tooth surface restorations, Complete denture Prosthodontics, removable partial denture Prosthodontics, fixed prosthodontics and maxillofacial



and Craniofacial Prosthodontics, implants and implant supported Prosthodontics, T.M.J. and occlusion, craniofacial esthetics, and biomaterials, craniofacial disorders, problems of psychogenic origin.

• Should have knowledge of age changes, geriatric psychology, nutritional considerations and prosthodontic therapy in the aged population.

• Should have 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.

 Should know general health conditions and emergency as related to prosthodontics treatment like allergy of various materials and first line management of aspiration of prosthesis

• Should identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.

 Should identify cases, which are outside the area of his specialty / competence, refer them to appropriate specialists and perform interdisciplinary case management.

• To advice regarding case management involving surgical and interim treatment

• Should be competent in specialization of team management in craniofacial prosthesis design.



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• To have adequate acquired knowledge, and understanding of applied basic, and systemic medical science knowledge in general and in particular to head and neck regions.

• Should attend continuing education programmes, seminars and conferences related to Prosthodontics, thus updating himself/herself.

• To teach and guide his/her team, colleagues and other students.

• Should be able to use information technology tools and carry out research both in basic and clinical areas, with the aim of publishing his/ her work and presenting his/her work at various scientific forums.

 Should have an essential knowledge of personal hygiene, infection control, prevention of cross infection and safe disposal of waste, keeping in view the risk of transmission of potential communicable and transmissible infections like Hepatitis and HIV.

• Should have an ability to plan and establish Prosthodontics clinic/hospital teaching department and practice management.

• Should have a sound knowledge (of the applications in pharmacology, effects of drugs on oral tissues and systems of body and in medically compromised patients.

SKILLS:

• The candidate should be able to examine the patients requiring Prosthodontic therapy, investigate the patient systemically, analyze the investigation results, radiographs, diagnose the ailment, plan the treatment, communicate it with the patient and execute it.



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• To understand the prevalence and prevention of diseases of craniomandibular system related to prosthetic dentistry.

• The candidate should be able to restore lost functions of stomatognathic system like mastication, speech, appearance and psychological comforts by understanding biological, biomedical, bioengineering principles and systemic conditions of the patients to provide quality health care in the craniofacial regions.

able to demonstrate The candidate should be good interpersonal, communication skills and team approach in interdisciplinary care by interacting with other specialties including medical specialty for planned team management of for craniofacial & oral acquired patients and congenital defects. temporomandibular joint syndromes, esthetics, Implant supported Prosthetics and problems of Psychogenic origins.

• 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 with a patient centered approach.

Should be able to interpret various radiographs like IOPA, OPG, CBCT and CT.
 Should and be able to plan and modify treatment plan based on radiographic findings

 Should be able to critically appraise articles published and understand various components of different types of articles and be able to gather the weight of evidence from the same

• To identify target diseases and create awareness amongst the population regarding Prosthodontic therapy.





• To perform Clinical and Laboratory procedures with a clear understanding of biomaterials, tissue conditions related to prosthesis and have required dexterity & skill for performing clinical and laboratory all procedures in fixed, removable, implant, maxillofacial, TMJ and esthetics Prosthodontics.

• To carry out necessary adjunctive procedures to prepare the patient before prosthesis like tissue preparation and preprosthetic surgery and to prepare the patient before prosthesis / prosthetic procedures

• To understand demographic distribution and target diseases of Cranio mandibular region related to Prosthodontics.

ATTITUDES:

• To adopt ethical principles in Prosthodontic practice, Professional honesty, credibility and integrity are to be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient.

• Should be willing to share the knowledge and clinical experience with professional colleagues.

Should develop an attitude towards quality, excellence, non-compromising in treatment.

• Should be able to self-evaluate, reflect and improve on their own.



• Should pursue research in a goal to contribute significant, relevant and useful information, concept or methodology to the scientific fraternity.

• Should be able to demonstrate evidence-based practice while handling cases

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• Should be willing to adopt new methods and techniques in prosthodontics from time to time based on scientific research, which are in patient's best interest.

• Should respect patient's rights and privileges, including patient's right to information and right to seek second opinion.

COMMUNICATIVE ABILITIES:

• To develop communication skills, in particular and to explain treatment options available in the management.

• To provide leadership and get the best out of his / her 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/She should be able to guide and counsel the patient with regard to various treatment modalities available.

 To develop the ability to communicate with professional colleagues through various media like Internet, e-mails, videoconferences etc. to render the best possible treatment. Should demonstrate good explanatory and demonstrating ability as a teacher in order to facilitate learning among students.



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PERIODONIICS

The following are the course outcome of the three- year postgraduate program in the department of Periodontics

Competency Area	Program Learning Outcomes
Communication and social skills	 Perform a careful and exhaustive clinical examination relevant to periodontology and communicate effectively with patients using advanced technological and communication aids Interpret and communicate knowledge, skills and ideas in delivering periodontal treatment with due consideration to patients' desires and attitudes.
Scientific and clinical Knowledge	 Apply the scientific and clinical knowledge in the decision-making process, clinical reasoning and judgment to develop a comprehensive diagnosis and treatment plan.
Health Promotion	 Support the professional development, preventive strategies, and education for all members of the community
Health care delivery	 To be able to critically appraise and apply evidenced-based knowledge relevant to the safe practice of periodontology. To be able to record full medical and dental history of the patient, and apply legislation

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	related to record-keeping.
•	Provide patient centered care in a professional
	way in accordance to the regulations considering
	ethical principles
•	Manage periodontal patients with different
	degrees of complexity including medically
	compromised and special needs
	patients.Perform non-surgical and surgical
	periodontal therapy for natural dentition and
	dental implants following all principles of
	infection control.
•	Evaluate the results of the treatment and to carry
	out any supportive periodontal treatment.

First year curriculum

KNOWLEDGE

- Basic anatomy of head and neck region
- Basic physiology and biochemistry as relevant to dental practice
- Basics of pharmacology, pathology and microbiology as relevant to dental practice
- Basics of research methodology and biostatistics
- Normal structures of the periodontium- anatomical, clinical and histological features



- Etiology of periodontal diseases
- Immunology and pathogenesis of periodontal diseases
- Epidemiology and classification of periodontal diseases and conditions
- Clinical and histological features of gingival, periodontal and peri-implant diseases and conditions
- Clinical, radiographic and advanced diagnostic methods as applied to periodontology
- Factors affecting prognosis of periodontal diseases
- Blue print of treatment planning for periodontal patient
- Plaque control methods
- Non-surgical and surgical periodontal instruments
- Principles of instrumentation
- Scaling and root planning procedure
- Minor periodontal surgical procedures: Gingivectomy, frenotomy, crown lengthening procedure
- Use of antibiotics in periodontal therapy
- Host modulation therapy
- Periodontal wound healing
- Periodontal dressing



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• Supportive periodontal therapy

SKILLS

- Case-history recording
- Patient examination as relevant for periodontal problems
- Probing methods
- Perform Scaling and root planning
- Perform Splinting
- Minor surgical procedures: gingivoplasty, gingivectomy, frenotomy, frenectomy, crown lengthening

ATTITUDE

- Communication with the patient during history taking
- Educating the patient about significance of oral hygiene
- Convincing the patient for the treatment
- Gentle handling of the patient during clinical examination and treatment

Second year curriculum

KNOWLEDGE

- Case selection and decision making for flap surgery
- Periodontal flap surgery techniques
- Regenerative therapy







- Muco-gingival surgery
- Interdisciplinary approaches
- Implant case selection and treatment planning
- Ridge augmentation procedures

SKILLS

- Perform periodontal flap surgery
- Perform periodontal regenerative procedures
- Perform periodontal plastic surgery procedures
- Management of endo-perio lesions
- Placing of implants in deficient ridges after bone augmentation

Third year curriculum

KNOWLEDGE

- Advanced periodontal surgical methods: microsurgery, Lasers, electrosurgery
- Platelet concentrates
- Stem cell therapy and periodontal tissue engineering
- Maxillary sinus lift procedures

SKILLS

• Perform periodontal microsurgery using loupes



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- Perform periodontal surgeries using laser
- Perform surgical procedures using electrocautery
- Demonstrate making of platelet concentrates
- Perform periodontal regenerative procedures using advanced methods
- Place implants in conjunction to maxillary sinus lift and ridge augmentation procedures

ORTHODONTICS AND DENTOFACIAL ORTHODONTICS

OBJECTIVES

At the end of 3 year training programme, the post graduate candidate should possess adequate knowledge of the discipline

<u>AIM</u>

The post graduates during training in the institution should acquire adequate knowledge, necessary skills and such attitudes which are required for carrying out all the activities appropriate to general and overall Orthodontic practice involving the prevention, diagnosis and treatment of anomalies and malocclusion of the teeth, and diseases of mouth, jaws and associated tissues. The post graduates should also be able to understand the concept of Orthodontics and apply the same for treating the patient.

OBJECTIVES

The objectives are dealt under three headings namely (a) knowledge and understanding (b) skills and (c) attitudes.

a. Knowledge and understanding

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- The post graduates should acquire the following during the period of training. Adequate knowledge of the scientific foundations on which Orthodontics is based on and good understanding of various concepts, methods, principles of biological functions and should be able to evaluate and analyse scientifically different treatment aspects
- Adequate knowledge of growth and development of structures and functions of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general-state of health and also the bearing on physical and social well-being of the patient.
- Adequate knowledge of clinical disciplines and methods, anomalies, lesions and diseases of the teeth, mouth and jaws and preventive, interceptive and corrective aspects of Orthodontics.
- Factors affecting long term stability after Orthodontic correction and their management.

<u>SKILLS</u>



- Able to diagnose and manage various common malocclusions encountered in general dental practice, keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.
- Acquire skill to prevent and manage complications if encountered while carrying out various Orthognathic surgical and other procedures as well.
- Possess skill to carry out required investigative procedures and ability to interpret diagnosis and treatment plan.

<u>ATTITUDE</u>

A graduate should develop during the training period the following attitudes.

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- Willing to apply current knowledge of Orthodontics in the best ٠ 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.
- Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community
- Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
- To help and to participate in the implementation of national health programmes.
- As the duration of orthodontic treatment is long, it is important to inculcate a positive attitude in the student so that he/she develops a good rapport with the patient.

Course outcomes

- Define Orthodontics and their basic principles
- Understood the concepts of growth and development of arches, occlusion and associated craniofacial structures
- Classify and explain different malocclusions
- Explain different types of dental and skeletal malocclusions with their associated etiological factors
- Define, classify and explain different types of anchorage system used in Orthodontics with recent advancements like usage of TAD'S.
- Types of tooth movements, biomechanics and tissue reactions associated with it.

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- To make upper and lower impressions, prepare study models and perform model analysis
- Identification of landmarks, analyse and interpret the radiographs for diagnosis and treatment plan with soft tissue analysis as well.
- Trained to carry out growth modification procedures.
- Has been trained for expanding arches in growing as well as in non growing patients.
- Taught to apply micro implants / TAD'S where ever its necessary for that particular patients.
- Describe various laboratory procedures and various materials used in fabrication of Orthodontic appliances
- Trained in planning and implementing Orthognathic surgeries
- Know the etiology, various schools of retention and theories in retention and relapse
- Fabrication of removable appliances and retainers in Orthodontics
- Trained with recent advances in fixed appliance procedures, biomechanics, equipment and techniques.



ORAL PATHOLOGY AND MICROBIOLOGY-

At the end of post graduate course, the student will be equipped with the following attributes-

Objectives-

• To train a post graduate student so as to ensure higher competence in both general and special pathology dealing with the nature of oral diseases, its

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pathogenesis, clinical presentation, histopathological features and treatment.

- To be able to present seminars on important topics, journal clubs and relevant case presentations
- Expected to present papers/posters in national conferences and PG conventions as well as take part in panel /group discussions
- Should be able to prepare H & E stains as well as special stains for special cases if required to reach the diagnosis
- To have sound knowledge on various form of microscopes like compound, polarizing, fluorescent, phase contrast, dark field, stereomicroscope designed for specific purposes.

Skills-

- 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, working knowledge on current databases, skill in writing scientific papers.
- Should be able to generate histopathological report and diagnosis.
- As 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 haematological, cytological, microbiological, immunological and ultrastructural investigations.
- Should be able to use special stains when required to conclude the histopathologic diagnosis.
- Should be skilled enough to present papers and posters in national conference and PG Convention.



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DEPARTMENT OF CONSERVATIVE DENTISTRY AND ENDODONTICS

At the end of 3 year training programme, the post graduate candidate should possess adequate knowledge of the discipline.

The following objectives are laid out to achieve the goals of the course. These are to be achieved by the time the candidate completes the course. These objectives may be considered under the following subtitles

<u>Knowledge</u>

- Advanced endodontic techniques: Knowledge in advanced endodontic technique such as regenerative endodontic technique, vital pulp therapy, apexification, apexogenesis and management of complex root canal anatomy.
- 2. Describe the etiology, pathophysiology, periapical diagnosis and management of common restorative, endodontic situations.
- 3. Microscope assisted endodontics: Master the use of dental microscope in endodontic procedures.
- 4. Understanding the fundamentals relevant to conservative/restorative and endodontics.
- 5. Determine the social, economic, environmental and emotional determinants of a given case or community and incorporate them for planning and delivery at the individual or community level.
- Advanced restorative procedures: Expand knowledge of direct and indirect restorations including aesthetic materials tooth coloured restoration, ceramic crown, veneers, inlays and onlays. Master adhesive bonding techniques for optimal results.



<u>Skills</u>

- Diagnosis and treatment planning: Develop strong diagnostic skills to accurately identify and differentiate between various dental conditions. Create comprehensive treatment plans considering conservative restorations, endodontic therapy and other relevant procedures
- Periodontal consideration: Understand the interrelationship between endodontics and periodontics. Recognize the importance of periodontal health in successful endodontic treatment outcomes.
- 3. Trauma management: Expertise in the management of dental trauma cases.
- **4.** Managing complications: Be prepared to handle potential complications during endodontic procedures such as instrument separation, perforation and failed root canal treatment.

Human values, Ethical Practices and Communication Abilities

- 1. Interdisciplinary collaborations: Collaborate with other dental specialities such as prosthodontics, orthodontics and oral surgery to provide comprehensive patient care.
- 2. Evidence based practise: Stay updated with the latest research and advancements in the field of conservative dentistry and endodontics.
- 3. Continuous learning and professional development
- 4. Patient communication: Develop effective communication skills to educate patient about their dental conditions, treatment options and post treatment care.
- Ethical and legal consideration: Adhere to ethical guidelines and legal regulations governing dental practice. Ensure patient confidentiality, maintain accurate records and stay informed about local dental laws and regulations.



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PUBLIC HEALTH DENTISTRY

Objectives

At the end of 3 years of training the post-graduate student should be able to: 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.

The Post-graduate student should be able to

• 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 Heal at the individual and community level.



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- 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 their 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 teamwork approach.
- Respect patient's rights and privileges including patients right to information and right to seek a second opinion.

In addition, the post graduate students should assist and teach undergraduate students, complete two short research projects, one library dissertation and thesis along with conducting regular seminars and journal clubs.

