



Pandit Deendayal Upadhyay Dental College

Recognized by Dental Council of India, New Delhi and Affiliated to M.U.H.S. Nashik
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8.1.8 Specific competencies and measures taken by the institution to attain the same.

| Sr No | Subject | Specific Competencies | Steps Taken To Attain The Specific Competencies |
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| 1. | ANATOMY | <ul style="list-style-type: none"> ➤ an appreciation of normal human structure, development ➤ provide the student a broad knowledge of the normal structures ➤ To identify various tissues under microscope | <ul style="list-style-type: none"> ➤ Dissection of head, neck & face region of human cadavers ➤ Identification of hard & dissected soft tissue specimens ➤ Identification of histological slides of tissues ➤ Interpretation of radiographs |
| 2. | PHYSIOLOGY | <ul style="list-style-type: none"> ➤ Provide the student a broad knowledge of functions of the body, the alterations which take place in disease with particular reference to those conditions in which medical and dental co-operation is essential for proper management ➤ Conduct experiments designed for the study of physiological phenomenon ➤ Distinguish between the normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory | <ul style="list-style-type: none"> ➤ Blood hemoglobin value determination ➤ Blood group analysis ➤ Determination of bleeding & clotting time ➤ Recording vitals- Pulse & BP (palpatory & auscultatory) ➤ WBC count, RBC count, peripheral blood smear exercises |
| 3. | BIOCHEMISTRY | <ul style="list-style-type: none"> ➤ Biochemical analysis relevant to clinical screening and diagnosis ➤ Make use of conventional techniques/ instruments to perform | <ul style="list-style-type: none"> ➤ Discussion on interpretation of findings of various biochemical tests ➤ Normal urine analysis ➤ Color reactions of |



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| | | <ul style="list-style-type: none"> ➤ Analyze and interpret investigative data | <ul style="list-style-type: none"> proteins ➤ Detection of abnormal constituents in urine- protein, glucose, ketone bodies |
| 4. | DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY | <ul style="list-style-type: none"> ➤ a detailed knowledge of the structure and function of the dental and oral tissues ➤ Able to identify different oral hard tissues in clinical situations ➤ Able to carve and reproduce the morphology of human permanent teeth in wax blocks ➤ To identify dental tissues under microscope ➤ To identify types of dentition ➤ To identify or locate the different areas/ surfaces of teeth ➤ Able to appreciate the shedding and tooth eruption sequence ➤ To identify a person's age according to him/her dentition ➤ Able to appreciate the concept of occlusion, various jaw movements. ➤ Able to appreciate the influence of age, gender, and race on oral and Para-oral structures ➤ Able to differentiate normal from abnormal and diseased status | <ul style="list-style-type: none"> ➤ Identification of permanent teeth ➤ Wax carving of permanent teeth ➤ Histological identification of dental hard & soft tissues |
| 5. | GENERAL PATHOLOGY | <ul style="list-style-type: none"> ➤ Carry out certain investigations and ability to interpret lab findings ➤ Able to identify the normal diseases like tumor, non-tumors and also to interpret what are the investigations needed for the diagnosis of the disease | <ul style="list-style-type: none"> ➤ Hb estimation & identification of abnormal finding ➤ Identification of hard & soft tissue lesions ➤ Blood group identification ➤ RBC count, WBC count, peripheral blood smear |
| 6. | MICROBIOLOGY | <ul style="list-style-type: none"> ➤ Able to carry out proper aseptic procedures in dental clinic ➤ Able to select, collect and transport clinical specimens to the laboratory | <ul style="list-style-type: none"> ➤ Discussion & identification of various micro organisms ➤ Gram staining & Acid |



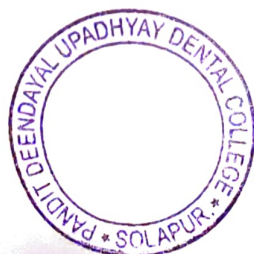
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| | | <ul style="list-style-type: none"> ➤ Interpretation of antimicrobial susceptibility tests and to make right choice of antibiotic based on spectrum of infection and avoid antibiotic resistance | <ul style="list-style-type: none"> Fast staining exercises ➤ Culture media-discussion ➤ Sterilization & disinfection protocol - discussions |
| 7. | GENERAL PHARMACOLOGY | <ul style="list-style-type: none"> ➤ Able to understand various drugs and their effects ➤ Able to understand mechanism of action of various drugs ➤ Appreciate adverse reactions and drug interactions of commonly used drugs ➤ Evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used ➤ Prescribe drugs for common medical and dental ailments | <ul style="list-style-type: none"> ➤ Discussion on various drugs- indication , dosage adverse effects & contra indications ➤ Preparation of mouth rinse, tooth powder, gum paint ➤ Prescription writing |
| 8. | DENTAL MATERIALS | <ul style="list-style-type: none"> ➤ Student should know about the physical and chemical properties of the dental materials ➤ Able to manage various dental products | <ul style="list-style-type: none"> ➤ Discussion & demonstration on manipulation of dental materials ➤ Manipulation of gypsum products, shellac, ZOE, cold cure resin ➤ Manipulation of dental cements & amalgam ➤ Formative assessments |
| 9. | PRE- CLINICAL CONSERVATIVE DENTISTRY | <ul style="list-style-type: none"> ➤ The laboratory skills to be developed by the students like pre-clinical conservative dentistry ➤ Develop skills in preparation of various cavities ➤ Perform various restorative procedures | <ul style="list-style-type: none"> ➤ Class I, II cavity preparation & amalgam restoration ➤ Class V cavity & GIC restoration ➤ Inlay cavity preparation ➤ Airtor exercises on extracted teeth ➤ Formative assessments ➤ Quiz |
| 10. | PRE-CLINICAL PROSTHODONTICS & | <ul style="list-style-type: none"> ➤ The laboratory skills to be developed by the students like | <ul style="list-style-type: none"> ➤ Discussion on various types of prosthesis & |



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| | CROWN & BRIDGE | <p>pre-clinical Prosthodontics, Crown Bridge,</p> <ul style="list-style-type: none"> ➤ To provide a detailed knowledge of the form and structure of teeth associated tissues and occlusal relationships. | <p>their indications</p> <ul style="list-style-type: none"> ➤ Discussion on steps of complete denture fabrication ➤ Discussion on different maxillary & mandibular anatomical landmarks ➤ Base plate adaptation, wax rim fabrication, articulation & teeth arrangement ➤ Denture processing ➤ RPD fabrication- cold cure ➤ |
| 11. | GENERAL MEDICINE | <ul style="list-style-type: none"> ➤ knowledge on human disease and understand its manifestations as relevant to the practice of dentistry ➤ Able to take proper case histories ➤ Able to record vitals- BP, temperature, Pulse ➤ Do a complete general physical examination of patients ➤ Look for cyanosis, clubbing, pallor, icterus, pedal edema, lymphadenopathy ➤ Interpret the solicited signs and symptoms of various systemic disease process ➤ receive instruction in first-aid and principles of cardio-pulmonary resuscitation | <ul style="list-style-type: none"> ➤ Case history & treatment planning ➤ Discussion on various medicines & its pharmacology, side effects & contra indications ➤ Discussion on interpretation of medical reports ➤ Discussion on treatment planning |
| 12. | GENERAL SURGERY | <ul style="list-style-type: none"> ➤ This clinical instruction should enable the student to understand and perhaps diagnose common systemic diseases which have relevance to dental practice ➤ to recognize physical and mental illness, dealing with emergencies, effective communication with patients, | <ul style="list-style-type: none"> ➤ Recording of case history & Treatment Plan ➤ Radiographic interpretation ➤ Examination of swelling, ulcer, hernia ➤ Discussion & identification of different surgical |



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| | | <ul style="list-style-type: none"> ➤ To differentiate between Benign and Malignant diseases of Head & Neck ➤ Know the operative procedure, post-operative complications and post-operative management | instruments |
| 13. | ORAL PATHOLOGY AND ORAL MICROBIOLOGY | <ul style="list-style-type: none"> ➤ Development of a concept regarding physiological and biochemical processes relevant to oral cavity for better understanding of the changes which occur with the onset of disease in the oral cavity. ➤ Aware of the importance of various dental tissues in forensic investigation. ➤ Study of teeth anomalies through tooth specimens & plaster casts ➤ Study of dental diseases ➤ Microscopic study of common lesions affecting oral tissues through microscopic slides | <ul style="list-style-type: none"> ➤ Discussions on various dental anomalies ➤ Discussion of different ways of differentiating various lesions found in oral cavity ➤ Tooth grinding & slide preparation ➤ Discussion on identification of tumors & cysts ➤ Formative assessments |
| 14. | ORAL MEDICINE & RADIOLOGY | <ul style="list-style-type: none"> ➤ Able to identify precancerous and cancerous lesions of the oral cavity and refer to the concerned speciality 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 | <ul style="list-style-type: none"> ➤ Case history and treatment planning ➤ Discussion on identification of different oral lesions & their management ➤ Discussion on various diagnostic methods ➤ Discussion on various radiographic methods ➤ Shooting & processing of IOPA ➤ Interpretation of radiographs ➤ Discussion on radiographic techniques for TMJ |



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| | | <p>compromised patients and take prior precautions/ consent from the concerned medical specialist.</p> <ul style="list-style-type: none"> ➤ Have adequate knowledge about radiation health hazards, radiations safety and protection. ➤ Competent to take intra-oral radiographs and interpret the radiographic findings ➤ 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 | <ul style="list-style-type: none"> ➤ Formative assessments |
| 15. | PAEDIATRIC & PREVENTIVE DENTISTRY | <ul style="list-style-type: none"> ➤ Able to instill a positive attitude and behavior 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 | <ul style="list-style-type: none"> ➤ Discussion on child management in clinics ➤ Recording of case history & discussions ➤ Discussions on techniques of LA in children ➤ Restoration & extraction in deciduous & mixed dentition ➤ Techniques of fluoride application- discussion ➤ Scaling & fluoride application ➤ Formative |



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| | | <p>preventive dentistry.</p> <ul style="list-style-type: none"> ➤ 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. | <p>assessments</p> |
| 16. | ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ Recording case histories ➤ Wire bending exercises ➤ Fabrication of various orthodontic appliances ➤ Discussion on model analysis, cephalometric radiographs interpretation ➤ Discussion on classification of malocclusion & its respective treatment plan ➤ Formative assessments |



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| 17. | PERIODONTOLOGY | <ul style="list-style-type: none"> ➤ Diagnose the patients periodontal problem, plan and perform appropriate periodontal treatment ➤ Competent to educate and motivate the patient | <ul style="list-style-type: none"> ➤ Recording case histories ➤ Discussion on periodontal instruments & materials |
| | | <ul style="list-style-type: none"> ➤ 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 Osseo integration and basic surgical aspects of implantology | <ul style="list-style-type: none"> ➤ Supragingival & subgingival scaling & root planning – Hand and ultrasonic scaling ➤ Assisting in surgical procedures ➤ Suturing ➤ Discussion on various gingival surgical procedures ➤ Oral hygiene maintainances counseling ➤ Formative assessments |
| 18. | PROSTHODONTICS AND CROWN & BRIDGE | <ul style="list-style-type: none"> ➤ 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 prosthodontics procedures. ➤ Familiar with the concept of Osseo integration and the value of implant-supported Prosthodontics procedures | <ul style="list-style-type: none"> ➤ Discussion on dental materials, case history ➤ Complete denture fabrication ➤ Complete Removable partial denture fabrication ➤ Complete Fixed partial denture fabrication ➤ Post & core ➤ Tooth preparation & crow and bridge fabrication ➤ Discussions on implants ➤ Formative assessments |
| 19. | CONSERVATIVE DENTISTRY AND ENDODONTICS | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ Class I & Class II amalgam restorations ➤ Class V GIC restorations ➤ Recording of case history & discussions ➤ Discussion & |



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| | | <ul style="list-style-type: none"> ➤ ionomer cement ➤ Able to diagnose and appropriately treat pulpally involved teeth (pulp capping procedures) ➤ Able to perform RCT for anterior teeth | <ul style="list-style-type: none"> ➤ demonstration for endodontic treatment ➤ Deep caries management- direct & indirect pulp capping ➤ Rubber dam |
| | | <ul style="list-style-type: none"> ➤ Competent to carry out small composite restorations ➤ Understand the principles of aesthetic dental procedures | <ul style="list-style-type: none"> ➤ placement demonstration ➤ Formative assessments ➤ Discussion on dental materials & instruments |
| 20. | ORAL & MAXILLOFACIAL SURGERY | <ul style="list-style-type: none"> ➤ 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 sterilization ➤ 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 | <ul style="list-style-type: none"> ➤ Recording of case history & discussion ➤ Discussion on management of medically compromised patients ➤ Discussion & demonstration on techniques of LA ➤ Discussion on principles of exodontia ➤ Extraction under LA ➤ Discussion on radiographic interpretation of malignancy, impaction & trauma cases ➤ Suturing, alveoloplasty ➤ Assisting in oral surgery procedures- major & minor surgeries ➤ Discussion on medical emergencies & its management ➤ Formative assessments |



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| | | <p>alveolar procedures, simple impaction, biopsy, etc.</p> <ul style="list-style-type: none"> ➤ Competent to assess, prevent and manage common complications that arise during and | |
| | | <ul style="list-style-type: none"> ➤ 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 principals involved in the in-patient management | |
| 21. | PUBLIC HEALTH DENTISTRY | <ul style="list-style-type: none"> ➤ 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. ➤ Administer and hygiene instructions, topical fluoride therapy and fissure sealing. ➤ Educate patients concerning the aetiology and prevention of oral disease and encourage them to assure responsibility for their oral health. | <ul style="list-style-type: none"> ➤ Recording of case histories ➤ Formative assessments ➤ Comprehensive treatment planning ➤ Recording of various incides ➤ Pit & Fissure sealants, fluoride application ➤ Visits to dental camps, primary health care centers ➤ Counseling of patients & oral hygiene instructions |



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