



ARMY COLLEGE OF DENTAL SCIENCES

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NAAC Accredited 'A' & Certified ISO 9001 : 2015 & ISO 14001 : 2015

Summary

Activities in Laboratories

Department of Human Anatomy, Embryology, Histology, Medical Genetics

Anatomy is a branch of medicine that studies the structure and functions of the human body. This branch of medicine specializes in research and practice of histology tissue processing, cadaveric dissection, museum specimen preparation, cytogenetics and cultivation of tissue cultures. It has four different labs for undergraduate learning.

S.No	Name of Laboratory	Activities
1	Cadaver Dissection Laboratory	<ul style="list-style-type: none">• Learning cadaver dissection and anatomical landmarks of the head and neck region• Learning the position of important nerves, blood vessels and other structures of the head and neck region
2	Histology Laboratory	<ul style="list-style-type: none">• Study of the dissected specimens Embryology & histology
3	Osteology Laboratory	<ul style="list-style-type: none">• Study of human skeleton & osteology with muscle attachment
4	Anatomical Specimen Laboratory	<ul style="list-style-type: none">• Spotting and identifying human anatomical structures and specimens

Department Of Human Physiology

Physiology is related to the function of organs and organ systems, and their functioning mechanisms within the body and their response to challenges.

S.No	Name of Laboratory	Activities
1	Physiology Laboratory	<ul style="list-style-type: none">• Enumeration of the red blood cells• Enumeration of the white blood cells• Differential leucocyte counts• Recording of blood pressure• Determination of hemoglobin• Determination of blood groups• Determination bleeding and clotting time.• Recording of blood pressure by palpatory method• Examination of the radial pulse

Department of Biochemistry, Nutrition & Diatics

The Biochemistry department is involved in Undergraduate teaching for medical students. It is a laboratory-based science combining biology and chemistry. Biochemists study the structure, composition, and chemical reactions of substances in living systems and, in turn, their functions and ways to control them.

S.No	Name of Laboratory	Activities
1	Biochemistry Laboratory	<ul style="list-style-type: none">• Qualitative analysis of carbohydrates• Identification of reducing and non-reducing sugars• Color reactions of proteins and amino acids

	<ul style="list-style-type: none"> • General properties of fat and sterols(cholesterol) • Chemistry of bile- test of bile salts & bile pigments • Normal constituents of urine- demonstration • Organic constituents • Inorganic constituents • Abnormal constituents of urine • Analysis of saliva including amylase by qualitative methods • Blood glucose estimation- god/pod method • Serum total protein estimation- biuret method • Urine creatinine estimation demonstration
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Department Of Pharmacology

This is the preclinical department which encompasses drug composition and properties, synthesis and drug design, molecular and cellular mechanisms, organ/systems mechanisms, signal transduction/cellular communication, molecular diagnostics, interactions, chemical biology, therapy, and medical applications and anti-pathogenic capabilities. The two main areas of pharmacology are pharmacodynamics and pharmacokinetics.

S.No	Name of Laboratory	Activities
1.	Pharmacology Laboratory	<ul style="list-style-type: none"> • Preparation of tooth paste • Preparation of tooth powder • Writing of prescription • Paste for dental caries or hypersensitive tooth

		<ul style="list-style-type: none"> • Astringent gum paint • Antiseptic mouth wash • Tooth ache drops • Sodium salicylate mixture • Carminative mixture • Magnesium sulphate mixture • Castor oil emulsion • Liniment of turpentine • Calamine lotion • Whitfield's ointment
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Department Of Microbiology

Clinical microbiology is defined as a branch of science dealing with the interrelation of macro-organisms and microorganisms with their host under normal and pathological conditions along with the dynamics of the infectious process with the aim of arriving at a complete cure through the appropriate use of various antibiotics to inhibit or kill the isolated microorganisms.

S.No	Name of Laboratory	Activities
1.	Microbiology Laboratory	<ul style="list-style-type: none"> • Microscopy- different types, parts, maintenance and usage • Gram staining • Albert staining • ZN staining • Culture media and methods • Widal test • Stool examination • Sterilization and autoclaving • Disinfection • Hand washing techniques • Biomedical waste segregation

Department Of General Pathology

General pathology is a specialty concerned with all aspects of laboratory investigation in health and disease that focuses on the causes, manifestations and diagnosis of disease.

S.No	Name of Laboratory	Activities
1	General Pathology Laboratory	<ul style="list-style-type: none">• Urine-tests for abnormal constituents sugar, albumin, ketone bodies blood bile salts bile pigments• Hemoglobin estimation• Hematocrit value• Total WBC count from peripheral smear• Differential WBC count and commenting on the peripheral smear• Blood grouping• Bleeding and clotting time• ESR• Urine examination• Histopathological specimen<ol style="list-style-type: none">(1) Tuberculosis lymph nodes(2) Squamous cell carcinoma(3) Malignant melanoma(4) Cavernous hemangioma(5) Osteosarcoma(6) LipomaAcute appendicitis

Department of Oral Pathology & Microbiology

Oral and Maxillofacial Pathology is the specialty of dentistry and discipline of pathology that deals with the nature, identification, and management of diseases affecting the oral and maxillofacial regions.

S.No	Name of Laboratory	Activities
1	Dental Anatomy, Embryology & Oral Histology Practical Laboratory	<ul style="list-style-type: none"> • Drawing and wax carving of permanent tooth (same size as a natural tooth) • Microscopic study of tooth germ, enamel, dentin, pulp, periodontal ligament alveolar bone salivary gland oral mucosa including papillae and taste bud. • Teeth carving in large wax blocks (3 times the size of a natural tooth) • Collection of extracted natural teeth
2	Oral Pathology & Microbiology Laboratory	<ul style="list-style-type: none"> • Ground & Stained sections of histological specimens of Oral Diseases

Department of Prosthodontics and Crown & Bridge

The department mainly deals with the replacement of missing teeth and associated structure and thus serves the oral health needs of people by restoring the function of teeth. The department is well equipped with multiple labs which include Pre-clinical lab, Crown and bridge lab, Acrylic lab consisting of sophisticated equipment and material like induction casting machines, Phantom heads.

S.No	Name of Laboratory	Activities
1	Dental Materials Laboratory	<ul style="list-style-type: none"> • Manipulation of gypsum

		<ul style="list-style-type: none"> • Self-cure and heat cure acrylic resin manipulation and curing • Cements-manipulations and studying setting time • Silver amalgam- manipulation, trituration • Plaster of paris cubes – 1 inch • Anatomical landmarks in a plaster model • Impression making in impression compound
2	Pre- Clinical Prosthodontics Laboratory	<ul style="list-style-type: none"> • Preparation of occlusion rims • Orientation of occlusion rims on articulator • Arrangement of teeth Processing of complete dentures
3	Crown and Bridge Laboratory	<ul style="list-style-type: none"> • Tooth preparation for a fixed prosthesis
4	Ceramic & Cast partial Laboratory	<ul style="list-style-type: none"> • Fabrication of Cast Partial Dentures
5	Acrylic Laboratory	<ul style="list-style-type: none"> • Preparation of special trays • Preparation of temporary and permanent denture bases

Department Of Conservative Dentistry and Endodontics

The Department of Conservative Dentistry & Endodontics consists of two specialties Conservative dentistry & Endodontics. Conservative Dentistry deals with the treatment and rehabilitation of diseased, defective or decayed tooth. It also includes Cosmetic / Aesthetic corrections of teeth. Endodontics deals with root canal treatment, endodontic surgery and related treatments.

S.No	Name of Laboratory	Activities
1	Pre-Clinical Conservative Phantom Head Laboratory	<ul style="list-style-type: none"> • Cavity preparation • Restoration of tooth • Base and matrix • Restoration and finishing • Class I amalgam restoration • Class II amalgam restoration
2	Conservative and Endodontics Laboratory	<ul style="list-style-type: none"> • Class I amalgam restoration • Class II amalgam restoration • Class III. and V - composite and GIC restoration • Class IV - composite • Deep caries management • Endodontic cases • Acrylic jacket crowns

Department of Orthodontics & Dentofacial Orthopedics

Orthodontics is a branch of dentistry that treats malocclusion, a condition in which the teeth are not correctly positioned.

S.No	Name of Laboratory	Activities
1	Orthodontics Preclinical Laboratory	<ul style="list-style-type: none"> • Wire bending exercises

Department of Paedodontics and Preventive Dentistry

Division of Paedodontics and Preventive Dentistry deals with diagnosis and treatment of oral and dental diseases in children up to 14 years of age and those with special health care needs

S.No	Name of Laboratory	Activities
1	Paedodontics Preclinical Laboratory	<ul style="list-style-type: none"> • Wire bending exercises • Habit breaking appliances • Removable / Fixed space maintainers

		<ul style="list-style-type: none"> • Root canal treatment on extracted teeth
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Department Of Oral and Maxillofacial Surgery

The department provides training to undergraduates with facilities of Pre-clinical lab, Advanced simulation lab and Basic Life Support lab which improves their surgical skills.

S.No	Name of Laboratory	Activities
1	Oral and Maxillofacial Surgery Laboratory	<ul style="list-style-type: none"> • Suturing techniques • Inter maxillary fixation techniques
2	Advanced Simulation Surgical skills Laboratory	<ul style="list-style-type: none"> • Suturing techniques • Local anesthesia techniques • Osteotomy cuts on human skull • Intravenous/intramuscular (IV/IM) access
3	Basic Life Support laboratory	<ul style="list-style-type: none"> • Airway management • CPR

Department Of Periodontology

The department of Periodontics provides training in suturing skills for flap surgery on dental casts.

S.No	Name of Laboratory	Activities
1	Periodontics Preclinical Laboratory	<ul style="list-style-type: none"> • Different scaling techniques • Tooth brushing techniques • Suturing techniques • Crown preparation on typhodont • Splinting techniques



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Principal

Principal
Army College Of Dental Sciences