Obstetrics & Gynaecology Department

Welcome to the Department of Obstetrics and Gynaecology, GMERS Medical College, Morbi. This page is intended for a brief introduction of the department to the visitors and students.

GOALS:

The Broader Goals of the Department of Obstetrics and Gynaecology, GMERS Medical College, Morbi are:

1) Teaching and training of the undergraduate and postgraduate students

2) Patient Care and service in coherence with the national guidelines and programmes, with the aim for ongoing improvement in the standard of care

3) Research

OBJECTIVES AND UPCOMING AGGRANDIZATIONS:

The department anticipates NMC recognized post-graduate course in Obstetrics and Gynaecology department to commence, in the upcoming years. With the proposed enhanced -blood components and -diagnostic facilities, the department intends to serve its critical care in obstetrics as a final point of care, in sooner times. With the future multidisciplinary advancements in the hospital, the department is determined to expand its operative services in advanced gynecology and urogynecology. The department also aspires to contribute to the research in the advanced science and innovative care of the patients.

PRESENT DEPARTMENTAL SERVICES:

Teaching:

1) Skill and knowledge-based teaching and learning to mould an Indian Medical Graduate compatible to the NMC and global standards

2) Competency based teaching in liaison with the NMC curriculum Click here

3) Skill and evidence-based teaching and learning to the Diploma- CPS students

4) Training and teaching focused on inculcating ethical, respectful, patient-centric and evidence-based service at every point of care

5) Providing wider avenues to the students for research, governance, leadership and innovation

Patient Care services catered are:

1) Obstetric services: Antenatal care, prenatal screening and diagnosis, screening of the high-risk pregnancies, cervical encirclage, vaginal and assisted-vaginal deliveries, operative deliveries- cesarean section and hysterotomy, obstetric hysterectomy. The department serves as a tertiary level referral center for the high-risk pregnancy and delivery cases

2) Reproductive & Sexual Health Services: Provision of contraceptive counselling and services, laparoscopic and abdominal tubal ligation, MTP services, primary evaluation and initial management of infertility cases, diagnosis and management of sexually transmitted infections

3) Gynaecology Services: Cancer screening- Pap smear, VIA, colposcopy, endometrial biopsy, biopsy; diagnosis and management of common gynaecological infections; surgical care – abdominal, vaginal and laparoscopic hysterectomy, surgeries for benign gynaecological conditions; evaluation and treatment of adolescent and menopausal gynaecology problems.

4) Ultrasound services in Obstetrics and Gynaecology

5) Expert care and professional witness services for medicolegal cases

6) Outreach Activities: Screening and referral camps in villages on regular basis.

Research:

Being a newly established medical college in the region, the department is currently involved in the research of understanding the epidemiological trends of the women health in the local region.

Faculty

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Other Staff: - Class-1 Gynaecologist:

Junior Resident Under CPS-DGO Course :- Dr. Dhruv Patel (MBBS), Dr. Vikas Prajapati (MBBS)

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ENT

ENT Department

Overview

- **Goal:**
  Main goal of ENT department is to treat the patients of common ENT problems, treat them surgically if required & restoring patients with hearing impairment with provisional of hearing aids.
- **Objective:**
  - Knowledge
    1. Understand the basic pathophysiology & management of common ENT diseases and emergencies.
    2. Appropriate & judicial use of commonly used drugs in ENT, keeping in mind their adverse reactions.
    3. Perform common investigative procedures and their interpretation.
  - Skill
    1. Examination & Diagnosis of common ENT problems including malignant & premalignant lesions of head & Neck.
    2. Manage ENT problems at level & prompt referral to the tertiary center when required.
    3. Perform minor surgical procedure like ear syringing, ear dressing, nasal packing, removal of foreign bodies from nose & ear.
    4. Assisting in procedure like endoscopies, tracheostomy.

Faculty

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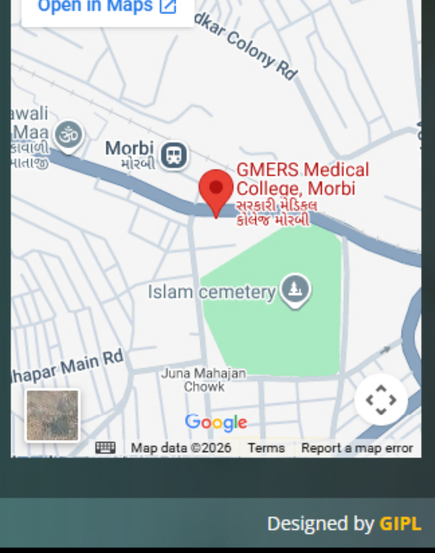

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Pediatrics

Pediatrics Department

Overview

The course includes systematic instructions in growth and development, nutritional needs of a child, immunization schedules and management of common diseases of infancy and childhood, scope of Social Pediatrics and counselling.

GOAL:

The broad goal of the teaching of undergraduate students in Pediatrics is to acquire adequate knowledge and appropriate skills for optimally dealing with major health problems of children to ensure their optimal growth and development.

OBJECTIVES:

- KNOWLEDGE: At the end of the course, the student should be able to:
  - Describe the normal growth and development during fetal life, neonatal period, childhood and adolescence and outline deviations thereof.
  - Describe the common paediatric disorders and emergencies in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation.
  - State age related requirements of calories, nutrients, fluids, drugs etc. in health and disease.
  - Describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents and child abuse.
  - Outline national programmes relating to child health including immunisation programmes.
- SKILLS: At the end of the course, the student should be able to:
  - Take a detailed pediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigative procedures, interpret common laboratory investigation results and plan and institute therapy.
  - Take anthropometric measurements, resuscitate newborn infants at birth, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programs, perform venesection, start an intravenous saline and provide nasogastric feeding.
  - Conduct diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap and ascitic tap.
  - Distinguish between normal newborn babies and those requiring special care and institute early care to all new born babies including care of preterm and low birth weight babies, provide correct guidance and counselling in breast feeding.
  - Provide ambulatory care to all sick children, identify indications for specialized/inpatient care and ensure timely referral of those who require hospitalization.
- INTEGRATION:
  - The training in pediatrics should prepare the student to deliver preventive, promotive, curative and rehabilitative services for care of children both in the community and at hospital as part of a team in an integrated form with other disciplines, e.g. Anatomy, Physiology, Biochemistry, Microbiology, Pathology, Pharmacology, Forensic Medicine, Community Medicine and Physical Medicine and Rehabilitation.

Faculty

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Psychiatry

Psychiatry

Overview

GOAL:

The aim of teaching the undergraduate student in Psychiatry is to impart such knowledge and skills that may enable him to diagnose and treat common psychiatric illnesses. He/she shall acquire competence for clinical diagnosis based on history, physical examination and relevant laboratory investigations and institute appropriate line of management. He/she should also be able to recognize the behavioural manifestations of systemic illnesses.

THERAPEUTIC: An intern must perform or assist in:

a) Diagnose and manage common psychiatric disorders,

b) Identify and manage psychological reactions,

c) Diagnose and manage behavioural disorders in medical and surgical patients.

An intern must have observed or preferably assisted at the following operations/ procedures:

a) ECT administration,

b) Therapeutic counseling and follow-up

Faculty						
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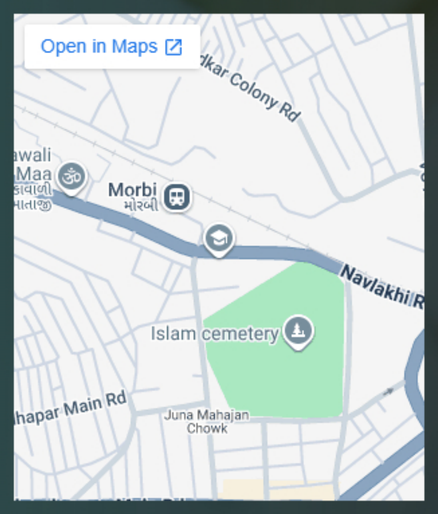

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Dermatology Skin & VD

Dermatology (Skin & VD) Department

Overview

GOAL:

The aim of teaching the undereducated student in dermatology, S.T.D. and Leprology is to impart and skills that may enable him to diagnose and treat common ailments and to refer rare diseases or complications/unusual manifestations of common diseases, to the specialist.

OBJECTIVES:

A) KNOWLEDGE:- At the end of the course of Dermato-S.T.D. and Leprology, the student Shall be able to:

- Demonstrate sound knowledge of common diseases, their clinical manifestations, including emergent situations and of investigative procedures to confirm their diagnosis.
- Demonstrate comprehensive knowledge of various modes of therapy used in treatment of respiratory diseases.
- Describe the mode of action of commonly used drugs, their doses, side-effects/toxicity, indications and contra-indications and interactions;.
- Describe commonly used modes of management including the medical and surgical procedures available for the treatment of various diseases and to offer a comprehensive plan of management for a given disorder.

B) SKILLS:- The student should be able to:

- Interview the patient, elicit relevant and correct information and describe the history in a chronological order.
- Conduct clinical examination, elicit and interpret physical findings and diagnose common disorders and emergencies;.
- Perform simple, routine investigative and office procedures required for making the bed-side diagnosis, especially the examination of scrapings for fungus, preparation of slit smears and staining for AFB for leprosy patients and for STD cases.
- Take a skin biopsy for diagnostic purposes.
- Manage common diseases recognizing the need for referral for specialized care, in case of inappropriateness of therapeutic response.

Faculty

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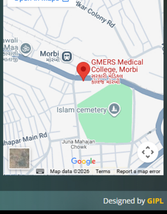

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Medicine

General Medicine Department

Overview

GOAL:

The broad goal of the teaching of undergraduate students in Medicine is to have the knowledge, skills and behavioral attributes to function effectively as the first contact physician.

OBJECTIVES :

At the end of the course, the student should be able to:

- KNOWLEDGE
  1. diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases
  2. outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications
  3. propose diagnostic and investigative procedures and ability to interpret them.
  4. provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.
  5. recognize geriatric disorders and their management

- Skills
  1. develop clinical skills (history taking, clinical examination and other instruments of examination) to diagnose various common medical disorders and emergencies
  2. Refer a patient to secondary and/or tertiary level of health care after having instituted primary care.
  3. Perform simple routine investigations like haemogram, stool, urine, sputum and biological fluid examinations
  4. Assist the common bedside investigative procedures like pleural tap, lumbar puncture, bone marrow aspiration/biopsy and liver biopsy.

- INTEGRATION:
  1. with community medicine and physical medicine and rehabilitation to have the knowledge and be able to manage important current national health programs, also to be able to view the patient in his/her total physical, social and economic milieu,
  2. with other relevant academic inputs which provide scientific basis of clinical medicine e.g. anatomy, physiology, biochemistry, microbiology, pathology and pharmacology

Faculty

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Community Medicine

Community Medicine Department

Overview

Goal: The broad goal of the teaching of undergraduate students in Community Medicine is to prepare them to function as community and first level physicians in accordance with the institutional goals.

Objectives: During the training, students should acquire knowledge and skills so that he can practice the community medicine after the graduation. After the completion of training, student will acquire the following knowledge and skills

- KNOWLEDGE
  The student shall be able to:
  - Explain the principles of sociology including demographic population dynamics;
  - Identify social factors related to health, disease and disability in the context of urban and rural societies;
  - Appreciate the impact of urbanization on health and disease;
  - Observe and interpret the dynamics of community behaviour;
  - Describe the elements of normal psychology and social psychology;
  - Observe the principles of practice of medicine in hospital and community setting;
  - Describe the health care delivery system including rehabilitation of the disabled in the country;
  - Describe the National Health Programmes with particular emphasis on maternal and child health programs, family welfare planning and population control.
  - List epidemiological methods and describe their application to communicable and non-communicable diseases in the community or hospital situation.
  - apply biostatistical methods and techniques;
  - Outline the demographic pattern of the country and appreciate the roles of the individual, family, community and socio-cultural milieu in health and disease.
  - Describe the health information systems.
  - Enunciate the principles and components of primary health care and the national health policies to achieve the goal of 'Health for All'.
  - Identify the environmental and occupational hazards and their control.
  - describe the importance of water and sanitation in human health
  - To understand the principles of health economics, health administration, health education in relation to community.

- SKILLS
  At the end of the course, the student should be able to make use of:
  - Principles of practice of medicine in hospital and community settings and familiarization with elementary nursing practices
  - Art of communication with patients including history taking and medico-social work
  - Use epidemiology as a scientific tool to make rational decisions relevant to community and individual patient intervention
  - Collect, analyse, interpret and present simple community and hospital based data
  - Diagnose and manage common health problems and emergencies at the individual, family and community levels keeping in mind the existing health care resources and in the context of the prevailing socio-cultural beliefs.
  - Diagnose and manage maternal and child health problems and advise a couple and the community on the family planning methods available in the context of the national priorities.
  - Diagnose and manage common nutritional problems at the individual and community level.
  - Plan, implement and evaluate a health education programme with the skill to use simple audio-visual aids.
  - Interact with other members of the health care team and participate in the organization of health care services and implementations of national health programmes.
- Integration
  Time to time as and when required there is integrated teaching for overall knowledge and skill development for particular area.

Teaching of community medicine should be both theoretical as well as practical. The practical aspects of the training programme should include visits to the health establishments and to the community where health intervention programmes are in operation.

Details of subject to be covered:

- History of Public Health in global and Indian contexts, evolution of health care,
- Concept of health and diseases, disease and health profile of developed & developing countries, Levels of prevention and modes of interventions
- Epidemiology both general and systemic covering various communicable and non communicable diseases especially those which are of importance in Indian context,
- Concept of screening and its practical applications,
- Various national health programs of India,
- Biostatistics, vital statistics, demography,
- Nutrition its role in health
- Social sciences in health and diseases, family its functions and role in health & disease, cultural factors influencing health
- Physical Environment and health
- Hospital waste management
- Occupational health for both organized and unorganized industries, related legislations
- Reproductive and child health – Preventive & Social Pediatrics, Social Obstetrics, Family Planning and related legislations,
- Genetic diseases especially of public health importance, prevention of their transmission
- Mental health
- Communication and Health education
- Health planning and management, public health administration,
- 1Concept & evolution of health care of community
- International agencies in Health sector

Faculty

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Forensic Medicine

Forensic Medicine Department

Overview

Goals :-

The broad goal of the teaching of undergraduate students in Forensic Medicine is to produce a physician who is well informed about medicolegal responsibilities in practice of medicine. He/She will also be capable of making observations and inferring conclusions by logical deductions to set enquiries on the right track in criminal matters and connected medicolegal problems. He/She acquires knowledge of law in relation to medical practice, medical negligence and respect for codes of medical ethics.

Objectives :-

At the end of the course in Forensic Medicine, the learner shall be able to:-

- Identify, examine and prepare report or certificate in medico-legal cases/situations in accordance with the law of land.
- Perform medico-legal postmortem examination and interpret autopsy findings and results of other relevant investigations to logically conclude the cause, manner and time since death.
- Be conversant with medical ethics, etiquette, duties, rights, medical negligence and legal responsibilities of the physicians towards patients, profession, society, state and humanity at large.
- Be aware of relevant legal/court procedures applicable to the medicolegal/ medical practice.
- Preserve and dispatch specimens in medico-legal/postmortem cases and other concerned materials to the appropriate Government agencies for necessary examination.
- Manage medico-legal implications, diagnosis and principles of therapy of common poisons.
- Be aware of general principles of environmental, occupational and preventive aspects of toxicology.

Subject Curriculum

(A)FORENSIC MEDICINE

- Legal procedure and inquests. Criminal, Civil, TADA and POTA courts and their power. Medical evidence, Medico-legal reports, Dying declaration; medical witness and evidence in courts, Consumer. Disputes redressal forum at district and national level (if possible the student should be taken to the courts when the teacture are on the courts duty to introduce them to the element of legal aspects of medicine.)
- Identity of living and dead; Determination of sex, age and their medico-legal aspect; DNA finger printing and superimposition technique for indentification.
- Medico-legal post mortem examination ; related rules and regulation etc....., examination of the decomposed and mutilated bodies, fragment and bone examination. Exhumation.
- Examination of blood stains, saliva and seminal stains, hair, weapon and clothes etc. Role of forensic science laboratories in crime detection.
- Mode and time since death; Presumption of death and survivorship. Concept of nrain death and its relation to tissue donation and transolanation.
- Violent death from asphyxia. Hanging, strangulation, throttling, suffocation and Drowning.
- Forensic histopathology and its uses in crime detection. Use of photography and vodeography in forensic practice.
- Deaths from starvation, cold, heat burns, electricity and lightening.
- Mechanical injuries, classification if injuries; Regional injuries; Examination and Reporting of injuries; Medical legal aspect of injuries; different type of weapons and their medico legal significance; air craft injuries.
- Impotence, sterility, virginity, pregnancy and delivery; MTP act, criminal abortion aborcificant and medico legal aspects.
- Sexual offence, rape, Unnatural sexual offence, Sexual perversions etc.
- Infanticide and Battered baby syndrome.
- Narco analysis.
- Truth serum.
- Lie detection test.
- Medico legal aspects of AIDS.

(B) LAW IN RELATION TO MEDICAL MEN, FORENSIC PSYCHIATRY

- Law and ethics in th2 conduct of medical practitioner, certificates, infamous conduct, Processional secrets and Previliged communications, Medical negligence. Voluntary and compulsory duties of medical practitioner, Medical Council of India and State medical Council; Consumer Protection act in relation to medical practitioners, Law in relation to Medical Officers practicing and serving and in rural areas and Primary / Community Health centers, Prohibition of sex selection Act 1994 (PNDT Act 1994), female feticide.
- Medico-legal aspects of Insanity, Civil and Criminal Responsibilities; Use of Lie Detector in Crime detection.
- Introduction of Human Rights. Custodial of Medical men in cases of violation of Human rights, torture to women, deaths to dowry etc.

(C) TOXICOLOGY

- General considerations of poisons in relation to different Acts. Classification of poisons. Actions of poisons etc., its diagnosis, treatment and postmortem appearances of different poisoning cases. Duties of medical officer in a suspected poisoning case; Rules of Forensic Science Laboratory in poisoning cases; Medico-legal aspects of common human, cattle and arrow poisons.
- Detailed study of Acids, sulfuric, hydrochloric, Oxalic, Carbolic (including Cresols etc.,) and salicylic acid. Alkalis Sodium, Potassium and Calcium Salts. Ammoniac Salts.
- Inorganic Irritants: castor, Croton, Abrus, Ergot, Capsicum, Calotropic, Plumbigo, Oleander, Marking nut, Cerbera, Nerium etc., irritants of animal origin including Snakes, scorpion, poisonous insects and
- Organic Irritants: Castor Croton, Abrus, Ergot, Capsicum, Calotropic, Plumbago, Oleander, Marking nut, Cerbera, Nerium etc., irritants of animal origin including Snakes, scorpion, poisonous insects and mechanical irritants.
- Neurotic Poisons, Opium, Alcohols, Aniline Compound, Barbiturates, Kerosene and Petrol, Dhatura, Atropine Cannabis, Cocaine, Nux vomica, Mendrax, Diazepoxide etc.
- Drug causing dependence, N.D.P.S. Act, introduction and contents in brief, drug abuse, treatment and rehabitilation of drug addiction, Nicotine, Gutha eating etc.
- Some poisons like war gases, carbondioxide and carbon monoxide, methane, quinine, eyanides. Conium and Curare, Common arrow poisons etc.
- Industrial poisonings, Environmental toxicology and Medico-legal aspects, prevention of different pollutants, Organic gases like Methane, Hydrogen sulfide etc. Use of insecticides and pesticides, their medico-legal aspects, preventive measures.
- Anaesthetic agents, medico-legal aspects, of deaths related to anaesthesia; Common surgical procedures and their medico-legal aspects, deaths related to operative procedure; deaths and disabilities following medical and surgical procedures.

Faculty

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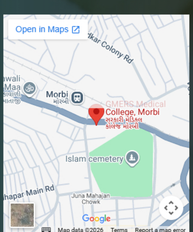

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Department of Microbiology

- **GOAL**

  The broad goal of the teaching of undergraduate students in Microbiology is to provide an understanding of the natural history of infectious disease in order to deal with the etiology, pathologenesis, laboratory diagnosis, treatment and control of infections in the community.

- **OBJECTIVES**
  - **KNOWLEDGE**

    At the end of the course, the student should be able to:

    1. State the infective micro-organisms of the human body and describe the host parasite relationship.
    2. List pathogenic micro-organisms (bacteria, viruses, parasites, fungi) and describe the pathogenesis of the diseases produced by them.
    3. State or indicate the modes of transmission of pathogenic and opportunistic organisms and their sources, including insect vectors responsible for transmission of infection.
    4. Describe the mechanisms of immunity to infections.
    5. Acquire knowledge on suitable antimicrobial agents for treatment of infections and scope of immunotherapy and different vaccines available for prevention of communicable diseases.
    6. Apply methods of disinfection and sterilization to control and prevent hospital and community acquired infections.
    7. Recommend laboratory investigations regarding bacteriological examination of food, water, milk and air.

  - **SKILLS**

    At the end of the course, the student should be able to:

    1. Plan and interpret laboratory investigations for the diagnosis of infectious diseases and to correlate the clinical manifestations with the etiological agent.
    2. Identify the common infectious agents with the help of laboratory procedures and use antimicrobial sensitivity tests to select suitable antimicrobial agents.
    3. Perform commonly employed bed-side tests for detection of infectious agents such as blood film for malaria, filaria, gram staining and AFB staining and stool sample for ova cyst.
    4. Use the correct method of collection, storage and transport of clinical material for microbiological investigations.

  - **INTEGRATION**

    The student should understand infectious diseases of national importance in relation to the clinical, therapeutic and preventive aspects.

Subject Curriculum

Competencies to be acquired in Microbiology: Click here
Curriculum: Click here

Department of Microbiology

No	Name	Designation	Qualification	Registration No	Photograph	E-Mail ID
1	Dr. Nirajkumar Biswas	I/C Dean & Professor	MBBS, MD	G-30926		dr.nirajbiswas@yahoo.com
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3	Dr. Nidhi Sardava	Senior Resident	MBBS, MD	G-66154		pnidhi373@gmail.com
4	Dr. Mitsu Parsania	Senior Resident	MBBS, MD	G-71346		parsaniamitsu@gmail.com
5	Dr. Kishan Chandrala	Tutor	MBBS	G-72712		kishan.chandrala@gmail.com
6	Dr. Dhruvi Sardava	Tutor	MBBS	G - 94308		dhruvisaradava@gmail.com
7	Dr. Jaykumar Fultariya	Tutor	MBBS	G-100633		jayfultariya1@gmail.com

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No	Name	Designation	Qualification	Registration No	Photograph	E-Mail ID
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Pathology

Pathology Department

To know basic of disease & pathology and understand the theories, we must have to comprehend the structure. In same way, the study of Pathology is better integrated functionally as well as vertically or not only with other basic sciences, but other clinical courses as we like. The department is also to help and acquire more interest in the needs of students. With addition of digital media, our interest are never advances in aids to teach Pathology that include incorporation of those dimensional models, imaging techniques, multimedia, virtual laboratories, simulated patient management and multi-media classrooms teaching. With all these modalities, we highlight on one thing and that is the personal touch of Pathology, to medicine. We cannot hope to marvel the effects of disease processes relieve first learning the structure and then its function.

Our Goal:

To make students understand the scientific basis of the life processes at the molecular level and to orient them towards the application of the knowledge acquired in solving clinical problems.

OBJECTIVES: To acquire knowledge and develop skills as under

A) Knowledge : 1. Describe the structure and ultrastructure of a sick cell, mechanisms of cell degeneration, cell death and repair and be able to correlate structural and functional alterations.

2. Explain the pathophysiological processes which govern the maintenance of homeostasis, the clinical disturbance and the morphological and clinical manifestations associated with it

3. Describe the mechanisms and patterns to tissue response to injury such that she/he can appreciate the pathophysiology of disease processes and their clinical manifestations.

4. Correlate normal and altered morphology (gross and microscopic) of different organ systems in common diseases to the extent needed for understanding of disease processes and their clinical significance.

b) Skill: 1. Describe the rationale and principles of technical procedures of the diagnostic laboratory tests and interpretation of the results;

2. Perform the simple bed side tests in blood, urine and other biological fluid samples;

3. Collect, preserve and transport appropriate clinical material at diagnosing and managing the cases of common disorders;

4. Understand biochemical basis of pathological processes that occur as a result of a disease in subsequent correlation with pre-clinical departments

DEPARTMENTAL FACILITY

BUILDINGS :

(i) Demonstrationroom:
a) Number 3
b) Accommodation Size
1) 73.00 sq m
2) 73.00 sq m
3) 73.00 sq m

Capacity:
1) 25 students
2) 25 students
3) 50 students

c) Audio-Visual equipment available: Yes

LIST OF THEORY TOPICS

1.	Introduction to Pathology
2.	Cell Injury and Adaptation
3.	Amyloidosis
4.	Inflammation
5.	Healing and repair
6.	Hemodynamic disorders
7.	Neoplastic disorders
8.	Basic diagnostic cytology
9.	Immunopathology and AIDS
10.	Infectious and Infestations
11.	Genetic and paediatric diseases
12.	Environmental and nutritional diseases
13.	Introduction to haematology
14.	Microcytic anemia
15.	Macrocytic anemia
16.	Hemolytic anemias
17.	Aplastic anemias
18.	Leukocyte disorders
19.	Lymph node and spleen
20.	Plasma cell disorders
21.	Hemorrhagic disorders
22.	Blood banking and transfusion
23.	Clinical Pathology
24.	Gastrointestinal tract
25.	Hepatobiliary system
26.	Respiratory system
27.	Cardiovascular system
28.	Urinary Tract
29.	Male Genital Tract
30.	Female Genital Tract
31.	Breast
32.	Endocrine system
33.	Bone and soft tissue
34.	Skin
35.	Central Nervous System
36.	Eye

LIST OF CLINOPATHOLOGY PRACTICAL

Practical No.	Topics
1	Collection of blood
2	Microscopic exam, parts and uses
3	Perform, Identify and describe cell hemocytometer
4	Perform, Identify and describe the peripheral blood picture in anaemia
5	Identify and describe the peripheral smear in microcytic anaemia
6	Identify and describe the peripheral blood smear of normocytic anemia.
7	Prepare peripheral smear and identify hemolytic anemia and its types
8	Enumerate the indications, describe principles, ssssssssss and demonstrate the steps of compatibility testing
9	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a pseudo urine sample
10	Describe and interpret the abnormalities in a pseud combining renal function tests
11	Describe and interpret the abnormalities in a pseud combining renal function tests
12	Describe and interpret the abnormalities in a pseud combining renal function tests
13	Identify the etiology of meningitis' bas on given CSF parameters

LIST OF HISTOPATHOLOGY PRACTICAL

LAYOUT OF

Practical No.	Topic
1	Study of cells, tissues and fixatives
2	Gross Description of specimens
3	Processing of tissue in histopathology laboratory
4	Section cutting technique
5	Introduction to Staining
6	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens
7	Identify and describe amyloidosis in a pathology specimen
8	Identify and describe acute and chronic inflammation in gross and microscopic specimens
9	Identify and describe the gross and microscopic features of infection in pathologic specimens
10	Observe a diagnostic cytology & It's staining and interpret the findings
11	Identify and describe the pathological and pathologic of tumors
12	Identify and describe the pathological features of hyperplasia in a gross and microscopic specimen
13	Identify and describe features of Hodgkin's lymphoma in a gross and microscopic specimen
14	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of the leiomyoma and leiomyosarcoma
15	Describe and identify the morphological and microscopic features of various stages of breast cancer
16	Describe, distinguish and describe common tumors of skin

LIST OF EQUIPMENTS:

DEPARTMENT OF PATHOLOGY
GMERS MEDICAL COLLEGE & CIVIL HOSPITAL, MODEL
LIST OF EQUIPMENTS

SR. NO	EQUIPMENTS NAME	QUANTITY
1	Fire Extinguisher	1
2	Automated Hematology Analyzer (3 Part)	1
3	Automated Biochemistry Analyzer	1
4	Microscope (Binocular) With Camera	1
5	Hunter's Centrifuge with Rod and White Plastics	90
6	Balance, Chemical with weights	2
7	Water Bath (Three Chamber)	1
8	Water bath (Tissue Flotation)	1
9	Microtomes	1
10	Hot Air Oven	1
11	Stop watch digital with 1/5 second	5
12	Staining jars for slides	60
13	Centrifuge tubes graduated	60
14	Dropping bottles (For Stockers)	100
15	Refrigerator	1
16	UPS/ Inverter	1
17	COMPO SCALE	1
18	PETTARS ARTARI ROOM GMS	1
19	LED BINOCULAR MICROSCOPES-(FOR STUDENTS)	60

LIST OF CHARTS:

GMERS MCP/PATHO/CHART – 1/2021	Chronic Inflammation
GMERS MCP/PATHO/CHART – 2/2021	Giant Cell Tumor
GMERS MCP/PATHO/CHART – 3/2021	Non-Insulin-Dependent Diabetes Mellitus
GMERS MCP/PATHO/CHART – 4/2021	Infective Endocarditis
GMERS MCP/PATHO/CHART – 5/2021	Carcinoid The Small Intestine, Adenocarcinoma
GMERS MCP/PATHO/CHART – 6/2021	Viral Pneumonia
GMERS MCP/PATHO/CHART – 7/2021	Dilated (Congestive) Cardiomyopathy
GMERS MCP/PATHO/CHART – 8/2021	Cervical Cancer: Gross and Types
GMERS MCP/PATHO/CHART – 9/2021	Chronic Osteomyelitis
GMERS MCP/PATHO/CHART – 10/2021	Endometrial Endometritis and Tuberculous Endometritis
GMERS MCP/PATHO/CHART – 11/2021	Cholecystitis.
GMERS MCP/PATHO/CHART – 12/2021	Infective Endocarditis
GMERS MCP/PATHO/CHART – 13/2021	Chronic Hepatitis
GMERS MCP/PATHO/CHART – 14/2021	Pneumoconiosis
GMERS MCP/PATHO/CHART – 15/2021	Peptic Ulcers
GMERS MCP/PATHO/CHART – 16/2021	Anemias of Deficient Hematopoiesis
GMERS MCP/PATHO/CHART – 17/2021	Systemic Lupus Erythematosus
GMERS MCP/PATHO/CHART – 18/2021	Cholelithiasis: complications
GMERS MCP/PATHO/CHART – 19/2021	Amyloidosis of the Liver
GMERS MCP/PATHO/CHART – 20/2021	Hodgkin Disease
GMERS MCP/PATHO/CHART – 21/2021	Lichen Planu and Psoriasis
GMERS MCP/PATHO/CHART – 22/2021	Systemic Lupus Erythematosus/SLE
GMERS MCP/PATHO/CHART – 23/2021	Squamous Cell Carcinoma
GMERS MCP/PATHO/CHART – 24/2021	Renal Amyloidosis
GMERS MCP/PATHO/CHART – 25/2021	Hereditary/Anemias
GMERS MCP/PATHO/CHART – 26/2021	Hypersensitivity reactions
GMERS MCP/PATHO/CHART – 27/2021	Atherosclerosis, Thrombosis, and Embolism
GMERS MCP/PATHO/CHART – 28/2021	Duodenal Ulcers.
GMERS MCP/PATHO/CHART – 29/2021	Shock
GMERS MCP/PATHO/CHART – 30/2021	Diabetic Nephropathy: Renal Pathology
GMERS MCP/PATHO/CHART – 31/2021	Atherosclerosis
GMERS MCP/PATHO/CHART – 32/2021	Rheumatic Heart Disease
GMERS MCP/PATHO/CHART – 33/2021	Benign Essential Hypertension
GMERS MCP/PATHO/CHART – 34/2021	Infective Endocarditis: Advanced Lesions
GMERS MCP/PATHO/CHART – 35/2021	Sarcoidosis
GMERS MCP/PATHO/CHART – 36/2021	Rheumatic Heart Disease
GMERS MCP/PATHO/CHART – 37/2021	Acquired Anemias
GMERS MCP/PATHO/CHART – 38/2021	Chronic Obstructive Pulmonary Disease
GMERS MCP/PATHO/CHART – 40/2021	Anthrax
GMERS MCP/PATHO/CHART – 41/2021	Acute Inflammation
GMERS MCP/PATHO/CHART – 42/2021	Degeneration
GMERS MCP/PATHO/CHART – 43/2021	Alcoholism.
GMERS MCP/PATHO/CHART – 44/2021	Colloid goiter
GMERS MCP/PATHO/CHART – 45/2021	Typhoid Fever
GMERS MCP/PATHO/CHART – 46/2021	Leiomyoma (fibroid)
GMERS MCP/PATHO/CHART – 47/2021	Basel Cell Carcinoma
GMERS MCP/PATHO/CHART – 48/2021	Carcinomas of the Stomach
GMERS MCP/PATHO/CHART – 49/2021	Rheumatic Fever
GMERS MCP/PATHO/CHART – 50/2021	Adult Respiratory Distress Syndrome
GMERS MCP/PATHO/CHART – 51/2021	Hemolytic Failure Anemias: Hypoproliferative Hypersideremia
GMERS MCP/PATHO/CHART – 52/2021	Adult acquired immunodeficiency syndrome
GMERS MCP/PATHO/CHART – 53/2021	Chronic Renal Failure
GMERS MCP/PATHO/CHART – 54/2021	Acute Viral Hepatitis
GMERS MCP/PATHO/CHART – 55/2021	Insulin-Dependent Diabetes Mellitus
GMERS MCP/PATHO/CHART – 57/2021	Benign Fibroadenoma and Intracystic Papilloma
GMERS MCP/PATHO/CHART – 58/2021	Pathophysiology of Heart Failure
GMERS MCP/PATHO/CHART – 59/2021	Cell Injury
GMERS MCP/PATHO/CHART – 60/2021	Leukocytosis, Lymphocytosis
GMERS MCP/PATHO/CHART – 61/2021	Emphysema
GMERS MCP/PATHO/CHART – 62/2021	Nephrotic Syndrome: Pathology
GMERS MCP/PATHO/CHART – 63/2021	Amyloidosis
GMERS MCP/PATHO/CHART – 64/2021	Malignant Tumors of the Kidney
GMERS - MCP/PATHO / CHART – 65/2021	Bacterial Pneumonias
GMERS MCP/PATHO/CHART – 66/2021	Ulcerative Colitis
GMERS MCP/PATHO/CHART – 67/2021	Hypertrophy and Hyperplasia
GMERS MCP/PATHO/CHART – 68/2021	Crohn Disease
GMERS MCP/PATHO/CHART – 69/2021	Hepatocellular Carcinoma
GMERS - MCP/PATHO / CHART – 70/2021	Autoethanz
GMERS - MCP/PATHO / CHART – 71/2021	Pyelonephritis
GMERS - MCP/PATHO / CHART – 72/2021	Apoptosis & Necrosis
GMERS - MCP/PATHO / CHART – 73/2021	Non-Hodgkin Lymphoma: Microscopic view
GMERS - MCP/PATHO / CHART – 74/2021	The Kidney in Hypertension: Benign and Malignant
GMERS - MCP/PATHO / CHART – 75/2021	Portal Hypertension
GMERS - MCP/PATHO / CHART – 76/2021	Malignant Phase of Essential Hypertension: Renal Pathology
GMERS - MCP/PATHO / CHART – 77/2021	Acute and Subacute Myocardial Infarcts
GMERS - MCP/PATHO / CHART – 78/2021	Nodular Hyperplasia Benign prostatic Hyperplasia
GMERS - MCP/PATHO / CHART – 79/2021	Carcinogenesis
GMERS MCP/PATHO / CHART – 80/2021	Nephrotic Syndrome: Pathology
GMERS MCP/PATHO / CHART – 81/2021	Systematic Demoid Lupus and Solid Sarcoma

Department of Pathology

No	Name	Designation	Qualification	Registration no(UG)	Photograph	Contact
1	Dr. Tejas Subodhchandra Chokshi	HOD & professor	M.D. Pathology	G-21461		drtejaschokshi128@gmail.com
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5	Dr. Kapil Mansukhlal Baveriya	Assistant Professor	M.D. Pathology	G-38355		drkapsbaveriya20@gmail.com
6	Dr. Kanagara Komalben Parthibai	Tutor	M.D. Pathology	G-58609		dr.komaljivani@gmail.com
7	Dr. Kinjal Manthan Bavishiya	Tutor	DCP, DNB Pathology	G- 47333		berakinjal@gmail.com

Pharmacology Department

Overview

PREAMBLE:

Pharmacology isabout treating the patients with the required medications, at the right dose,for the right duration and at an appropriate cost. The knowledge of themolecular basis of drug action, the adverse effects caused by the medications,its prevention and treatment and the effects of administering two or more drugsto a patient will be learnt in the context of its clinical application and notjust as facts. The emphasis is on clinical relevance of pharmacologicalknowledge.

GOALS:

The broad goalof Pharmacology curriculum is to equip the Indian Medical Graduate (IMG) withthe knowledge of scientific basis of therapeutics and the skills of rationalprescribing during the second year of MBBS.

OBJECTIVES:

- Knowledge: At the end ofthe course the student should be able to:
  - Describe thepharmacokinetics and Pharmacodynamics of essential and commonly used drugs
  - Apply theknowledge of indications, contraindications, interactions and adverse reactionsof commonly used drugs in therapeutics
  - Describe theprinciples of prescribing and calculate the dosage in special medicalsituations such as pregnancy, lactation, children, elderly and patients withrenal dysfunction
  - Describe thebasis of Evidence Based Medicine
  - Apply the conceptof rational drug therapy and P drugs in clinical pharmacology
  - Describe theclinical presentation, diagnosis and management of common poisonings,insecticides, common sting and bites
  - Describe drugsof abuse and the process of de-addiction
  - Describe thephases and the regulations involved in the development and introduction of newdrugs
  - Explain theconcepts and clinical relevance of Essential medicines, Fixed dosecombinations, Over the counter drugs, Herbal medicines, dietary supplements andnutraceuticals
  - Describeoccupational and environmental pesticides, food adulterants, pollutants andinsect repellents
- Skills: At the end ofthe course the student should be able to:
  - Write a rationalprescription for a given condition and communicate the same to the patient
  - Recognize andreport an adverse drug reaction of commonly used medications
  - Demonstrate theeffects of drugs on blood pressure through computer aided learning and interpretthe graph
  - Perform acritical evaluation of the drug promotional literature
  - Administer drugsthrough various routes in a simulated environment
- Ethics, Attitude and Communication: At the end ofthe course the student should be able to:
  - Communicateeffectively with the patient with regards storage and use of common medications
  - Explain to thepatients the right way to use the various drug formulations
  - Communicate theimportance of adherence to medications and motivate the patients
  - Demonstrate anunderstanding of the legal and regulatory aspects of prescribing medications.
  - Understand andfollow the ethical principles involved in prescribing medications.

Faculty

No	Name	Designation	Qualification	Registation no(UG)	Photgraph	Contact
1	Dr. Dinesh Chavda	Professor	MBBS , MD	G-37927		drdineshchavda@yahoo.com
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3	Dr. Arun Keshwala	Assistant Professor	MBBS,MD	G – 52289		keshwala.arun269@gmail.com
4	Dr. Riddhi Hirpara	Assistant Professor	MBBS,MD	G- 60951		hirparariddhi7@gmail.com
5	Dr. Zeel Nimavat	SENIOR RESIDENT	MBBS, MD	G-72363		zeelnimavat007@gmail.com
6	Dr. Pranchi Mehta	SENIOR RESIDENT	MBBS, MD	G-73808		prachi.mehta3300@gmail.com
7	Dr.Jay Jakasaniya	SENIOR RESIDENT	MBBS	G-100577		jayjaka12555@gmail.com
8	Dr Rinkal Bhoraniya	Tutor	MBBS	G- 90044		rinkalbhoraniya009@gmail.com
9	Dr Meera Bhimani	Tutor	MBBS	G- 98269		meerabhimani22102000@gmail.com

PHYSIOLOGY DEPARTMENT

Overview

Message from the HEAD of the Department

Welcome to the Department of Physiology

The Physiology department is an intellectually vibrant place.

This Departmental page is designed to introduce visitors and students to our Department, its research, teaching, and administrative activities. It also serves as a major mechanism of communication between the Department and our students and administrative staff.

Physiology is the study of how the body works in health and disease at all levels including molecular, genomic, proteomic, ionic, cellular, organ and whole organism. The essence of research and teaching in Physiology requires an enquiring mind anchored on a global and integrative perspective to the understanding of how things work in a living organism.

Department was established in 2022 with annual intake capacity of 100 students and has infrastructure adequate to cater the need of 100 admissions per year.

The Department of Physiology at GMERS Medical College, Morbi is committed to excellence in teaching, research and service. Members of the faculty are actively involved in educational programs for undergraduate students. The Department of Physiology is responsible for teaching Physiology to undergraduate students of the Medical College. Members of the faculty of the Department of Physiology are involved in collaborative research with the Departments of Medicine, Surgery, and Paediatrics in the College.

We are committed to help equip and infuse in our students a life-long love for learning, the excitement of discovery and a keen sense of curiosity about the chemical, physical and biological functions of life.

I welcome you to the Department and do not hesitate to see me over any issues. We operate an open door policy. Also all academic staff members have office hours during which they are available for consultation and discussion outside the formal teaching sessions.

I wish you a rewarding and stimulating learning experience at the Department of Medical Physiology and the GMERS Medical College,Morbi.

Head of the Department

Incumbency Chart of Professor & Head, Department of Physiology

Sr No	Name	From	To
1	Dr. Rajesh Mohan	30/07/2022	29/11/2022
2	Dr. Jasmin Parmar	29/11/2022	29/11/2023

Infrastructure & Facilities

DEPARTMENT OF PHYSIOLOGY INFRASTRUCTURE

(i)	Demonstration Room:		Available (as per MCI norms)
	a)	Number	1
	b)	Accommodation	
		- Size (of with demonstration room)	Adequate
		- Capacity	50 students
	c)	Audio-Visual equipment Available	Available Overhead Projector Multimedia Projector Multimedia Computers, Public address System in Lecture Theatre,

(ii)	Practical Laboratories :			
			Haematology Laboratory	Clinical Physiology Laboratory
	a)	Accommodation		
		- Size	140 Sq. M	140 Sq. M
		- Capacity	50	50
	b)	Working arrangement		
		- Seats available	50	50
		- Water supply	Yes	Yes
		- Sinks	Yes	Yes
		- Electric points	Yes	Yes
	c)	Cupboard for storage of microscope, slides etc.	Cupboard- 5 iron rack 2	3
	d)	Main equipment available		
	e)	Number of Microscopes	60	
	f)	No. of students to each Microscope	One Each	
	g)	Preparation room		
		Size	14 Sq. M	
		Location	In the laboratory	
	h)	Whether Laboratory Manuals kept by students	Yes	Yes
	i)	Close circuit TV /demonstration Microscope/ any other teaching aids	Overhead Projector Multimedia Projector, Multimedia Computers, Laptop, CD writers, DVD writers, Camera attachment for Microscope to project slides on screen	
			Charts & Photographs	

(iii)	Departmental Library cum Seminar Room:		
	a)	Is there a separate departmental library?	NO
(iv)	Research Laboratory : NO		
	a)	Are there any students taken for M.D.or Ph. D in Physiology?	No

(v) OFFICE ACCOMODATION: available as per MCI norms

a)	Professor & H.O.D.	22 Sq. M
b)	Associate Professor /Readers	1 room
c)	Asst. Professors/Lecturers	1 room
d)	Tutors/Demonstrators	1 room
e)	Non-teaching and Clerical Staff	1 room

Department of Physiology (Main instruments available in Labs)

SR NO	NAME OF THE EQUIPMENT	NO.
1	Microscopes, oil immersion	58
2	Demonstration eye piece	3
3	Double demonstration eye piece	3
4	Stage micrometer	3
5	Sklessinger's pipette for E.S.R. on standardh space pipettes	20
6	Wintrobe's pipette for ESR and PCV with stand	20
7	Hemoglobin meter SahI's or Hellige (with spares)	60
8	Haemocytometer	59
9	R'uning fork time marker 100/sec	2
10	Electrodes	2
11	Spirit lamps	2
12	Mariy's tambour	2
13	Perimeter Prinsely Smith SLP 984 B & T	0
14	Sphygmomanometer (digital/Mercury based instruments to be replaced with suitable alternatives)	0
15	Stethoscopes	60
16	Stethoscopes, demonstration with multiple ear pieces	2
17	Phylgraphs	1
18	Venous pressure apparatus	1
19	Hjronometr, ordinary	0
20	Eye analyzis apparatus, Haldein's student type	00
21	Van Slyke's apparatus manometric	30
22	Sherrington Starling kymograph (electrically driven)	2
23	Eye analyzer automatic for CCG, ICG, NC	60
24	Low voltage unit for supply to all exits for stimulation	2
25	Electromagnetic time marker	2
26	Douglas bag, complete	1
27	Basal metabolism apparatus	0
28	Meloscil kymograph	8
29	Clinical thermometer	55
30	Compass aesthesiometer	20
31	Thermo-aesthesiometer	0
32	Alligometer	0
33	Appparatus for pressure movement	0
34	Mee hammer	30
35	Otoscopugh	0
36	Bicycle Ergometer	1
37	Dfa tometer	1
38	Ophthalmoscope	2
39	Schiotz eye	1
40	Pathoscope	00
41	Perimeter with charts (Lister's)	2
42	Color perception tanson-Edridge green	1
43	Medela rod	00
44	Newtons color wheel	1
45	Tuning fork to test hearing 52-10000 (cycle/s 100, 256, 512 Hz)	30
46	Vernometer	1
47	Otoscope	1
48	Stop watch	15
49	Multi channel Physiograph, 3 channels, complete with accessories	2
50	Student physiograph, single channel with accessories	9
51	Centrifuge, high speed with technometer	0
52	Colorimeter, photoelectric	1
53	Myograph stand	0
54	pH meter electric	1
55	Electronic stimulator	1
56	Thermometers, balances, microslides and glassware	As required
57	Digital Physiograph	1
58	ECG Machine	00

No.	Chemicals	Quantity
1	Distilled water	10 lit
2	WBC fluid (Turk's fluid)	10 bottle
3	RBC Fluid (Hayem' fluid)	10 bottle
4	N/10 HCl	5 NOS
5	Leishman's stain	10 NOS
6	Acetic Acid 2500 ML	5 NOS
7	Blood Group (anti-Sera)	20 NOS
8	Potassium Permanganet (KMnO4) 500 ML	1 NOS
9	Cedar Wooden Oil 100 ml	5 Bottle

No	CONSUMABLE	Quantity
1	Gloves – 6.5	2 box
2	Gloves – 7.0	2 Box
3	Cotton roll	10
4	Lancets	3 box
5	Match box	30
6	Droppers with long capillary tube	
7	Plastic Dropping Bottle	

No.	Glassworare	Quantity
1	Reagent bottle - 250 ML	10
2	Reagent bottle - 500 ML	10
3	Beaker -1000 ML	3
4	Beaker - 500 ML	3
5	Beaker – 250 ML	3
6	Cream tips	
7	Blood Group Tiles	30
8	R.T. - C.T. tubes	1000
9	Slides	100
10	Watch glass	24
11	Test tubes	

Charts in Physiology Department

No.	Name of Chart
DIGESTIVE SYSTEM	
1.	Swallowing
2.	Gastric secretion & motility
3.	Liver & Gall Bladder
TRANSPORT SYSTEM	
1.	Cardiac cycle
2.	Electrocardiogram
3.	Blood coagulation
4.	Blood groups
RESPIRATION SYSTEM	
1.	Artificial respiration
2.	Volume & Capacities of lungs
CELL MEMBRANE FUNCTION	
1.	Transport through membrane Active transport
2.	Propagation of nerve impulse
EXCRETORY SYSTEM	
1.	Juxtaglomerular apparatus
2.	Urine Formation
ENDOCRINE SYSTEM	
1.	ADH in maintenance of blood volume
REPRODUCTIVE SYSTEM	
1.	Pituitary, ovarian & endometrial cycle
CENTRAL NERVOUS SYSTEM	
1.	Stretch reflex
2.	Cerebellum , part 1 & 2
3.	Skeletal muscle & mechanism of contraction
4.	Cochlea
5.	Spinothalamic sensory pathway

Models in Physiology Department

No	Name of Model
1	Vagus Nerve
2	Simple and intermediated reflex arch
3	Autonomic innervation of heart model showing autonomic innervation of heart along with the properties of cardiac muscle
4	Mechanism of ventilation – model showing nervous mechanism involved in the ventilating reflex
5	Mechanism of defecation – model showing the innervation of distal parts of large intestine and course of transmission of nerve impulse in defecation
6	Cranial nerve – model showing all its main innervation and function by the sides.
7	Pyramidal system showing complete pathway of pyramidal tracts along with its significance

Charts prepared by Students

No	Topic
1	Coagulation pathway
2	Transport mechanism
3	Classification of nerve fibers
4	Excitation-contraction coupling

Staff Information

Sr No	Name	Designation	
1		Professor and Head	
2	Dr. Kalpesh Vidja	Associate Professor	View
3	Dr. Hardika Upadhyay	Assistant Professor	View
4	Dr. Payal Joani	Assistant Professor	View
5	Dr. Ravi Amrutiya	Junior Resident	View
6	Dr. Harshvardhan Sheth	Junior Resident	View
7	Dr. Dharmesh Jadav	Junior Resident	View

Subject Curriculum

CURRICULUM of 1ST MBBS PHYSIOLOGY

GOAL : The broad goal of the teaching of undergraduate students in physiology aims at providing the student comprehensive knowledge of normal functions of body and to facilitate the understanding of physiological basis of health and disease.

OBJECTIVES :

At **Knowledge** : At the end of the course the student shall be able to :

1. Understand the functions of all organ system and their interactions
2. Assess relative contribution of each organ system in maintenance of milieu interior
3. Understand the basis of homeostasis and its application in clinical practice
4. Understand the basis of pathophysiology of common diseases
5. Understand the principles of preventive measures and social aspects of health and disease
6. Understand the principles of rehabilitation of the disabled
7. Understand the principles of basic research in physiology

At **Skills** : At the end of the course the student shall be able to :

1. Perform simple experiments in physiology
2. Record and interpret the findings of experiments in physiology
3. Record and interpret the findings of clinical examination
4. Record and interpret the findings of laboratory investigations
5. Record and interpret the findings of radiological investigations
6. Record and interpret the findings of ECG
7. Record and interpret the findings of pulmonary function tests
8. Record and interpret the findings of examination of nervous system
9. Record and interpret the findings of examination of sense organs
10. Record and interpret the findings of examination of reproductive system
11. Record and interpret the findings of examination of endocrine system
12. Record and interpret the findings of examination of gastrointestinal system
13. Record and interpret the findings of examination of urinary system
14. Record and interpret the findings of examination of musculoskeletal system
15. Record and interpret the findings of examination of cardiovascular system
16. Record and interpret the findings of examination of respiratory system
17. Record and interpret the findings of examination of blood
18. Record and interpret the findings of examination of skin
19. Record and interpret the findings of examination of lymphoreticular system
20. Record and interpret the findings of examination of locomotor system
21. Record and interpret the findings of examination of peripheral vascular system
22. Record and interpret the findings of examination of autonomic nervous system
23. Record and interpret the findings of examination of cranial nerves
24. Record and interpret the findings of examination of special senses
25. Record and interpret the findings of examination of cerebellar function
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3. Describe physiological response and adaptation to environmental stress.
4. List the physiological principles underlying pathogenesis and treatment of diseases.

B) **Skill** : At the end of the course the student shall be able to

1. Conduct experiments / investigations designed for study of physiological phenomenon
2. To interpret expt / investigations data
3. Distinguish between normal and abnormal data derived as result of test done in lab.

C) **Integration** : At the end of the course the student shall be able to acquire an integrated knowledge of organ, structure, function, and its Regulatory mechanism and apply the knowledge in understanding of disease and its treatment.

Total working Hours : 480 Hours LIKE Hours/terms

THEORY

General :-

(1) Cell physiology
(2) Homeostasis
(3) Transport across cell membrane
(4) Biophysics general principles
(5) Body fluid compartment
(6) Ancient topics & applied physiology

Total : 5-6 lectures

Hematology :

(1) Composition properties and functions of blood
(2) R.B.C.(their formation & functions
(3) Hemoglobin
(4) Anemias and blood indices
(5) Leukocytes - formation and functions
(6) Thrombocytes and hemostasis, Blood Coagulation
(7) Plasma proteins & E.S.R.
(8) Lymph and R.E. System
(9) Blood groups
(10) Immunity
(11) Blood Volume
(12) Related topics & applied physiology

Total : 20-25 Lectures

Nerve & Muscle Physiology:

(1) Membrane potential & action potential
(2) Structure & classification of nerve fibers
(3) Properties of nerve cells and their fibers (including Degeneration & Regeneration)
(4) Neuromuscular transmission
(5) Structure, functions and properties of muscles
(6) Mechanism of contraction of different types of muscles
(7) Physiological changes during muscle contractions
(8) Related topics & applied physiology

Total : 15-20 Lectures

Gastrointestinal tract :

(1) Anatomical physiology
(2) Secretion & their control-Salivary, Gastric, Pancreatic, intestinal
(3) Bile including liver function tests & Jaundice
(4) Digestion
(5) Absorption
(6) Movements of Gastrointestinal tract
(7) Hormones of GIT
(8) Related topics & applied physiology

Total : 15-20 Lectures

Respiration System :

(1) Physiological anatomy of respiratory tract
(2) Mechanics of respiration (including pressure & volume changes)
(3) Lung volume, capacities and lung function tests
(4) Composition of respiratory gases
(5) Transport of Oxygen in Blood
(6) Transport of Carbon dioxide in Blood
(7) Regulations of respiration
(8) Hypoxia, Asphyxia
(9) Cyanosis and periodic breathing
(10) Dysbarism and acclimatization to high altitude
(11) Exercise and space Physiology
(12) Related topics & applied physiology

Total : 15-20 Lectures

Cardiovascular System :

(1) Functional anatomy of heart
(2) Origin and spread of cardiac impulse
(3) Cardiac cycle (with heart sounds and pressure changes)
(4) Electrocardiogram
(5) Heart rate
(6) Cardiac output & venous return
(7) Arterial blood pressure
(8) Arterial and venous pulse
(9) Circulation - Capillary, coronary, pulmonary and systemic circulation
(10) Hemorrhage, Hypovolemic shock
(11) Cardiovascular change during exercise and cardiac efficiency tests.
(12) Related topics & applied physiology

Total : 20-25 Lectures

Excretory System :

(1) Physiological anatomy of Kidney
(2) Renal Circulation
(3) Glomerular filtration rate
(4) Functions of renal tubules
(5) Reabsorption of physiologically important substances
(6) Counter current mechanism
(7) Hormogenesis, renin-erythropoietin
(8) Role of kidney in acid-base balance in body
(9) Micturition
(10) Renal function tests
(11) Functions of skin
(12) Regulations of body temperature
(13) Related topics & applied physiology

Total : 15-15 Lectures

Central Nervous System& ANS :

(1) Introduction
(2) Synapse and synaptic transmission
(3) Autonomic nervous system (including Adrenal medulla)
(4) Sensory system- receptor & their properties, sensations
(5) Spinal Cord- Tracts and lesions
(6) Reflexes
(7) Motor organization
(8) Brain stem (including vestibular apparatus)
(9) Basal Ganglia
(10) Cerebellum
(11) Tone, posture and equilibrium
(12) Motor control mechanism
(13) Thalamus
(14) Hypothalamus
(15) Limbic cortex
(16) Cerebral cortex
(17) Higher functions Speech, Learning and memory
(18) Electroencephalogram and sleep
(19) Cranial Nerves
(20) Pain
(21) CSF
(22) Related topics & applied physiology

Total : 35-40 Lectures

Special Senses :

1. Structure of eye
2. Refractory medya of eye heir errors and corrections
3. Retina : Structure, photochemistry
4. Visual pathways and its lesions
5. Visual activity and binocular vision
6. Accommodation and adaptations to darkness
7. Color Vision
8. Visual perceptions : Central mechanism
9. Physiological movements of eye
10. Functional anatomy of ear
11. Structure and functions of middle ear
12. Organs of Corti and mechanism of hearing
13. Endocochlear potentials and auditory pathways
14. Deafness and tests of hearing
15. Taste and smell

Total : 15-20 Lectures

Endocrinology and Reproductive Physiology :

(1) Introduction
(2) Hypothalamohypophyseal axis
(3) Anterior pituitary gland (including growth and development)
(4) Posterior pituitary gland
(5) Thyroid gland
(6) Hormonal control of blood calcium level
(7) Endocrine pancreas
(8) Andrenal gland
(9) Hormones of heart, kidney and thymus
(10) Introduction to reproductive physiology
(11) Male reproductive system - structure, functions
(12) Female reproductive system - structure, functions & reproductive cycles
(13) Fertilization, placenta, pregnancy and pregnancy tests
(14) Parturition and lactation
(15) Physiological basis of family planning
(16) Related topics & applied physiology

Total : 15-20 Lectures

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Sr. NO	TOPIC
1	What does it mean to be doctor
2	What does it mean to be a patient
3	Doctor- patient relation
4	Foundation of communication-I

BIOPHYSICS :-

- Principles of biophysics and its applied aspects
- Biopotentials and its applied aspects
- Transport across cell membrane
- Related Applied topics

Total: 3-4 Lectures

ENVIRONMENTAL, REGULATORY & EXERCISE PHYSIOLOGY:-

- Physiology of high altitude, acclimatization & effect of high atmospheric pressure
- Aviation & space physiology
- Body temperature regulation, Hypo & Hyperthermia
- Physiology of exercise & yoga

Total: 3-4 Lectures

PRACTICALS

General Practicals:

1 Study of appliances - Experimental instruments
2 Study of appliances - Hematology and clinical instruments
3 Study of appliances - Compound microscope

Haematology Practicals:

1 Estimation of Haemoglobin
2 Total white cell count
3 Total red cell count
4 Cells in peripheral blood film
5 Differential WBC count
6 Absolute count, Arneth count
7 Packed cell volume & Erythrocyte sedimentation rate
8 Blood indices and related calculation
9 Blood grouping
10 Coagulation - B.T.& C.T.
11 Effect of tonicity of saline, fragility :
12 MCD, price jone's curve :
13 Haemin crystals, reticulocyte count

Clinical Physiology Practicals :

1 Radial pulse, Sphygmography
2 Arterial blood pressure
3 Cardiac efficiency tests
4 Clinical examination in general
5 Clinical examination of Cardiovascular system
6 Clinical examination of Respiratory system
7 Artificial respiration and Cardio pulmonary resuscitation
8 Spirometry
9 Respiratory efficiency tests
10 Stethography
11 Examinations of sensory functions
12 Examinations of motor functions
13 Examinations of reflexes
14 Examinations of cranial nerves - I,II,IV,V,VI
15 Examinations of cranial nerves - II
16 Examinations of cranial nerves - VII,VIII, IX,X,XI,XII
17 CNS higher functions
18 Clinical examinations of abdomen
19 Thermometry
20 Ergography
21 Endocrine disorder photographs
22 O_2 and CO_2 dissociation curve
23 ECG
24 EEG- EMG
25 Contraceptives, menstrual cycle and BBT
26 GTT- GFT
27 Excretory system - Cytoscreetogram, Renal function tests
1 Gastrocnemius muscle, sciatic nerve preparation
2 Simple muscle curve,
3 Effect of temperature on SMC
4 Effect of load on SMC
5 Effect of two successive stimuli
6 Genesis of tetanus
7 Phenomenon of Fatigue
8 Velocity of nerve impulse
9 Perfusion of amphibian heart
10 Frog's heart beat & Effect of temperature on Frog's heart
11 Properties of cardiac muscle
12 Effect of vagus, crescent stimulation and vagal escape.
13 Effect of drugs & ions on Frog's heart
14 Perfusion of isolated amphibian heart
15 Quantal summation & Strength duration curve

TUTORIALS

1. Haemoglobin	1
2. Blood groups	1
3. Neurons and Neuroglia	1
4. Rigor mortis & Myasthenia gravis	1
5. Lymph & R.E. System	1
6. Radial pulse Tracing	1
7. Bleeding Disorders	1
8. Isotonic & Isometric contraction	1
9. Effect of Temperature on Frog's heart	1
10. Cardiac Cycle	1
11. Cardiac Output	1
12. Blood Pressure	1
13. Cardiac Efficiency tests	1
14. Respiratory Efficiency tests	1
15. Lung Volumes & Capacities	1
16. Respiratory Exchange	1
17. Transport of Gases in Blood	1
18. Regulation of Respiration	1
19. Hypoxia & Asphyxia	1
20. Cyanosis & Periodic Breathing	1
21. Dysbarism & Acclimatization to High Altitude	1
22. Exercise & Space Physiology	1
23. Renal Function Tests	1
24. Micturition	1
25. Functions of Renal Tubules	1
26. Counter Current Mechanism	1
27. Acid Base Balance in Body	1
28. Functions of Skin	1
29. Regulations of Body Temperature	1
30. Functions of Liver	1
31. Bile & Jaundice	1
32. Digestion & Absorption	1
33. Movements of GIT	1
34. Hormones of GIT	1
35. Functions of Pancreas	1
36. Functions of Small Intestine	1
37. Functions of Large Intestine	1
38. Functions of Cerebellum	1
39. Functions of Basal Ganglia	1
40. Functions of Thalamus	1
41. Functions of Hypothalamus	1
42. Functions of Limbic Cortex	1
43. Functions of Cerebral Cortex	1
44. Higher Functions Speech, Learning & Memory	1
45. Electroencephalogram & Sleep	1
46. Cranial Nerves	1
47. Pain	1
48. CSF	1
49. Functions of Eye	1
50. Refractory Medya of Eye & Their Errors & Corrections	1
51. Retina : Structure, Photochemistry	1
52. Visual Pathways & Its Lesions	1
53. Visual Activity & Binocular Vision	1
54. Accommodation & Adaptations to Darkness	1
55. Color Vision	1
56. Visual Perceptions : Central Mechanism	1
57. Physiological Movements of Eye	1
58. Functional Anatomy of Ear	1
59. Structure & Functions of Middle Ear	1
60. Organs of Corti & Mechanism of Hearing	1
61. Endocochlear Potentials & Auditory Pathways	1
62. Deafness & Tests of Hearing	1
63. Taste & Smell	1
64. Functions of Pituitary Gland	1
65. Functions of Thyroid Gland	1
66. Hormonal Control of Blood Calcium Level	1
67. Functions of Endocrine Pancreas	1
68. Functions of Adrenal Gland	1
69. Hormones of Heart, Kidney & Thymus	1
70. Introduction to Reproductive Physiology	1
71. Male Reproductive System - Structure, Functions	1
72. Female Reproductive System - Structure, Functions & Reproductive Cycles	1
73. Fertilization, Placenta, Pregnancy & Pregnancy Tests	1
74. Parturition & Lactation	1
75. Physiological Basis of Family Planning	1
76. Related Topics & Applied Physiology	1

8. Hypoxia its classification	1
9. Hypoxia its therapy & physiology	1
10. Degludition and vomiting	1
11. Emptying of stomach & pyorobalus	1
12. Movements of small & large intestine, Defecation	1
13. Skin - structure & function	1
14. Asphyxia, Hypercarpnia	1
15. ICE & CO2 dissociation curve peristolic breathing	1
16. Acidification of urine, role of kidney in Ph regulation	1
17. Adrenal Medulla	1
18. Cutaneous Circulation	1
19. E.E.G.	1
20. Speech and Aphasia	1

	20

SEMINAR TOPICS OF PHYSIOLOGY

NO.	SEMINAR TOPIC
1	FUNCTIONS OF BLOOD
2	PLATELETS AND ITS FUNCTION
3	ANAEMIA
4	POLYCYTHEMIA
5	ERYTHROPOESIS
6	ANTICOAGULANTS
7	MECHANISM OF CLOTTING
8	IMMUNITY
9	LYMPH
10	SARCOMERE
11	MECHANISM OF SKELETAL MUSCLE CONTRACTION
12	PROPERTIES OF SKELETAL MUSCLE
13	NEUROMUSCULAR JUNCTION
14	CLASSIFICATION OF NERVES
15	RESTING MEMBRANE & ACTION POTANTIAL
16	MECHANISM OF CONTRACTION IN SMOOTH MUSCLE
17	EXCITATION CONTRATION COUPLING OF SKKOTH,SKLAND CARDIAC MUSCLE
18	CARDIAC CYCLE
19	HEART SOUND
20	B.P SHORT TERM REGULATION
21	B.P LONG TERM REGULATION
22	CARDIAC OUTPUT
23	VENOUS RETURN
24	PERIPHERAL RESISTANCE
25	PCV
26	ESR
27	CORONARY CURCULATION

SCHEME OF EXAMINATION

First periodic test (Theory)

First internal test (Theory and Practical)

Second Periodic Test (Theory)

Second Internal Test (Preliminary Exams Theory & Practical)

Final University Exams

UNIVERSITY EXAMINATION

Paper – I	100
Paper – II	100
Practical &Viva-Voce theory	100
	Total :300 marks

No.	Type	Marks Theory	Marks practical	Month
1.	1st internal examination	100	100	March
2.	2nd internal examination	100	100	July
3.	Preliminary examination	200	100	October
4.	University examination	200	100	November-december

PAPER WISE DISTRIBUTION OF TOPICS IN HUMAN PHYSIOLOGY

PAPER-I

- Cell & general physiology
- Blood Physiology
- Respiratory system
- Cardiovascular physiology
- Excretory system including Skin & body temperature
- Gastrointestinal system
- Environmental Physiology and Exercise Physiology

PAPER –II

- Nerve-muscle physiology
- Endocrinology
- Reproductive system
- Central Nervous system including Autonomic Nervous System
- Special Senses

No.	Teaching Learning Method	Teaching Learning Methodology inception
1	Student Seminar	2023
2	Students Viva	2023
3	Group Discussion	2023
4	Physiology Quiz Exposure - University Level & National Level	2023
5	System Ending MCQs Examination	2023
6	Charts Preparation	2023
7	Case Based Learning	2023
8	Student Feedback about Department Teaching Learning Environment (Confidential)	2023
9.	Assignments	2023
10.	Poster Competition	2023
11.	Physiology Quiz Competition at the end of Systems	2023

Teachers Theory Lecture Contribution :-

Teacher	2022-23 batch
Dr. Jasmin Parmar	CVS,CNS,
Dr. Kalpesh Vidja	General physiology, RS, endocrine system
Dr. Hardika Upadhyay	Nerve-muscle physiology, GIT, special senses
Dr. Payal Jivani	Blood, ANS, Reproductive system
Dr. Ravi Amrutiya	
Dr. Harshvardhan Sheth	Haematology lab
Dr. Dharmesh Jadav	
Dr. Ravi Amrutiya	
Dr. Harshvardhan Sheth	Clinical/ Amphibian lab
Dr. Dharmesh Jadav	

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No	Name	Designation	Qualification	Registration no(UG)	Photograph	Mail ID
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4	Dr. Ketan Tadha	Tutor	MBBS	G-75046		ketantadha1234@gmail.com
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6	Dr. Girish Parmar	Tutor	MBBS	G-79388		gjparmar4597@gmail.com

OVERVIEW:

Departments of anatomy, being the first department to receive the fresh students, it is equipped with young enthusiastic staff, who are not only academically excellent but also are compassionate, dedicated, students friendly and encouraging for the innovative ideas. The department's activities are coordinated with other pre-clinical and clinical departments and the faculty is actively involved in teaching anatomical subjects to medical undergraduate and graduate students and other students in the health disciplines. Anatomy is science refer to study of development and macro/micro structure of the human body. comprehensive knowledge of human anatomy lay foundation of Medical science and prepares the medical graduate with precise idea of position, shape, size, relations, structure, and function of all the structures present in the body. The anatomy subject includes Gross Anatomy, Developmental Anatomy, Histology, Radiography and Genetics and taught during first phase of MBBS curriculum.

Vision:

To impart comprehensive clinically oriented integrated training in Anatomy subject to medical undergraduate students for understanding of anatomical basis of disease presentation.

Mission:

To provide State of art teaching/learning facilities in anatomy by way of lectures/audio-visuals and practical sessions associated with new technologies for imparting knowledge of gross, microscopic and development of human body and advancing their skills in various branches of medical/clinical knowledge.

Facilities & Services:

The Department has been provided with facilities of

- Museum having different sections like Gross Anatomy, Embryology, Osteology, radiology, cytogenetic, charts and models,
- Audio visual teaching facilities e.g. OHP, LCD and CCTV,
- Histology Lab with facilities of immunohistochemistry and plan to upgrade the lab for users includes cryostats, microtomes and staining facilities. The Histology is being developed for catering paraffin processing, Staining slides, Micro dissection, Services,
- Embalming services for Donated Body, Research Lab, Department library, Dissection Hall, Demonstration Rooms,
- Voluntary Body Donation Service: The Department has prepared strategic plan to create awareness amongst the community, old Age home, in and around the college campus about voluntary body donation for teaching and research purposes.

Sub-sections in the Department

- Gross Anatomy
- Neuro-Anatomy
- Embryology
- Histology

Teaching staff is rotated in these sections - up to level: Professor, Associate Professor, Assistant Professor, Demonstrators

Faculty

No	Name	Designation	Qualification	Registration no(UG)	Photograph	Mail ID
1	Dr. Sanjay Vikani	Professor	MBBS,MD	G-38506		doc.vikani@gmail.com
2	Dr. Jyoti Bhardwaj	Assistant Professor	MBBS,MD	G-61253		jyotib323@gmail.com
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5	Dr. Rutvik Boda	Tutor	MBBS	G-90145		rutvikboda208@gmail.com
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BIOCHEMISTRY DEPARTMENT

Overview :

- ***GOAL***
  - The broad goal of the teaching of undergraduate students in biochemistry is to make them understand the scientific basis of the life processes at the molecular level and to orient them towards the application of the knowledge acquired in solving clinical problems.

- **OBJECTIVES :** To acquire knowledge and develop skills as under

  - ***KNOWLEDGE*** **:** At the end of the course, the student should be able to :
    1. Describe the molecular and functional organization of a cell and list its subcellular components;
    2. Delineate structure, function and inter-relationships of biomolecules and consequences of deviation from normal;
    3. Summarize the fundamental aspects of enzymology and clinical application wherein regulation of enzymatic activity is altered;
    4. Describe digestion and assimilation of nutrients and consequences of malnutrition;
    5. Integrate the various aspects of metabolism and their regulatory pathways;
    6. Explain the biochemical basis of inherited disorders with their associated sequelae;
    7. Describe mechanisms involved in maintenance of body fluid and pH homeostasis;
    8. Outline the molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their application in medicine;
    9. Summarize the molecular concepts of body defence and their application in medicine;
    10. Outline the biochemical basis of environmental health hazards, biochemical basis of cancer and carcinogenesis;
    11. Familiarize with the principles of various conventional and specialized laboratory investigations and instrumentation analysis and interpretation of a given data;
    12. The ability to suggest experiments to support theoretical concepts and clinical diagnosis.

  - ***SKILLS*** **:** At the end of the course, the student should be able to:
    1. Make use of conventional techniques/instruments to perform biochemical analysis relevant to clinical screening and diagnosis;
    2. Analyze and interpret investigative data;
    3. Demonstrate the skills of solving scientific and clinical problems and decision making;

  - ***INTEGRATION*** *:*
    The knowledge acquired in biochemistry should help the students to integrate molecular events with structure and function of the human body in health and disease.

Faculty

No	Name	Designation	Qualification	Registration no(UG)	Photograph	Contact
1	Dr. Hiren Ishwarbhai Sanghani	Professor	M.D. (Biochemistry)	G - 42481		hirensanghani@gmail.com
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4	Dr. Dhavalkumar Chadasaniya	Tutor	MBBS, M.D. Pathology	G-61404		dppatel64500@gmail.com
5	Dr. Prakash Vidja	Tutor	MBBS, M.D. Pathology	G - 39997		dr.prakashv@yahoo.co.in
6	Dr. Jahnavi Charaniya	Tutor	MBBS	G-81840		jahnaviicharaniya@gmail.com