



Office of the Principal

## **Course outcomes for Undergraduate and Postgraduate Programs**

At the completion of the undergraduate training programme the graduates shall be competent in the following.-

### **General Skills:**

- Apply knowledge & skills in day to day practice
- Apply principles of ethics
- Analyze the outcome of treatment
- Evaluate the scientific literature and information to decide the treatment
- Participate and involve in professional bodies
- Self assessment & willingness to update the knowledge & skills from time to time
- Involvement in simple research projects
- Minimum computer proficiency to enhance knowledge and skills
- Refer patients for consultation and specialized treatment
- Basic study of forensic odontology and geriatric dental problems

### **Practice Management:**

- Evaluate practice location, population dynamics & reimbursement mechanism
- Co-ordinate & supervise the activities of allied dental health personnel
- Maintain all records
- Implement & monitor infection control and environmental safety programs
- Practice within the scope of one's competence

### **Communication & Community Resources**

- Assess patients goals, values and concerns to establish rapport and guide patient care
- Able to communicate freely, orally and in writing with all concerned
- Participate in improving the oral health of the individuals through community activities.

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### **Patient Care – Diagnosis**

- Obtaining patient's history in a methodical way
- Performing thorough clinical examination
- Selection and interpretation of clinical, radiological and other diagnostic information
- Obtaining appropriate consultation
- Arriving at provisional, differential and final diagnosis

### **Patient Care – Treatment Planning**

- Integrate multiple disciplines into an individual comprehensive sequence treatment plan using
- Diagnostic and prognostic information
- Able to order appropriate investigations

### **Patient Care – Treatment**

- Recognition and initial management of medical emergencies that may occur during Dental treatment
- Perform basic cardiac life support
- Management of pain including post operative
- Administration of all forms of local anaesthesia
- Administration of intra muscular and venous injections
- Prescription of drugs, pre operative, prophylactic and therapeutic requirements
- Uncomplicated extraction of teeth
- Transalveolar extractions and removal of simple impacted teeth
- Minor oral surgical procedures
- Management of Oro-facial infections
- Simple orthodontic appliance therapy
- Taking, processing and interpretation of various types of intra oral radiographs
- Various kinds of restorative procedures using different materials available
- Simple endodontic procedures
- Removable and fixed prosthodontics
- Various kinds of periodontal therapy

### **ORAL MEDICINE & RADIOLOGY**

- Able to identify precancerous and cancerous lesions of the oral cavity and refer to the concerned specialty for their management
- Should have an adequate knowledge about common laboratory investigations and interpretation of their results.
- Should have adequate knowledge about medical complications that can arise while treating systemically compromised patients and take prior precautions/ consent from the concerned medical specialist.
- Have adequate knowledge about radiation health hazards, radiations safety and protection.
- Competent to take intra-oral radiographs and interpret the radiographic findings

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- Gain adequate knowledge of various extra-oral radiographic procedures, TMJ radiography and sialography.
- Be aware of the importance of intra- and extra-oral radiographs in forensic identification and age estimation
- Should be familiar with jurisprudence, ethics and understand the significance of dental records with respect to law

### **PAEDIATRIC & PREVENTIVE DENTISTRY**

- Able to instill a positive attitude and behaviour in children towards oral health and understand the principles of prevention and preventive dentistry right from birth to adolescence.
- Able to guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry.
- Able to treat dental diseases occurring in child patient.
- Able to manage the physically and mentally challenged disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.

### **ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS**

- Understand about normal growth and development of facial skeleton and dentition.
- Pinpoint aberrations in growth process both dental and skeletal and plan necessary treatment
- Diagnose the various malocclusion categories
- Able to motivate and explain to the patient (and parent) about the necessity of treatment
- Plan and execute preventive orthodontics (space maintainers or space regainers)
- Plan and execute interceptive orthodontics (habit breaking appliances)
- Manage treatment of simple malocclusion such as anterior spacing using removable appliances
- Handle delivery and activation of removable orthodontic appliances
- Diagnose and appropriately refer patients with complex malocclusion to the specialist

### **PERIODONTOLOGY**

- Diagnose the patient's periodontal problem, plan and perform appropriate periodontal treatment
- Competent to educate and motivate the patient
- Competent to perform thorough oral prophylaxis, subgingival scaling, root planning and minor periodontal surgical procedures
- Give proper post treatment instructions and do periodic recall and evaluation
- Familiar with concepts of osseointegration and basic surgical aspects of implantology

### **PROSTHODONTICS AND CROWN & BRIDGE**

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- 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 implant-supported Prosthodontic Procedures

### **CONSERVATIVE DENTISTRY AND ENDODONTICS**

- Competent to diagnose all carious lesions
- Competent to perform Class I and Class II cavities and their restoration with amalgam
- Restore class V and Class III cavities with glass ionomer cement
- Able to diagnose and appropriately treat pulpally involved teeth (pulp capping procedures)
- Able to perform RCT for anterior teeth
- Competent to carry out small composite restorations
- Understand the principles of aesthetic dental procedures

### **ORAL & MAXILLOFACIAL SURGERY**

- Able to apply the knowledge gained in the basic medical and clinical subjects in the management of patients with surgical problems
- Able to diagnose, manage and treat patients with basic oral surgical problems
- Have a broad knowledge of maxillofacial surgery and oral implantology
- Should be familiar with legal, ethical and moral issues pertaining to the patient care and communication skills
- Should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner
- Understand and practice the basic principles of asepsis and sterilisation
- Should be competent in the extraction of the teeth under both local and general anaesthesia
- Competent to carry out certain minor oral surgical procedure under LA like trans-alveolar extraction, frenectomy, dento alveolar procedures, simple impaction, biopsy, etc.
- Competent to assess, prevent and manage common complications that arise during and after minor oral surgery
- Able to provide primary care and manage medical emergencies in the dental office
- Familiar with the management of major oral surgical problems and principles involved in the inpatient Management

### **PUBLIC HEALTH DENTISTRY**

- Apply the principles of health promotion and disease prevention
- Have knowledge of the organization and provision of health care in community and in the hospital service
- Have knowledge of the prevalence of common dental conditions in India.
- Have knowledge of community based preventive measures
- Have knowledge of the social, cultural and env. Factors which contribute to health or illness.

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- Administer and hygiene instructions, topical fluoride therapy and fissure sealing.
- Educate patients concerning the aetiology and prevention of oral disease and encourage them to assume responsibility for their oral health.

### COURSE SPECIFIC ATTRIBUTES

#### 1. PROSTHODONTICS AND CROWN AND BRIDGE

##### AIM:

To educate dental student so as to enable them for application of theoretical and practical skills needed for patient management. To train them in all the procedures by putting emphasis on series of steps that are involved in diagnosis and treatment planning. Additionally students are taught about planning and conduction of research.

##### General objectives of the course:

1. Dissipation of medical knowledge and understanding of basic concepts of head and neck region that is required for undertaking recommended treatment procedures.
2. Guidance about structured protocol that needs to be implemented during clinical examination and treatment planning therapy for patients.

##### KNOWLEDGE:

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

1. On physiological characteristics, Biochemical attributes, anatomical features, histological identification, microbiological traits, pathological conditions, immunological aspects.
2. About growth and development of oral and maxillofacial structures, bone remodeling, growth spurts, normal general physical body changes
3. Identification, recording and documentation of congenital abnormalities
4. To be able to retrieve information regarding familial and hereditary disorders and syndromes.
5. To diagnose, investigate and plan appropriate treatment as per the patient's need.
6. To be able to advise and interpret intraoral and panoramic radiographs and also be able to identify normal anatomical landmarks and soft tissue and bony pathological variations.
7. To be able to plan age based treatment, keeping in view the patient compliance.
8. To be able to analyze occlusal balance a
9. To be able to utilize newer or updated research methodological procedures used for the conduction of research.
10. To have the essential knowledge on hand hygiene, procedure used for sterilization of instruments as well as the operatory. Also be able to implement infection control measures in the working area and in patient's surroundings

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#### SKILL:

1. To be able to document the patient's chief complain and past dental and medical history and to conduct complete oral/ extra oral examination ,to advise investigations required and sum up a provisional diagnosis / treatment plan based on these records.
2. Should be able to understand the oral clinical conditions of individual patients and make them aware about the treatment options and also be able to create awareness regarding preventive measures needed to avoid compromised dentition.
3. Should attend and participate in continuing dental education programs, hands on workshops, conventions and conferences.
4. Should be able to handle multidisciplinary approach based cases and should work in coordination with other departments whenever needed.
5. Should have required skill for manipulation of biomaterials, technique of impression taking, bite registrations, articulation, checking for occlusal discrepancies, tooth preparations and inlays/ onlays preparations.
6. Should be able to arrange and organize records needed for planning an implant placement, like concept of osseointegration, bone density/quality check, need for ridge augmentation, bone grafts and membranes.
7. Should be able to conduct prosthetic laboratory procedures independently and should have knowledge of all the laboratory equipments functioning and usage.

#### ATTITUDES:

1. Should follow ethics and adhere to ethical practices and act in accordance with them.
2. Comply with the recommended norms advised for patient treatment and care and abide by the same
3. Stick to rightful methods of patient dealing and care and at the same time respect their rights and privileges
4. Should have empathy, kindness and humble behavior towards the elderly age group and treat them with tender care.
5. Willing to build a rapport with patients and understand their individual needs.
6. Be well versed with the implications of procedures undertaking on patients and counsel the patients and make them mentally prepared about the adaptation they need to make with the newly delivered prosthesis.

#### COMMUNICATION:

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1. Should be able to communicate with the patient in their local vernacular language
2. Communication should be loud, clear and understandable
3. Should be able to communicate the needs of the patient efficiently, inform them about all the recent methodologies in prosthetic dental management
4. Should have friendly harmonious communication with colleagues and work with them mutual understanding

## 2. PERIODONTICS

### OBJECTIVES:

1. Understanding of oral biology and surrounding oral soft tissue structures
2. Understanding of cellular components and morphological characteristics of gingival and periodontium
3. periodontal diseases and prevention of the progress of the disease

### KNOWLEDGE:

1. Have adequate knowledge of etiological factors, patho physiology, diagnosis aids used for management of periodontal diseases
2. Various preventive periodontal measures including knowledge about previously used modalities and modifications done in them overtime
3. Knowledge about guidelines and protocols as recommended by authorized organization
4. Risk predictors and biological factors leading to initiation and progression of periodontal diseases
5. Co relation of local and systemic factors that determines gingival and periodontal health
6. Able to recognized the systemic health conditions that can lead top periodontal diseases
7. Recognizing health conditions that may modify the periodontal disease treatment planning
8. Decide regarding non-surgical or surgical management of the case
9. Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated

### SKILLS:

1. Take proper clinical history, thorough examination of both intraorally and extraorally, medical history evaluation, advise diagnostic procedure and interpret them to come to a reasonable diagnosis
2. Effective motivation and education regarding periodontal disease maintenance after the treatment
3. Perform both non surgical and education regarding periodontal disease, maintenance after the treatment

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4. Shall develop teaching skill in the field of periodontology and oral implantology

#### HUMAN VALUES, ETHICAL PRACTICE TO COMMUNICATION ABILITIES

1. Should be able to communicate the needs of the patient efficiently, inform them about all the recent methodologies in prosthetic dental management
2. Adopt ethical principles in all aspects of treatment modalities, professional honesty & integrity are to be fostered.
3. Develop communication skill to make awareness regarding periodontal disease. Apply high moral and ethical standard while carrying out human or animal research.
4. Should be able to communicate with the patient in their local vernacular language
5. Be humble, accept the limitation in his knowledge and skill and ask for help from colleagues when needed. Respect patient rights and privileges including patient right to information and right to seek a second opinion
6. Communication should be loud, clear and understandable
7. Should have friendly harmonious communication with colleagues and work with them with mutual understanding

### 3. ORAL AND MAXILLOFACIAL SURGERY

#### OBJECTIVES:

The training program in oral and maxillofacial surgery is structured to achieve the following four objectives

1. Knowledge
2. Skills
3. Attitude
4. Communication skill and ability

#### KNOWLEDGE:

1. Able to diagnose, manage and treat patients with oral surgical problems
2. About the embryology, functional anatomy and developmental morphology of oro facial structures
3. Knowledge about craniofacial abnormalities of maxilla mandible and surrounding soft tissue structures
4. Knowledge and understanding of the congenital and hereditary defects that may compromised the functioning and harmony of oro facial region
5. To have understood the general surgical principles like pre and post surgical management, evaluation, post surgical care, fluid and electrolyte management , blood transfusion and post surgical pain management.
6. Knowledge on hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of hepatitis and HIV

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## SKILLS:

1. To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedure and order relevant laboratory test and interpret them to arrive at a reasonable diagnosis about the surgical condition
2. Should have acquired the skill to examine a patient with an oral surgical problem in an orderly manner.
3. Be able to understand requisition of various clinical and laboratory investigations and is capable of formulating differential diagnosis.
4. Should be competent in the extraction of teeth under both local and general anaesthesia
5. To perform minor surgical procedures and common maxillofacial surgery.
6. should have the skill to manage any complications, occurring during oral surgical procedures

## ATTITUDE

1. Develop attitude to adopt ethical principle in all aspect of surgical practice, professional honesty and integrity are to be fostered. Care to be delivered irrespective of social status, caste, creed or religion of the patient.
2. Adopt new techniques of surgical management developed from time to time based on scientific research
3. Respect patient right and privileges including patient right to information and right to seek a second opinion
4. Develop attitude to seek opinion from an allied medical specialist as and when required

## COMMUNICATION SKILL

1. Should be able to communicate with the patient in their local vernacular language
2. Should be able to communicate the needs of the patient efficiently, inform them about all the recent methodologies in prosthetic dental management
3. Should have friendly harmonious communication with colleagues and work with them mutual understanding

## **4. CONSERVATIVE DENTISTRY**

### OBJECTIVES:

To bring the teeth in their natural healthy state and be able to restore their normal form and function

### KNOWLEDGE:

1. Describe aetiology, pathophysiology and restorative situation in relation to enamel and dentinal hard tissues of the teeth along with adequate

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knowledge of pathways of pulp, nervous innervation and cellular components.

2. Knowledge about different dental materials used for restoration of teeth along with their mechanism of action and tooth bonding properties.
3. Ability to master differential diagnosis and recognize condition that may require multi disciplinary approach or a clinical situation.
4. Knowledge about different risk factors that play a vital role in caries process.
5. Update himself by self study and by attending basic and advanced courses, conferences, seminar and workshops in the speciality of Conservative Dentistry- Endodontic- Dental Materials And Restorative Dentistry
6. 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:

1. Recording of proper case history, elaborate explanation regarding the current illness and also the relevant past dental and medical history.
2. To be able to perform caries risk assessment by means of clinical examination and use of advanced tools
3. Thorough patient hard tissue as well as soft tissue examination along with conduction of diagnostic procedures to execute and devise an appropriate treatment plan
4. Providing treatment as per the risk category of the patient and also provide guidance for stopping the future caries progression
5. Perform all level of restorative work and surgical and non surgical management of endodontically compromised tooth
6. Proper sterilization of instruments after treating each patients and follow infection control measures in the dental clinical environment and laboratories

#### HUMAN VALUES, ETHICAL PRACTICE TO COMMUNICATION ABILITIES:

1. Adopt ethical principle in all aspect of restorative and contemporaries Endodontics including non surgical and surgical endodontics. Professional honesty and integrity should be the top priority
2. To be able to develop an effective communication with the patient and educate them about the maintenance of oral hygiene by following regular oral care regime
3. Motive the patient for periodic normal checkup visits and follow up\
4. Care to be delivered irrespective of social status, caste, creed or religion of the patient.
5. Develop communication skill in particular to explain various options available for management and to obtain a true informed consent from the patient

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6. Respect patient right and privileges including patient right to information and right to seek a second opinion

## **5. ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS**

### **OBJECTIVES:**

The training program in orthodontics is to structure and achieve the following objectives

### **KNOWLEDGE:**

1. The etiology, pathophysiology, diagnosis and treatment planning of various common orthodontic problems
2. The dynamic interaction of biologic processes and mechanical forces acting on the stomatognathic system during orthodontic treatment
3. To know the importance of each domain of orthodontics namely preventive, interceptive and corrective
4. Management of variable cases as per the mechanical expertise required for diagnosis and subsequent treatment
5. Basic science relevant to the practice of orthodontics
6. Factors affecting the long range stability of orthodontic correction and their management
7. Knowledge on hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of hepatitis and HIV

### **SKILLS:**

1. Recording of proper case history, elaborate explanation regarding the current illness and also the relevant past dental and medical history.
2. To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures and interpret them and arrive at reasonable diagnosis about the dentofacial deformities
3. Documentation of patient oral records like study models, panoramic radiographs and photographs in an organized manner
4. To be able to motivate the patients by explaining occlusal changes in detail by using pre and post radiographic and photographic data
5. 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

### **ATTITUDES:**

1. Develop an attitude to adopt ethical principles in all aspect of orthodontic practice
2. Professional honesty and integrity are to be fostered

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3. Patient care to be delivered irrespective of social status, caste, creed or religion of the patient.
4. Respect patient right and privileges including patient right to information and right to seek a second opinion
5. Develop attitude to seek opinion from an allied medical specialist as and when required

#### COMMUNICATION SKILLS:

1. Develop communication skill in particular to explain various options available for management and to obtain a true informed consent from the patient
2. Develop adequate communication skill particularly with the patient giving them various options available to manage a particular
3. Develop the ability to communicate with professional colleagues in orthodontics and other specialities through various media like internet, e-video, conferences to render the best possible treatment

### **6. ORAL PATHOLOGY AND MICROBIOLOGY**

#### OBJECTIVES:

1. To train a post graduate to ensure higher competence in both general and special pathology dealing with the nature of oral disease, their causes, processes and effects
2. An oral pathologist is expected to perform routine histopathological evaluation of specimens relating to oral and perioral tissue to carry out routine diagnostic procedures including hematological aspects, cytological, microbiological, immunological and ultra structural investigations
3. 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 database, referencing and skill in writing scientific papers
4. Present scientific data pertaining to the field, in conferences both as poster and verbal presentation and to take part in discussions

### **7. ORAL MEDICINE AND RADIOLOGY**

#### OBJECTIVES:

#### KNOWLEDGE:

Theoretical, clinical and practical knowledge of all mucosal lesion, diagnostic procedures pertaining to them and latest information of imaging modules

#### SKILLS:

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Three important skills need to be imparted

1. Diagnostic skill in recognition of oral lesion and their management
2. Research skill in handling scientific problems pertaining to oral treatment
3. 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 inculcate

## **8. PEDODONTICS & PREVENTIVE DENTISTRY**

OBJECTIVES:


1. Instill a positive attitude and behavior in children
2. Interception of deleterious habits to preserve the occlusal integrity
3. Understand the principle of prevention and preventive dentistry right from birth to adolescent
4. Guide and counsel the parents in regard to various treatment modalities including different facets of preventive dentistry
5. Prevent and intercept occlusal discrepancies during early ages

KNOWLEDGE:

1. Difference in anatomical, physiological and emotional characteristics of adults and children
2. Understanding of behavioral traits of toddlers, preschooler and adolescent
3. Specific attributes of primary, mixed and young permanent dentition
4. To know about cariogenic and non cariogenic diet and provide counseling to the parents regarding the same
5. Knowledge about infant oral health care and establishment of dental home as an early intervention to prevent caries occurrence
6. On growth spurts, developmental milestones and providing proper treatment plan according to the various stage of development
7. Identifying child abuse and neglect and managing the same

SKILLS:

1. To be able to analyze the dental age of the patient and compare it with chronological age in order to identify any developmental delays
2. To counsel expectant mothers about prenatal and postnatal care
3. To educate parents about the correct methods of feeding and weaning
4. To be able to perform caries risk assessment by means of clinical examination and use of advanced tools
5. To identify the need for topical/ systemic fluoride administration
6. Be competent to treat dental disease occurring in the child patient
7. Manage to repair and restore the lost/ tooth structure to maintain harmony between both hard and soft tissue of the oral cavity

  
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8. Able to manage children with special health care need effectively and efficiently

ATTITUDE:

1. Develop an attitude to adopt ethical principles in all aspects of Pedodontic practice
2. Reassure the parents about the treatment outcome and motivate them for treatment compliance
3. To obtain a true informed consent from the parent before undertaking any treatment in a child patient
4. Treat patient with tender, love and care
5. Develop attitude to seek opinion from an allied medical specialist as and when required



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