



**YENEPOYA**

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade


## **YENEPOYA DENTAL COLLEGE**

**PROGRAM OUTCOMES AND COURSE OUTCOMES**

**UNDERGRADUATE PROGRAM**

**BACHELOR OF DENTAL SURGERY**

**ATTESTED**

  
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**PROGRAM OUTCOMES**  
**UNDERGRADUATE PROGRAM**  
**BACHELOR OF DENTAL SURGERY**

(K=Knowledge, S=Skill, A=Attitude)

- PO1:** Describe normal and abnormal human structure, development, function and behavior that is relevant to the practice of Dentistry. (K)
- PO2:** Apply basic knowledge of biomedical, technical and clinical sciences for the effective practice of Dentistry. (K,S)
- PO3:** Elicit detailed Dental and relevant Medical history, perform an oral and general physical examination and choose relevant laboratory diagnostic tests for identification of oral disorders, prevention of oral disease and promotion of oral health.(K,S)
- PO4:** Demonstrate the ability to interpret available clinical and laboratory data and effective clinical problem solving, in order to generate differential diagnoses and to manage oral health disorders. (K,S)
- PO5:** Perform and interpret a basic oral radiological examination safely. (K,S)
- PO6:** Plan and administer, safely, appropriate treatments, including surgical procedures, for common oral disorders in adults as well as children. (K,S)
- PO7:** Identify and manage common medical emergencies encountered in general dental practice.(K,S)
- PO8:** Identify and refer patients who may require specialist care. (K,S)
- PO9:** Demonstrate knowledge of global and national needs, policies and regulatory frameworks relevant to oral health. (K,S,A)
- PO10:** Function effectively as an oral health care team member in health care settings. (S, A)
- PO11:** Communicate effectively and sensitively with patients, care-givers, colleagues and the public in a manner that will improve health care outcomes and patient / client satisfaction.(S,A)
- PO12:** Demonstrate the ability to continue refining existing knowledge / skills and acquire new knowledge/skills. (K,S,A)
- PO13:** Select and pursue an appropriate career pathway that is professionally rewarding and personally fulfilling. (S,A)
- PO14:** Recognize and manage medico-legal, ethical and professional issues in dental practice. (K,S,A)
- PO15:** Demonstrate and practice integrity, responsibility, respect and selflessness. (S,A)

  
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**COURSE OUTCOME**  
**UNDERGRADUATE PROGRAM**  
**BACHELOR OF DENTAL SURGERY**

**Course Department of conservative dentistry and endodontics**

**Description**

- CO 1** Acquire adequate knowledge, necessary skill and attitude to carry out dental practice involving prevention, diagnosis and treatment of anomalies and diseases of teeth and associated hard and soft tissues
- CO 2** Apply basic knowledge of anatomy, physiology and biomechanical properties of teeth, biomaterials and associated tissues for effective practice of Dentistry
- CO 3** Understand and Demonstrate the etiology, pathophysiology and clinical manifestation of diseases of the teeth and adjacent hard and soft tissues.
- CO 4** Acquire basic knowledge of etiology, biology, prevention, interception and management of carious and non carious lesion of teeth.
- CO 5** Choose various methods to identify the disease process at different stages and determine the treatment modalities
- CO 6** Define and Classify disease of the teeth and adjacent tissues and plan out the treatment preferences
- CO 7** Communicate effectively and sensitively with patients and public to bring about satisfaction and trust.
- CO 8** Identify and manage common anomalies of shape, size and number of teeth
- CO 9** Perform and interpret basic diagnostic procedure of teeth and perioral tissues, its prevention and treatment with the knowledge of physiological systems.
- CO 10** Demonstrate basic knowledge of the biological basis of endodontics and management of various endodontics situations including diagnosis, treatment planning and treatment modalities.
- CO 11** Identify and refer patients requiring specialist care
- CO 12** Analyze occlusion, factors affecting and physiology of occlusion with emphasis on trauma from occlusion correction.

**Dental Anatomy & Dental Histology**

- CO 1** Student should be able to appreciate the morphological features of all primary and permanent teeth, its chronology, sequence of eruption, occlusion and variations in morphology
- CO 2** Students should have an understanding about the development of orofacial structures in particular developmental processes of teeth with applied aspects
- CO 3** Students should know various properties of dental tissues, their microscopic features, the histological basis of various dental treatment procedures, physiologic aging process and the clinical considerations
- CO 4** Students should appreciate the macroscopic and microscopic structure and



- functions of oral facial tissues & variations in different pathological/non-pathological states and physiologic aging process
- CO 5 Students should have basic understanding about laboratory techniques involved in routine soft tissue and hard tissue processing.  
Dental Materials
- CO 1 Dental student interpret the Biocompatibility and type of biological responses that materials cause and the anatomic aspects of the oral cavity that influence or modify the biological response to materials
- CO 2 Dental student acquire knowledge of the composition, properties, manipulative variables, and recent advances of restorative, preventive, esthetic and surgical dental materials.
- CO 3 Dental student develop the ability to use dental materials which will include the manipulation through laboratory and clinical exercises.

### **Oral and Maxillofacial Surgery**

**CO1:** To acquire knowledge regarding the scientific and surgical principles required to provide Oral Maxillofacial surgical care and prevention of cross infection

**CO2:** 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.

**CO3:** Record case history, perform clinical examination, order essential investigations and interpret them to arrive at a final diagnosis and plan the treatment and management of oral and maxillofacial problems.

**CO4:** Competently diagnose and treat medically compromised patients with minor oral surgical problems and manage medical emergencies if any during the procedures. Assess the need for specialist consent for such patients.

**CO5:** Perform competently extraction of tooth/teeth under local/general anesthesia with prescription of medications, post extraction instructions and proper follow-up care. Management of intra/post-operative complications with referral to an Oral and Maxillofacial Surgeon as required.

**CO6:** To know the ethical issues and develop communication skills and compassion towards the patient for establishing better patient-doctor relationship irrespective of social status, caste, creed or religion of the patient.

**CO7:** Ability to carry out simple minor oral surgical procedures such as alveoloplasty, frenectomy, incision and drainage, dental wiring and biopsy.

**CO8:** To keep abreast with the recent advances in the speciality of Oral and Maxillofacial Surgery such as dental implants, laser and cryotherapy.

**CO9:** Understand the management of major oral surgical problems and principles involved in the management of hospitalised patients.

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## ORAL MEDICINE AND RADIOLOGY

- CO 1 To have adequate knowledge of the applied anatomy of the face and oral cavity, the basic physiologic processes, pathologic processes and the basics of pharmacologic applications
- CO 2 Case history- communication skills, intra oral & extra oral examination, investigations
- CO 3 To know the etiology, epidemiology , clinical presentation and management protocols of the common disorders of the oral and para-oral structures
- CO 4 Understand the oral manifestations of systemic diseases & dental management of medically compromised patients
- CO 5 Outline the basic principles, clinical, radiographic and medico-legal aspects of forensic odontology
- CO 6 To know the history of Radiology and basics of Radiation Physics
- CO 7 To understand the basics of effects of radiation on living tissues, radiation safety measures
- CO 8 To understand and perform various intra-oral radiographic techniques using appropriate accessory devices and film processing equipments to produce quality intra - oral radiographs
- CO 9 To understand principles of radiographic interpretation and to identify anatomical structures and to differentiate it from pathologies on an intra-oral radiographs
- CO 10 To identify and understand the indications of various extra - oral radiographs in different maxillofacial pathologies
- CO 11 To know and understand various digital and advances in maxillofacial imaging

## ORAL PATHOLOGY

- CO 1 Describe the pathological processes that involve the oral cavity and the manifestations of common diseases, their diagnosis and correlation with other clinical pathological processes
- CO 2 Discuss the oral manifestations of systemic diseases to help in correlating with systemic physical signs and laboratory findings
- CO 3 Determine the principles governing treatment of oral diseases
- CO 4 Describe the basic aspects and methods used in Forensic Odontology
- CO 5 Report microscopic studies of common lesions affecting the oral tissues through microscopic slides & projection slides and study of disease processes with the help of surgical specimens
- CO 6 Discuss teeth anomalies, polymorphisms with the help of specimens & plaster casts.
- CO 7 Diagnose the commonly occurring diseases in the oro-facial region on the basis of clinical, radiological and histological findings

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## DEPARTMENT OF ORTHODONTICS

- CO 1 Define Orthodontics, explain basic principles, concepts, process of growth, development of arches , occlusion and associated craniofacial structures.
- CO 2 Classify and explain different types and etiological factors in different types of skeletal and dental problems.
- CO 3 Explain different types of anchorage, tooth movement, biological reactions and Bio-mechanical principles of tooth movement in Orthodontics.
- CO 4 Demonstrate skills in Diagnosis and treatment planning in Orthodontics and dentofacial orthopaedics, to make upper and lower dental arch impressions, prepare the study models, perform model analyses and analyse and interpret the radiographs.
- CO 5 Describe the various lab procedures, materials and their uses in the fabrication of different types of orthodontic appliances.
- CO 6 Etiology, theory, schools of thought of retention and retainers in orthodontics.
- CO 7 Recognize types of malocclusions and refer the cases to a specialist for higher level of care. Ability to diagnose and manage simple malocclusion.
- CO8 Explain etiopathogenesis ,classification and management of patient with CLP and patients requiring surgical correction.

## PAEDODONTICS

- CO 1 Demonstrate the principles of pediatric and preventive dentistry right from birth to adolescence, including those with special health care needs
- CO 2 Elicit detailed case history and methodological examination of the child patient, perform essential diagnostic procedures and interpret them, arrive at a reasonable diagnosis and formulate a comprehensive treatment plan and treat appropriately.
- CO 3 Relate the current concepts of caries and its underlying causative factors in a child, and to implement timely, effective management strategies.
- CO 4 Master the use of various restorative materials used in children,including semi-permanent, stainless steel crowns, restorations, and esthetic crowns along with recent advances
- CO 5 Diagnose, prevent and intercept developing dental health problems in the child, including malocclusions.
- CO 6 Understand basics of growth and development , psychology and behaviour of children and display strategies for management in the dental clinic
- CO 7 Identify morphology of primary and permanent root canal, pulpal and periapical diseases and perform pulp therapy techniques
- CO 8 Master exodontia and LA techniques for children
- CO 9 Describe salient features of gingiva and periodontium in primary dentition and summarize management of common gingival and periodontal diseases in children
- CO 10 Demonstrate the management of disabled children effectively and efficiently, tailored to the need of individual requirement and conditions
- CO 11 Understand the etiology, prevention and management of common dental injuries in

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children.

- CO 12 Develop and deliver oral health education and participate in school dental health program

### **PERIODONTICS**

- CO 1 Describe the diverse anatomic and microscopic features of the periodontium and the interrelated functional aspects.
- CO 2 Explain the etio-pathogenesis of periodontal/peri-implant diseases
- CO 3 : Demonstrate the ability to recognise and diagnose the various forms of periodontal/peri-implant diseases.
- CO 4 Apply the appropriate diagnostic technique to diagnose periodontal diseases
- CO 5 Identify, plan and execute non-surgical and surgical periodontal treatment procedures based on current scientific evidence to treat systemically healthy and systemically compromised patients.
- CO 6 Communicate and demonstrate appropriate measures in the prevention of periodontal diseases
- CO 7 Analyse the role of inter-disciplinary approaches in periodontal/peri-implant therapy and referral to the specialist.
- CO8 : Inculcate a sense of social responsibility and capability to deliver periodontal healthcare to the underprivileged sections of the society

### **PROSTHODONTICS**

- CO 1:** Apply basic and systemic medical sciences on human anatomy, embryology, histology, applied in general and particularly to head and neck, Physiology & Biochemistry, Pathology and Microbiology, virology, health and diseases of various systems of the body (systemic). Apply basic and systemic medical sciences in surgery and medicine, pharmacology, nutrition, behavioral science, age changes, genetics, Immunology, Congenital defects and syndrome and Anthropology, Bioengineering, Bio-medical and Biological Principle and applications to Dental material science
- CO 2:** Diagnose and plan treatment for patients requiring a Prosthodontic therapy, Interpret a radiograph and other investigations for the purpose of diagnosis and treatment plan. Evaluate 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 esthetic, and biomaterials, craniofacial disorders, problems of psychogenic origin. Evaluate General health conditions and emergency as related to Prosthodontics treatment.
- CO 3:** Knowledge on ethics, laws and Jurisprudence and forensic odontology in Prosthodontics. Respect patient's rights and privileges including patients right to information and right to seek the second opinion.

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- CO 4:** Identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.
- CO 5:** Acquire essential knowledge of personal hygiene, infection control, prevention of cross infection and safe disposal of waste, keeping in view the risks of transmission of Hepatitis and HIV.
- CO 6:** Examine the patients requiring Prosthodontics therapy, investigate the patient systemically, analyze the investigation results, radiography, diagnose the ailment, plan a treatment, communicate it with the patient and execute it. Identify cases, which are outside the area of his specialty/ competence and refer them to appropriate specialists. Interact with other specialty including 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.
- CO 7:** Restore lost functions of Stomatognathic system namely mastication, speech, appearance and psychological comforts, by understanding biological, biomedical, bioengineering principles and systemic condition of the patient to provide a quality health care of the craniofacial region
- CO 8:** Perform clinical and Laboratory procedure with an understanding of biomaterials, tissue conditions related to the prosthesis and have competent dexterity and skill for performing clinical and laboratory procedures in fixed, removable, implant, maxillofacial, TMJ and esthetics in Prosthodontics. Adopt new methods and techniques in prosthodontics from time to time based on scientific research, which is in patient's best interest.
- CO 9:** 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, video conference, and etc. to render the best possible treatment

#### **PUBLIC HEALTH DENTISTRY**

- CO 1** Elicit case history, perform Clinical Examination to arrive at a diagnosis using appropriate diagnostic aids and provide comprehensive Oral health care to the patients with strict adherence to the Infection control protocol.
- CO 2** Identify Community health/ oral health problems using the knowledge of Epidemiology and indices to arrive at Community Diagnosis and communicate the findings to the community.
- CO 3** Develop Health Education aids and impart Health Education using appropriate methods to various target groups.
- CO 4** Identify health systems and health policies for delivery of health care services in India and advocate the need for Oral health policy.
- CO 5** Plan, implement and evaluate appropriate Community Oral Health Programs for Promotion of Oral Health and Prevention of Oral disease at the Community level

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for various target groups including school children.

- CO 6 Adopt practices to prevent Occupational hazards associated with the practice of dentistry
- CO 7 Identify and manage Medico legal issues in the practice of dentistry. Adopt and apply ethical and Moral Standards while carrying out Epidemiological Researches, Community Oral Health Activities
- CO8 Display competency and work efficiently in a 'Team Approach'
- CO9 Strive to maintain the highest professional dignity and honour by adhering to the guidelines and values set up by the governing bodies of the profession. Respect patient's rights and Privileges including Patient's right to information and right to seek a second opinion.
- CO10 Develop communication and administration skills to coordinate between appropriate manpower and resources for delivery of Health/ Oral health care.
- CO11 Sensitize the community towards the various payment plans and public health/ oral health programs in place for availing health/oral health services.
- CO12 Communicate Environmental Health Hazards and associated Health Outcomes to the Community, Stakeholders and Professional audience

## **MEDICAL SUBJECTS**

### **BIOCHEMISTRY**

- CO1 Understanding of biochemical and molecular processes involved in health and disease with relevance to dentistry.
- CO2 Understanding of importance of nutrition in health and disease relevant to dentistry.
- CO3 Understanding of biochemical basis and rationale of clinical laboratory tests, and demonstrate ability to interpret these in the clinical context.

### **GENERAL MEDICINE**

- CO 1 Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,
- CO 2 Competently interview and examine an adult patient and make a clinical diagnosis,
- CO 3 Appropriately order and interpret laboratory tests,
- CO 4 Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures,
- CO 5 Follow up of patients with medical problems and refer whenever required,
- CO 6 Communicate effectively, educate and counsel the patient and family,
- CO 7 Manage common medical emergencies and refer when required,
- CO8 Independently perform common medical procedures safely and understand patient safety issues.

### **MICROBIOLOGY**

- CO 1 Understanding of role of microbial agents in health and disease,

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- CO 2 Understand and practice various methods of Sterilisation and disinfection in dental clinics.
- CO 3 Understanding the immune system in health and disease.
- CO 4 Ability to understand the etiology, pathogenesis, laboratory diagnosis & prevention of common infections.

#### **PHARMACOLOGY**

- CO1 Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dental practice
- CO2 List the indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason
- CO3 Prescribe drugs for common dental and medical ailments
- CO4 Prescribe common and essential drugs in special conditions such as pregnancy, lactation old age, renal, hepatic damage and immunocompromised patients
- CO5 Integrate the rational drug therapy in clinical pharmacology
- CO6 Indicate the principles underlying the concepts of "Essential drugs"
- CO7 To appreciate adverse reactions and drug interactions of commonly used drugs
- CO8 Critically evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used in dentistry

#### **PHYSIOLOGY**

- CO 1 Explain the normal functioning of organs, their integration with various systems in maintenance of homeostasis
- CO 2 Explain the pathophysiological basis of diseases related to various organ systems
- CO 3 Perform and interpret the experiments designed for the better understanding of physiological functions

#### **GENERAL ANATOMY**

- CO 1 Understanding of the gross and microscopic structure and development of various structures in head & neck
- CO2 Comprehension of the normal regulation and integration of the functions of the structures and systems related to head & neck
- CO3 Understanding of the clinical correlation of structures and systems involved and interpret the anatomical basis of disease presentation in head & neck region

#### **GENERAL PATHOLOGY**

- CO 1 Describe the normal homeostatic mechanisms and the pathological process in their derangement and the effects on human systems.
- CO 2 Discuss the concepts of cell injury and pathological and immunological responses produced thereby in different tissues and organs and the body's capacity for healing.
- CO 3 Demonstrate basic Knowledge and understanding of the immune system in health and disease.
- CO 4 Explain the etiology, pathogenesis, pathological effects and clinicopathological correlation of common infectious and non-infectious diseases.

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- CO 5 Describe the concept of hemodynamic disorders, thromboembolic disease and shock and their clinical application.
- CO 6 Describe the concept of neoplasia with reference to the etiology, morphological features, diagnosis and prognosis in different tissues and organs of the body.
- CO 7 Discuss the epidemiology, gross and microscopic features, clinical presentation and diagnostic techniques associated with different diseases in different organ systems to the extent needed for the understanding of disease processes and their clinical significance.
- CO8 Recognise and interpret the common hematological disorders and the investigations, blood banking as well as cytological procedures.
- CO9 Perform and interpret the basic bed-side clinical pathology procedures on blood and urine samples.

### **GENERAL SURGERY**

- CO 1 Understanding of the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children
- CO 2 Ability to choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition
- CO 3 Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice
- CO 4 Ability to perform common diagnostic and surgical procedures at the primary care level
- CO 5 Ability to recognize, resuscitate, stabilize and provide Basic life support to patients following trauma
- CO 6 Ability to administer informed consent and counsel patient prior to surgical procedures

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