Course Description

0701100 Fundamentals of Public Health

This course covers the following subjects: Introduction to human body. Health & disease. Diseases: causes & prevention . Nutritional health. Food pollution. Food poisoning. Care of mothers, children, youngs, adolescents & adults. Professional health. Health education. Cancer. Epidemic diseases. Genetic diseases. Sexually-transmitted diseases. Burns. First aid.

0701226 Histology

Study of the different types of tissues like epithelial, connective, muscular & nervous tissues. Histological study of the different body systems like muscular, nervous, cardiovascular, digestive, respiratory, urinary & reproductive systems is covered in detail.

0701234 Human Genetics

The course will introduce students to fundamental concepts in genetics including cell cycle, Mendelian inheritance, chromosomes, genes, genetic linkage, DNA structure, replication, transcription, and translation. Various genetic abnormalities and mutations, Hardy-Weinberg equilibrium, genetics of cancer, genetic engineering, gene and protein therapy; technical, ethical and legal aspects of the human genome project will all be considered.

0701241 General Microbiology

This course is aimed at providing the student with background knowledge of the nature of microorganisms, their structure, physiology, metabolism and reproduction. The role of microorganisms in infection of man and spoilage of matter. Physical and chemical means of control of microorganisms will also be discussed.

0701259 **Anatomy for Pharmacology**

Comprehensive Description of general structures of the human body, which includes the study of the various organ systems in the body, such as skin and its appendages, the skeletal system and joints, muscular system, central nervous system and peripheral sense organs, lymphatic system and circulatory system, respiratory, digestive, urinary and endocrine and reproductive system of male and female. In addition to the study of some pharmacological effects on those systems.

0701262 **Basic Human Anatomy**

Study of the general structure of the body; the tissues, organs and systems. Detailed discussion of the anatomy of the skeletal, nervous, cardiovascular, lymphatic, digestive, respiratory, excertory & reproductive systems represent the core of this course.

0701263 **Basic Human Anatomy lab**

Study of plastic models for the different systems of the human body

0701285 **Biostatistics**

Significance of statistics in Biology & Medicine, basic statistics like histograms, graphs, plots, mean, mode, SEM & SD. Measurements of central tendency, dispersion & limits of confidence will be discussed in detail. Certain statistical tests like Student -t- test, Fisher-z- test & Chi-square test are included.

0701313 **Hematology**

A theoretical and practical course that deals with basic aspects of hematology. Formed elements (RBCs, WBCs and platelets) are discussed in terms of formation, count and function in health and disease states. Anemias, hemoglobinopathies, WBC disorders and coagulation disorders will also be described. General aspects of anemias, genetic defects of hemoglobin, white blood cell and platelet disorders, blood coagulation, and thrombosis are all covered.

0701315 **Molecular Biology of the Cell**

Detailed study of the cell at the molecular level, nucleic acids, mode of transmission of genetic information from DNA to protein, regulation of gene expression at its various levels, cell-cell interaction and molecular signaling systems, mode of action of hormones and neurotransmitters, cell differentiation and specialization, characteristics of normal and abnormal cells and cell transformation will all be covered.

0701314 **Biochemistry**

A theoretical course that deals with the study of the chemical aspects of living matter. It involves the study of the structural and functional aspects of biomolecules within the cell, such as amino acids and proteins, fatty acids and lipids, carbohydrates and nucleic acids.

0701318 **Clinical Chemistry (1)**

This course studies the basic biochemical findings in health and disease states. The course deals with the laboratory findings in the disorders involving the kidney, liver, bone, gastrointestinal system, heart, lipids, carbohydrates, and other systems. The course also focuses on the various methods and techniques used for the investigation of such disorders.

0701324 **Pathophysiology**

Study the basic concepts in pathophysiology, cell injury, death and adaptation. Also, this course focuses on the description of Acute and chronic inflammation, repair, cell regeneration, fibrosis, wound healing and disorders of immune system. Furthermore, it emphasize on the pathophysiology of integumentary, cardiovascular, hematopoietic, lymphoid, respiratory, renal, gastrointestinal, endocrine, musculoskeletal and, nervous systems.

0701323 **Pathological Microtechniques**

The course introduces students to the various aspects of microtechnique. Tissue preparation and processing which involves: fixation, dehydration, embedding, sectioning, staining & mounting is emphasized. Staining of carbohydrates, lipids & nucleic acids, sectioning frozen specimens, histochemical & immunohistochemical studies and electron microscopy are included.

0701325 **Instrumental Analysis**

This course concentrates on the different analytical methods including electrophoresis, gas & liquid chromatography, HPLC, analysis by IR & UV light, polarography, flame photometry, spectrophotomotry, manual & automated cell counting, flow cytometry; ELISA readers.

0701365 **Medical Parasitology**

The course starts with an introduction to parasitology and parasitism, then moves on to study the various pathogenic parasites and helminths, their life cycles, pathogenicty , identification, irradiation and treatment are all described in detail.

0701361 **Human Physiology lab**

Involves study of: properties of plasma membrane, reflexes sense organs. Study on the eye, visual acuity & color blindness, Study of respiratory system parameters ,urine composition& tests. Tests. for certain blood parameters & blood pressure

0701364 **Human Physiology**

A theoretical and practical course that covers basic issues in human physiology. Physiology of the circulatory, respiratory, nervous, digestive, excretory, endocrine and reproductive systems are covered. Hormonal balance in females prior to and during pregnancy and lactation & the physiology of body temperature regulation will be illustrated.

0701368 **Human Embryology**

The study of reproductive systems, spermatogenesis, oogensis, fertilization, cleavage, gastrulation, implantation , pregnancy, and pregnancy tests, early embryonic development & organogenesis. IVF, sperm banks , embryo banks, twins, teratogensis are all included.

0701411 **Quality Assurance**

A theoretical course that deals with the quality control programs and methods used for the validation and assurance of accuracy of patient's laboratory results. Methods for quality control in all sections of the medical lab, and the importance of external quality control programs are also emphasized.

0701413 **Clinical Chemistry (2)**

This course deals with the laboratory investigation of various disorders, such as acid-base balance, Iron and heme metabolism, Urinalysis and body fluids, tumor markers, metabolic and inherited disorders, endocrine function tests, and therapeutic drug monitoring. Some of the newly developed techniques in the clinical chemistry laboratory is also emphasized in this course.

0701419 **Pharmacology**

An introductory course in pharmacology that deals with the application of the various types of drugs used in the treatment of diseases. Physiological effects of drugs on various organs and systems of the body are discussed.

0701414 **Blood Bank**

Highlights blood bank responsibilities, donor selection and component preparation. ABO, Rh, and other group systems, antibody detection and identification, compatability testing, blood preservation, transfusion therapy and adverse effects of blood transfusion, hemolytic disease of the newborn and antoimmune hemolytic anemias are all emphasized.

0701416 **Toxicology**

An introductory course that deals with classification and mechanism of action of many toxins encountered. Environmental, industrial, natural, and medicinal toxins are discussed. Also specimen collection and methods of analysis of toxic materials are emphasized.

0701418 **Cancer Biology**

The course covers fundamental aspects of cancer biology. Topics covered include: causes of cancer, tumorgenesis and transformation characteristics of transformed cells, molecular biology & genetic basis of cancer, tumor suppressor genes and oncogenes.

0701447 **Diagnostic Microbiology**

The course deals with the various infections which affect the human body, pathogenic organisms and pathogenicity & the techniques used in laboratory diagnosis of pathogenic bacteria are discussed. Common infections such as cholera, plague, tuberculosis, and syphilis are illustrated. Description of routine and special serological tests employed in diagnosis of microbial infections are emphasized.

0701443 **Medical Virology**

The course deals with the study of viruses in regard to their structure, morphology, reproduction, pahogenicity and classification in addition to illustrating some of the common viral infections and their laboratory diagnosis and prevention.

0701444 **Clinical Immunology**

The course introduces students to basic concepts in immunology including: innate versus acquired immunity, humoral versus cell-mediated immunity, detailed study of B cells, antigens and antigenicity, immunoglobulin's, T cell ontogeny and selection, the major histocompatability complex, Ag processing and presentation; macrophages, natural killer cells, & the complement system. The immunology of cancer, hypersensitivity, autoimmunity and immunodeficiency are also covered.

0701445 **Medical Microbiology**

The study of the structure, growth, genetics, pathogenicity & laboratory diagnosis of bacteria. The study of Gm + ve & Gm- ve cocci & bacilli. Pathogenic bacteria in the digestive tract, respiratory tract & other systems. The study of the laboratory diagnosis of the previous types of bacteria. The study of Mycobacteria, Actinomycetes & spirochetes. A brief study of viruses & pathogenic fungi. A brief study in immunology including types of immunity, Ag-Ab reaction, hypersensitivity, tumor immunology & immune-deficiency.

0701453 **Diagnostic Mycology**

The student will be introduced to the broad field of mycology in terms of mycological infections in man including: superficial, subcutaneous, opportunistic & systemic mycosis. Furthermore, occurrence, diagnosis, and treatment of human diseases caused by mycologic agents will be covered.

0701467 **Assisted Reproductive Technology**

This course concentrates on spermatogenesis, oogenesis, hormonal regulation in females. IVF cryopreservation of sperms, eggs & embryos, sex selection, twins, embryos and gene cloning, surrogate motherhood are covered. Recent advances in reproductive technology are also discussed

0701469 **Endocrinology**

The course begins with a historical perspective of hormones and then moves on to detailed study of hormones, hormonal secretion, chemical and biological properties of hormones, mode of action, factors that affect hormonal balance like nutrition and stress is considered. Clinical aspects of hormonal disturbances including causes, diagnosis and treatment will be covered.

0701481 **Special Topics**

The course introduces students to basic skills in literature searching and usage of literature searching tools. The student will select a topic of interest in biomedical sciences, gather necessary information from different sources, write a term paper and present his/her paper in a public seminar.

0701499 **Research**

In consultation with his/her supervisor, the student selects a research topic in one of the biomedical fields. The student is required to conduct laboratory work, tabulate and analyze results, summarize his/her findings in a publication format report.

0701491 **Clinical Laboratory Training (1)**

Covers training in an accredited hospital or medical laboratory in the area of diagnostic microbiology.

0701492 **Clinical Laboratory Training (2)**

Covers practical training in an accredited hospital or medical laboratory in the area of biochemistry and clinical chemistry.

0701493 **Clinical Laboratory Training (3)**

Covers training in an accredited hospital or medical laboratory in the area of microtechnique, histology & histopathology.

0701494 **Clinical Laboratory Training (4)**

Covers training in an accredited hospital or medical laboratory in the area of clinical immunology & serology.

0701495 **Clinical Laboratory Training (5)**

Covers training in an accredited hospital or medical laboratory in the area of hematology, blood bank & blood disease .

0701496 **Clinical Laboratory Training (6)**

Covers training in an accredited hospital or medical laboratory in different fields of medical laboratories .