

CURRICULUM FOR
B.SC (HONS) EMERGENCY & INTENSIVE CARE (HEALTH) TECHNOLOGY
4 Year (8 Semester)



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THE BACHA KHAN UNIVERSITY CHARSADDA

PREFACE

A university is the zenith of knowledge that imparts quality education and awards degrees for extensive educational attainments in various disciplines. Protection of traditional knowledge. Making exploration about it and obtaining deep understanding about modern technology and research techniques are some of responsibilities of the university. The mission of University is chartered to develop an intellectually conducive environment providing excellence and innovation in education and research to produce competent and community oriented BS Paramedics Health Professionals.

Allied Health Sciences is a field in medicine which has been completely neglected up till now so that there is absolute dearth of trained Allied health personnel who are the actual service providers to the patients, as a matter of fact they form the connection link between the doctors and the patients which is missing altogether in our health care system.

This document precisely briefs the details of B.Sc program and master programs as prepared by the experts' committee. I am pleased to acknowledge the efforts made by Prof. Dr Abdul sattar and honorable members of Board of Studies. The contribution made by them will go a long way in the education and training in the field of AHS.

I hope this program will meet the latest trends in B.S and Master Programs and will certainly produce competent Para Medical personnel to fill in the gap in the system which is main objective of this program.

Prof. Dr. Fazal Rahim
Vice Chancellor
Bacha Khan University
Charsadda

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AIMS AND OBJECTIVE OF THE COURSE

Aims:

The aims of the 4 years program in Bachelor in B.Sc (Hons) Emergency & Intensive Care (Health) Technology is to equipped the student with relevant professional knowledge, skills, techniques and ethical values to enable them to apply their acquired expertise at the level between the doctor and the patient for efficient health services delivery.

Objectives:

B.Sc (Hons) Emergency & Intensive Care (Health) Technology education and training should enable the student to:

- Develop accuracy and meticulousness to attain high levels of ethics and technical proficiency.
- Access the technical and non technical skills in a standardized and reproducible environment
- Strengthen the decision power and exercise appropriate judgment skills, to be applied especially and during crisis.
- Develop good leadership, problem solving and administrative skills.
- Develop and analyze innovative strategies for effective communication with the patient and the health care personnel.
- Demonstrate inter disciplinary team building strategies or effective co-ordination between various allied health disciplines.
- Demonstrate understanding of the basic concepts of professional behaviors and legal implementations of work environment.
- Demonstrate the knowledge of his/her role in health care delivery system.
- Establish and maintain continuing education as a faction of growth and maintenance of professional competence.

NOMENCLATURE AND DURATION

NOMENCLATURE:

The name of the Degree program shall be B.Sc (Hons) Emergency & Intensive Care (Health) Technology. The duration the course shall be 4 year (8 semesters) with structured training in the recognized department under an approved supervisor.

COURSE TITLE:

B.Sc (Hons) Emergency & Intensive Care (Health) Technology

COURSE DURATION:

Four year, eight semesters structured training in the recognized department under the guideline of an approved supervisor.

CREDIT HOURS:

130 Hours

MEDIUM OF INSTRUCTION:

English

METHOD OF INSTRUCTION:

As a policy, active participation of the students will be encouraged. Following teaching modalities will be employed:

- Large group teachings (lectures)
- Small group teachings
- Seminar presentations
- Assignments
- Skills teachings
- Self study and use of internet

In addition, to promote interactive and communication skills, following methods will be used;

ELIGIBILITY CRITERIA FOR ADMISSION:

F.Sc Pre-Medical, F.Sc Medical Technology or Equivalent HSSC Certificate from IBBC Islamabad with atleast 45% marks.

SCHEME OF STUDIES

Semester/Year	Name of Subject	Code	Credits
First	Biochemistry-I	BSHLT-101	3+1
	Human Physiology-I	BSHLT -102	3+1
	Human Anatomy-I	BSHLT -103	3+1
	English-I	BSHLT -104	2+0
	Pak studies	BSHLT -105	2+0
	Computer skills	BSHLT -106	1+1
			18
Second	Biochemistry-II	BSHLT -107	3+1
	Human Physiology-II	BSHLT -108	3+1
	Human Anatomy-II	BSHLT -109	3+1
	English-II	BSHLT -110	2+0
	Islamic studies	BSHLT -111	2+0
			16
Third	Medicine-I	BSHLT-201	3+1
	Surgery-I	BSHLT-202	3+1
	Microbiology-I	BSHLT-203	2+1
	General Pathology-I	BSHLT-204	2+0
	General Pharmacology-I	BSHLT-205	2+1
	Behavior Science	BSHLT-206	2+0
			18
Fourth	Medicine-II	BSHLT-207	3+1
	Surgery-II	BSHLT-208	3+1
	Microbiology-II	BSHLT-209	2+1
	General Pathology-II	BSHLT-210	2+0
	General Pharmacology-II	BSHLT-211	2+1
	Communication Skills	BSHLT-212	2+0
			18
Fifth	Medicine-III	BSHLT-301	3+1
	Surgery-III	BSHLT-302	3+1
	First Aid & Patient Safety	BSHLT-303	3+1
	Basic Epidemiology-I	BSHLT-304	3+0
	Ethics and Management	BSHLT-305	2+0

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Sixth	Medicine-IV	BSHLT-306	3+1
	Surgery-IV	BSHLT-307	3+1
	Basic Epidemiology-II	BSHLT-308	3+0
	Public Health	BSHLT-309	3+0
	Research Methodology	BSHLT-310	2+0
			16
Seventh	Medicine-V	BSHLT-401	3+1
	MCH, EPI	BSHLT-402	3+1
	Communicable & Non-Communicable Disease	BSHLT-403	3+0
	Nutrition	BSHLT-404	2+0
	Health Management & Policy	BSHLT-405	2+0
			15
Eight	Research Project	BSHLT-406	6
	Seminar	BSHLT-407	3+0
	Subject on own Interest	BSHLT-408	2+0
			11
	TOTAL CREDIT HOURS		129

Total credit hours= 129

HEC recommendation=124-136

1st SEMESTER COURSES

- 1. BIOCHEMISTRY -I**
- 2. HUMAN PHYSIOLOGY-I**
- 3. HUMAN ANATOMY-I**
- 4. ENGLISH-I**
- 5. PAK STUDIES**
- 6. COMPUTER SKILLS**

Aims and Objectives:

- To understand the chemical composition of macro and micro molecules of the cell
- To understand different biochemical reactions in the cell
- To utilize their knowledge scientifically

Course Detail:

Biochemical composition and functions of the cell, Chemistry of signals and receptors, Structure and function of Carbohydrates, Proteins and lipids, Classification of vitamins, their chemical structure & biochemical function, Sodium, potassium, chloride, calcium, phosphorus, magnesium, sulfur, iodine, fluoride, Composition, function and daily secretion of saliva, gastric juice, gastric acid(HCL), pancreatic juice, bile, and intestinal secretion, Digestion of proteins, carbohydrates, nucleic acids and lipids, Absorption of vitamins and minerals Sodium, potassium, chloride, calcium, phosphorus, magnesium, sulfur, iodine, fluoride, Respiratory chain and oxidative phosphorylation, components of respiratory chain, electron carriers, ATP synthesis coupled with electron flow, phosphorylation of ADP coupled to electron transfer, Ionization of water, weak acids and bases, pH and pH scale pK values, Body buffers and their mechanism of action, Acid base regulation in human body, Biochemical mechanisms for control of water and electrolyte balance, Types of particles in solution, Importance of selectively permeable membranes, osmosis and osmotic pressure, surface tension, viscosity, Structure & composition, Secretion, Mechanism of action of hormones

Practical:

- Good laboratory Practices
- Preparation of Solutions
- Principles of Biochemistry analyzers (spectrophotometer, flame photometer)
- Determination of Cholesterol, Tg, HDL, LDL, sugar, calcium and phosphorus in blood
- Introduction to electrophoresis, PCR, gel documentation
- How to operate centrifuge, water bath and microscope

Recommended Books:

1. A LANGE medical book Harper's Illustrated Biochemistry 26th edition
2. Medical Biochemistry by Mushtaq Ahmad vol. I and II

Aims and Objectives:

- To understand the basic concepts of physiology beginning from the cell organization to organ system function.
- To understand the organization of cell, tissue organ and system with respect to their functions.
- To Understand the physiology of Respiration, G.I.T, Urinary system and Endocrine system

Course Detail:

Introduction to the Human Physiology Functional organization---relationship between structure and function of the human body, Homeostasis – its importance-- negative and positive feedback Mechanism, Control system of the body_ Nervous and Hormonal control systems

Integumentary System Functions of the skin, hair, glands and nails, Body temperature and its regulation

The Musculoskeletal System: Functions of the bones and muscles, Functional characteristics of Skeletal Muscle, Smooth Muscle and Cardiac Muscle, The events of muscle contraction and relaxation in response to an action potential in a motor neuron, Distinguish between aerobic and anaerobic muscle contraction, Muscle hypertrophy and atrophy

The Endocrine System An introduction to Glands and Hormone, Different types of glands and their Hormones, Functions of the Endocrine System, Chemical Signals, receptors and hormones, Other Hormones

Respiratory System Different parts of respiratory system, Functions of the Respiratory System beginning at the nose and ending with the alveoli, Ventilation and Lung Volumes ,Gas Exchange and gas transport in the blood ,Control of Rhythmic Ventilation

The Digestive System Different parts of digestive system, Accessory organs of digestive system, Functions of each organ of the Digestive System including major salivary glands, Movements and Secretions in each organ of the Digestive System and their regulation, Physiology of Digestion, Absorption, and Transport

Genito-Urinary System Urine Production, Urine Movement ,Regulation of Urine Concentration and Volume ,Body Fluid Compartments ,Regulation of Extracellular Fluid Composition ,Regulation of Acid-Base Balance ,Physiology of Male Reproductive system—spermatogenesis and reproductive glands, hormones and their regulations, Physiology of Female Reproductive system--- ovulation, hormones and their regulations

Practical's:

- Introduction to microscope
- Bleeding time
- Clotting time
- Complete Blood Count

Recommended Books:

- Guyton test book of Physiology (Text Book) by Guyton published by W.B Saunders company
- Essentials of Anatomy and Physiology by Seelay, Stephens and Tate. 4th edition
- Ross & Wilson Anatomy and Physiology.
- Human Physiology. Stuart Ira Fox. 7th edition
- Text Book of Medical Physiology Guyton
- Essential of Medical Physiology Vol. I & II by Mushtaq Ahmad.
- Lecture notes on human physiology by Bray JJ, Cragg, PA MacKnight

Aims and objectives:

- To understand the basic concepts of anatomy beginning from the cell organization to organ system function
- To understand the basic concepts of general anatomy including skeleton and musculo skeleton.
- To Understand the anatomy of Thorax Abdomen and pelvis

Course Detail:**General Anatomy:**

Musculo skeletal system(Axial and Appendicular),Axial Skeleton, Different bones of human body, Axial and Appendicular Skeleton, Classification on the basis of development, region and function, General concept of ossification of bones, parts young bone, Blood supply of long bones.

Joints Structural Regional and functional classification of joints,Characteristics of synovial joints, Classification of synovial joints, Movements of synovial joints.

Muscular System Parts of muscle Classification of muscles (skeletal, Cardiac, smooth)

Thoracic wall: Muscles of thorax, Surface Anatomy, Trachea, lungs, pleura, mammary glands (breast), Heart and thoracic vessels.

Thoracic cavity: Mediastinum, Lungs, bronchi, blood supply and lymphatic

Abdominal wall: Skin, nerve and blood supply, Muscles of anterior abdominal wall.

Abdominal cavity: General Arrangement of the Abdominal Viscera, Peritoneum, Omenta, mesenteries, Stomach, blood, nerve, lymphatic supply, Small intestine, blood, nervous and lymphatic supply, Large intestine: blood nerve and lymphatic supply.

The pelvic wall: Anterior, posterior wall, diaphragm.

Pelvic cavity: Ureters, urinary bladder Male genital organs, Female genital organs, Muscles of pelvic region, blood supply, nerve supply,
Special Senses.

Practical's:

- Study Axial and Appendicular skeleton on human skeletal model.
- Study musculoskeletal system on human musculoskeletal model.
- Study organs of special senses.
- Study and understand anatomy of Thorax, Abdomen and Pelvis through:
- Human Models

- Video demonstration.

Recommended Books:

- Ross and Wilson Anatomy and Physiology in health and illness 11th Edition Waugh Grant.
- Clinical Anatomy (By regions) 9th edition, Richard S. Snell.

Reference books:

- Netter Atlas of human anatomy 5th Edition Saunders.
- Gray's Anatomy for students 2nd Edition Drake Vogal Mitcell.
- BD. Churasia Human Anatomy (All regions)

Aims and Objectives:

- To enhance language skills and develop critical thinking
- To enable the students to meet their real life communication needs

Course Contents:

Vocabulary Building Skills: Antonyms, Synonyms, Homonyms, One word Substitute, Prefixes and suffixes , Idioms and phrasal verbs , Logical connectors , Check spellings

Practical Grammar & Writing Skill: Parts of Speech, Tenses, Paragraph writing: Practice in writing a good, unified and coherent paragraph, Précis writing and comprehension, Translation skills: Urdu to English

Reading skills: Skimming and scanning, intensive and extensive, and speed reading, summary and comprehension Paragraphs.

Presentation skills: Developing Oral Presentation skill, Personality development (emphasis on content, style and pronunciation)

Recommended books:

1. Functional English
 - a) Grammar
 - Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 1. Third edition. Oxford University Press. 1997. ISBN 0194313492
 - b) Writing
 - Writing. Intermediate by Marie-Christine Boutin, Suzanne Brinand and Françoise Grellet. Oxford Supplementary Skills. Fourth Impression 1993. ISBN 0 19 435405 7 Pages 20-27 and 35-41.
 - c) Reading/Comprehension
 - Reading. Upper Intermediate. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 453402 2.
 - d) Speaking

(As Compulsory Subject for Degree Students)

Aims and Objectives

- To develop vision of Historical Perspective, Government, Politics, Contemporary Pakistan, ideological background of Pakistan.
- To study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

Course Contents:**Historical Perspective**

Ideological rationale with special reference to Sir Syed Ahmed Khan, Allama Muhammad Iqbal and Quaid-i-Azam Muhammad Ali Jinnah, Factors leading to Muslim separatism, People and Land, Indus Civilization, Muslim advent, Location and Geo-Physical features.

Government and Politics in Pakistan

Political and constitutional phases:

1947-58,1958-71,1971-77,1977-88,1988-99,1999 onward

Contemporary Pakistan

Economic institutions and issues, Society and social structure, Ethnicity, Foreign policy of Pakistan and challenges, Futuristic outlook of Pakistan

Books Recommended:

- Burki, Shahid Javed. *State & Society in Pakistan*, The Macmillan Press Ltd 1980.
- Akbar, S. Zaidi. *Issue in Pakistan's Economy*. Karachi: Oxford University Press, 2000.
- S.M. Burke and Lawrence Ziring. *Pakistan's Foreign policy: An Historical analysis*. Karachi: Oxford University Press, 1993.
- Mehmood, Safdar. *Pakistan Political Roots & Development*. Lahore, 1994.
- Wilcox, Wayne. *The Emergence of Banglades.*, Washington: American Enterprise, Institute of Public Policy Research, 1972.
- Mehmood, Safdar. *Pakistan Kayyun Toota*, Lahore: Idara-e-Saqafat-e-Islamia, Club Road, nd.
- Amin, Tahir. *Ethno - National Movement in Pakistan*, Islamabad: Institute of Policy Studies, Islamabad.

Aims and Objectives:

- To Understand and apply the basic principles that underpin computer science
- To demonstrate basic computational concepts and elementary data structures
- To learn a range of transferable skills including communication, self-organization, and basic mathematical and logical reasoning

Courses Content:

- Introduction to Computer and Window XP/7.
- MS Office 2007 (Word, Excel, PowerPoint).
- Internet access and different data bases available on the internet
- Email

Recommended Books:

- Microsoft Office Introductory by Gary B. Shelly
- **Lecture Notes**

2ND SEMESTER COURSES

- 1. BIOCHEMISTRY-II**
- 2. HUMAN PHYSIOLOGY-II**
- 3. HUMAN ANATOMY-II**
- 4. ENGLISH-II**
- 5. ISLAMIC STUDIES**

Aims and Objectives:

- To understand the chemical composition of macro and micro molecules of the cell
- To understand different biochemical reactions, Metabolisms in the cell
- To utilize their knowledge scientifically

Course Contents:

Nutrition, Food and Dietetics Balance food, Proteins, Fats and lipids, Carbohydrates, Vitamins and minerals, Major food groups, Nutritional status of Pakistani nation, Metabolic changes in starvation, Protein energy malnutrition, Regulation of food intake, Obesity

BIOENERGETICS & THE METABOLISM OF CARBOHYDRATES & LIPIDS Bioenergetics: The Role of ATP, Biologic Oxidation The Respiratory Chain & Oxidative Phosphorylation, Carbohydrates of Physiologic Significance, The Citric Acid Cycle, The Catabolism of Acetyl-CoA, Glycolysis & the Oxidation of Pyruvate, Metabolism of Glycogen, Gluconeogenesis & Control of the Blood Glucose, The Pentose Phosphate Pathway & Other Pathways of Hexose Metabolism, Oxidation of Fatty Acids, Ketogenesis, Metabolism of Unsaturated Fatty Acids & Eicosanoids, Metabolism of Acylglycerols & Sphingolipids, Integration of Metabolism—the Provision of Metabolic Fuels, Metabolism of Purine & Pyrimidine Nucleotides

METABOLISM OF PROTEINS & AMINO ACIDS Catabolism of Proteins & of Amino Acid Nitrogen, Catabolism of the Carbon Skeletons of Amino Acids, Conversion of Amino Acids to Specialized Products, Porphyrins & Bile Pigments

ENZYMES Mechanism of Action, Enzymes: Kinetics, Regulation of Activities, clinical Enzymology

BODY FLUIDS: Urine, Feces, CSF, Pleural and pericardial fluids, peritoneal fluid, Synovial fluid, Semen analysis

PRACTICALS:

- Determination of enzymes
- Urine examination
- CSF examination
- Examination of pleural, pericardial, synovial fluids

Recommended Books:

- A LANGE medical book Harper's Illustrated Biochemistry 26th edition
- Medical Biochemistry by Mushtaq Ahmad vol. I and II

Aims and Objectives:

- To understand the basic concepts of physiology beginning from the organization of the systems to their role in the body.
- To Understand the organization and function of various systems
- To Understand the physiology of Blood, CVS, Nervous System and special senses
- Students will be able to understand immunity, its types and immune reactions

Course Detail:**The Nervous System**

Functions of the central nervous system, the functional areas of the cerebral cortex and their interactions. Functions of the parts of the brainstem diencephalons, basal nuclei, Limbic system, and cerebellum, Functions of various cranial nerves, Functions of the somatic motor nervous system Functions of the autonomic nervous system The function of neurons, neuroglial cells and their components. Resting membrane potential and an action potential, the function of a synapse and reflex arc

The functions of the specialized sense organs Eye---- physiology of site, accommodation, optic nerve and optic chiasm, Ear-- functions of the internal, middle and external ear, Physiology of the hearing and balance, Smell- physiology of olfactory nerve, Taste --physiology of taste, Location of the taste buds, Physiology of speech

Blood Composition of Blood and Plasma Functions of Blood, Formed Elements, Stages of cell development, Blood grouping, and Coagulation mechanism

The Cardiovascular system Functions of the Heart Electrical Activity of the Heart origin and propagation of cardiac impulse Phases of the Cardiac Cycle Heart Sounds Regulation of Heart Functions--- intrinsic and extrinsic, Functions of the Peripheral Circulation The Physiology of Circulation Pulmonary Circulation Systemic Circulation: Arteries Veins Local Control of Blood Vessels Nervous Control of Blood Vessels Regulation of Arterial Pressure, The function of Lymphatic System, tonsils, lymph nodes, the spleen and the thymus.

Immunity Define immunity, Innate Immunity, Adaptive Immunity Antigens and Antibodies, Primary and secondary responses to an antigen, Antibody-mediated immunity and cell-mediated immunity, Role of lymphocyte in immunity regulation

Practical's:

- Spirometry
- Electrocardiography
- Blood Pressure Measurement
- Normal and abnormal ECG interpretation
- Pulse rate measurement

- Heart sounds

Recommended Books:

- Guyton test book of Physiology (Text Book) by Guyton published by W.B Saunders company
- Essentials of Anatomy and Physiology by Seelay, Stephens and Tate. 4th edition
- Ross & Wilson Anatomy and Physiology.
- Human Physiology. Stuart Ira Fox. 7th edition
- Text Book of Medical Physiology Guyton
- Essential of Medical Physiology Vol.I & II by Mushtaq Ahmad.
- Lecture notes on human physiology by Bray JJ, Cragg, PA MacKnight

Aims and objectives:

- To understand the basic concepts of anatomy beginning from the cell organization to organ system function
- To understand the anatomy of upper limb, lower limb and head and neck.
- To understand the knowledge about endocrine system

Course Detail:

The upper limb Bones of shoulder girdle and Arm, Muscles, Axilla, Brachial plexus, Cubital fossa, the forearm, hand bones, muscles, Blood supply, Nerve supply, lymphatics

The lower limb Fascia, Bones, Muscles, Femoral triangle, Blood supply, Nerve supply, Lymphatic supply.

Head and neck Skull, Mandible, Cranial nerves, cranial cavity, Meninges, Brain, Orbit, Neck

Endocrine System Classification of endocrine glands, Pituitary glands, Thyroid Glands, Adrenal gland and differences between the cortex and medulla.

Nervous System Autonomic nervous system, Central nervous system

Practical's:

Study and understand the anatomy of Upper limb, Lower limb, Head and Neck through:

- Human Models
- Video demonstration
- Study radiographs of upper and lower limb.

Recommended Books:

Essential books (text books)

- Ross and Wilson Anatomy and Physiology in health and illness 11th Edition Waugh Grant.
- Clinical Anatomy (By regions) 9th edition, Richard S. Snell.

Reference books

- Netter Atlas of human anatomy 5th Edition Saunders.
- Gray's Anatomy for students 2nd Edition Drake Vogal Mitcell.
- BD. Churasia Human Anatomy (All regions)

Aims and Objectives:

- To enable the students to meet their real life communication needs
- To enhance language skills and develop critical thinking

Course Contents:

Writing Skill, CV and job application, Technical Report writing, writing styles **a)** Changing narration: Converting a dialogue into a report

b) Converting a story into a news report **c)** Converting a graph or picture into a short report or story, Active and Passive voice, Letter / memo writing and minutes of the meeting, use of library and internet recourses , Essay writing., Phrases - Types and functions,

Clauses - Types and functions. Punctuation: Tenses - Types, Structure, Function, Conversion into negative and interrogative.

Speaking Skill: Group Discussion (Various topics given by the teacher), Presentation by the students (individually), Role Play Activities for improving Speaking.

Listening Skill, Listening Various Documentaries, Movies, and online listening activities to improve the listening as well as pronunciation of the words.

Suggested Books:

- Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press 1986. ISBN 0 19 431350 6.
- Reading. Advanced. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills.
- Reading and Study Skills by John Langan
- Study Skills by Riachard
- Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 1. Third edition

Aims and Objectives: **To learn about Islam and its application in day to day life.**

- To provide Basic information about Islamic Studies
- To enhance understanding of the students regarding Islamic Civilization
- To improve Students skill to perform prayers and other worships
- To enhance the skill of the students for understanding of issues related to faith and religious life.

Course Detail:

Fundamental beliefs of Islam, Belief of Tawheed, Belief in Prophet hood, Belief in the Day of Judgment, Worships, Salaat / Prayer, Zakat /Obligatory Charity, Saum / Fasting, Hajj / Pilgrimage, Jihad, Importance of Paramedics In Islam, Ethics, Religion and Ethics, Higher Intents / Objectives of Islamic Sharia and Human Health, Importance and Virtues of Medical Profession, Contribution and Achievements of Muslim Doctors, Knowledge of the Rights, Wisdom and Prudence, Sympathy /Empathy, Responsible Life, Patience, Humbleness, Self Respect, Forgiveness, Kindhearted, Beneficence, Self Confidence, Observing Promise, Equality, Relation among the Doctors, Jealousy, Backbiting, Envy, Etiquettes of Gathering, Relation between a Doctor and a Patient, Gentle Speaking, Mercy and Affection, Consoling the Patient, To inquire the health of Patient, Character building of the Patient, Responsibilities of a Doctor,

Recommended Books:

- **Islamiyat (Compulsory) for Khyber Medical University, Medical Colleges and Allied Institutes**

3RD SEMESTER COURSE

- 1. MEDICINE-I**
- 2. SURGERY-I**
- 3. MICROBIOLOGY-I**
- 4. GENERAL PATHOLOGY-I**
- 5. GENERAL PHARMACOLOGY-I**
- 6. BEHAVIOR SCIENCE**

Aims and Objectives:

To introduce to the students the significant of Medical Disorders, patient receiving assessment in OPD and ward, maintain the patient and ward record

Course Contents:

General methods of clinical observation, History taking, vital signs and General systemic/physical examination

Knowledge of the disease producing agent's i.e. Physical agents,

Chemical agents, Drugs effect of temperature, effect of electricity, effect or radiation Infectious disease, Measeles, Rubella, hoping couch, Diphtheria

Disease of gastrointestinal system

Diseases of liver spleen, stomach, intestine and colon Diseases of metabolism

Vitamin deficiency diseases, diabetes melitis, gout, obesity

Patient attending assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigating chart, provisional, deferential diagnosis, patient and ward record and preparation the patient for discharge

RECOMMENDED BOOKS:

Clinical Medicine by Parveen Kumar, Michalclark in 1994 by ELBS Principal and practice of Medicine by CRW Adwardsetal in 1995 by ELBS

Aims and Objectives:

The objectives of the courses to handle the common Orthopedic and neurosurgery, procedure and care by the health technologies

Course Contents:

Orthopedic Unit Common fractures. Their management and prevention Orthopedic Unit care of orthopedic patients
General surgery, cardio & neurosurgery, diseases procedure and care of the patient in the mentioned units
Orthopedics surgery
Fractures and dislocation (general aspect)
Types of fractures and dislocation, mechanism of injures, clinical presentation, diagnostic methodology, principles of management, first aid management, open and closed fracture, complications of fractures, rehabilitation principles, healing process and abnormalities, complications (ischemic contractures, mystic, joint stiffness)
Rheumatoid arthritis, rheumatic arthritis, osteo arthritis, variants of rheumatoid arthritis, juvenile cortical arthritis, ankylosing spondylitis, low back pain
Bone and joint infections Osteomyelitis
acute, l chronic
Tuberculosis, septic arthritis, typhoid arthritis Tuberculosis arthritis Neurosurgery
Spinal injuries, spinal cord injuries, disc problems, head injuries spondyhlisthsis, brain tumours, special tumors
Orthopedic neurology
Erb's palsy, wrist drop, foot Drop, post polio deformities, cerebral palsy their presentation, complication, principles of surgical management, post surgical rehabilitation.
Patient attending, assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigations, output chart, temperature chart, special investigation chart, provisional, diferential diagnosis, patient and ward record
Preparation for surger, pre and post operative care and preparation the patient for discharge

RECOMMENDED BOOKS:

Outline of Orthopedic by Johan Crawford Adam and devid hambilin in 1990 by ELBS
Cash textbook of Orthopedic and Rheumatology by Mercyam in 1992 by Mosby.

Aims and Objectives:

- To introduce the students with basic concepts in Medical microbiology and acquire skill in practical work.
- To produce a team of Medical Technologists steeped in knowledge of Medical microbiology.
- To equip Medical Technologists with latest advance techniques in the field of diagnostic Medical Microbiology.

Course Contents:

Bacteria, Immune response to bacteria, Diagnostic medical microbiology laboratory and clinical correlation, , bacterial classification, morphology, structure and replication, cell structure of bacteria, types and culture of bacteria, the basic laboratory techniques necessary to identify microorganisms.

Practical:

- Preparation and examination of wet films, direct microscopic examination of wet film preparation of smear, fixation and staining of bacterial smears and its quality control methods
- Demonstration of common tests used for the diagnosis of bacteria.

Recommended books:

- Medical Microbiology - David green Wood, Slack Pentherer
- Microbiology – Prescott Harly Klein.
- Microbiology – Pelczar, Chan, Krieg
- Jawertz, Melnick, & Adelberg`s Medical Microbiology
- Kenneth J. Ryan, Sherris Medical Microbiology

Aims and Objectives:

- To describe cellular responses to stress and noxious stimuli and inflammation.
- To describe cell injury and cell death.
- To describe the mechanisms involved in wound healing.
- To Explain the pathology and pathogenesis of edema and shock
- To enumerate and describe the abnormalities of cell growth and differentiation

Course Contents:

Cell Injury & adaptation Cell injury, Cellular adaptation

Inflammation Acute Inflammation, Chronic Inflammation

Cell Repair & Wound Healing Regeneration & Repair, Healing Factors affecting Healing

Hemodynamic Disorders Define & classify the terms, Edema, Hemorrhage, Thrombosis, Embolism, Infarction & Hyperemia, Shock, compensatory mechanism of shock, possible consequences of thrombosis & difference between arterial & venous emboli

Neoplasia Dysplasia& Neoplasia Difference between benign & malignant neoplasm, etiological factors for Neoplasia, different modes of metastasis

Practical:

- Practical Copy for General Pathology
- Specific Histopathological Slides

Recommended Books:

- Robbins and Cotran Pathologic Basis of Disease, Professional Edition, 8th Edition

Aims and Objectives:

- To discuss the roles and responsibilities of the various members of the health care team in maintaining patient safety during drug therapy.
- To define common terms related to pharmacology and drug therapy.
- To discuss relevant historical, legal, and ethical issues related to pharmacology and drug therapy.
- To describe the process through which a drug must go as it is being developed and tested for safety.
- To describe basic facts about drugs such as names, sources, classification systems, preparations, and routes of administration

Course Contents:

Introduction to Pharmacology, Pharmacokinetics, Pharmacodynamics ,Adverse effects of drugs, Classification of drugs, Drugs affecting the Autonomic Nervous System, Opioids, Drugs Affecting CVS, Drugs Affecting Endocrine system, Gastrointestinal Drugs, Autacoids & Antagonists ,Anesthetics, Analgesics, Narcotics, Muscle Relaxants, Non-Narcotic Analgesics

RECOMMENDED BOOKS:

1. Lippincott's pharmacology (text book) by Mycek 2nd edition published by Lippincott Raven
2. Katzung textbook of pharmacology (Reference Book) by Bertram Katzung 8th Edition, Published by Appleton.

Aims and Objectives:

- Conducting diagnostic interviews
- Formulating and clarifying diagnostic findings and treatment recommendations
- Documenting evaluation and treatment procedures, involving duties such as recording results of diagnostic interviews, lab studies, and/or treatment plans in a timely way according to the medical records protocols of the rotation site

Course Contents:

Introduction to Behavioral Sciences and its importance in health: Bio-Psycho-Social Model of Health Care and the Systems Approach, Normality vs Abnormality, Importance of Behavioral sciences in health, Desirable Attitudes in Health Professionals Understanding Behavior: Sensation and sense organs, Perception, Attention and concentration, Memory, Thinking, Communication, Individual Differences: Personality, Intelligence, Emotions, Motivation, Learning, Stress and Stressors, Life Events, Stress, Management, Interviewing / Psychosocial History Taking, Allied Health Ethics-Hippocratic oath, Culture and Allied Health practice, Psychological reactions, Breaking Bad News, Pain, Sleep, Consciousness.

Recommended Books:

1. Behavioral Sciences by M.H Rana 2007
2. Sociology in a Changing World by [William Kornblum 8th edition 2007](#)
3. Changing Behavior: Immediately Transform Your Relationships with Easy-to-Learn, Proven Communication Skills by [Georgiana Donadio 2011](#)

4TH SEMESTER COURSE

- 1. MEDICINE-II**
- 2. SURGERY-II**
- 3. MICROBIOLOGY-II**
- 4. GENERAL PATHOLOGY-II**
- 5. GENERAL PHARMACOLOGY-II**
- 6. COMMUNICATION SKILLS**

Aims and Objectives:

To introduce to the students the significant of Medical Disorders, infection, transmitted diseases and preventive, curative care, patient receiving, assessment in OPD and Ward, maintain the patient and ward record

Course Contents:

Infectious diseases. Rabies, Tetanus, Chicken pox, mumps Infectious

diseases. Typhoid fever, bacillary dysentery Infectious diseases.

Malaria, amoebiasis, cholera Infectious diseases

Infectious diseases acute and chronic bacterial viral and fungal, AIDS

Introduction, global impact, epidemiology, principles and basic between nutrition and infection, diagnosis, antimicrobial, chemotherapy, prevention, bacterial infections: Gram positive and negative cocci, gram positive and negative bacilli, actinomycetes, mycobacteria, mycoplasma, sexually transmitted disease, spirochetes rickettsiae and similar organisms viral infection: DNA viruses, RNA viruses, fungal infection: systemic fungal infection, local fungal infections. Protozoal infection: blood and tissue infections, intestinal and genital infections, helminthic infections: nematode round worm infections, trematode (fluke) infections, cestode (tape worm) infections.

Patient attending, assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigations, output input chart, temperature chart, special investigation chart, provisional, differential diagnosis, patient and ward record and preparation the patient for discharge.

RECOMMENDED BOOKS:

Clinical Medicine by Parveen Kumar, Michalclark in 1994 by ELBS
Principles and practice of Medicine by CRW Adwardsetal in 1995 by ELBS

Aims and Objectives:

To introduce to the student the significant of ENT disorders, preventive, curative care and patient receiving, taking history, assessment, investigation in OPD, maintain the patient and ward record in ENT OPD and ward

Course Contents:

ENT Diseases Ear Boil in Ear, Foreign bodies Otites media, Otites External Boil in Nose, Epitaxis, DNS Feature of nose, Foreign bodies Rhinitis, Sinusitis Throat, ENT Tonsillitis Diphtheria, Laryngitis Throat, ENT Foreign body in throat. Tracheotomy Patient attending, assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigations, output input chart, temperature chart, special investigation chart, provisional, differential diagnosis, patient and ward record Preparation for surgery, pre and post operative care and preparation the patient for discharge

RECOMMENDED BOOKS:

Clinical medical Diagnosis and Treatment

General pathology by Walten Israel 9th edition in 1999 by Churchill living stone

Aims and Objectives:

- To introduce the students with basic concepts in Medical microbiology and acquire skill in practical work.
- To produce a team of Medical Technologists steeped in knowledge of Medical microbiology.
- To equip Medical Technologists with latest advance techniques in the field of diagnostic Medical Microbiology.

Course Contents:

Infection, Immune response to infection, Diagnostic medical microbiology laboratory and clinical correlation, Control of hospital infection, Biomedical waste management, Viral classification, morphology, structure and replication, General properties of virus, Pathogenesis and control of virus, Common viral pathogen prevailing in Pakistan, Parasitic classification, morphology, life cycle, pathogenesis and diagnosis of medically important pathogenic parasite prevailing in Pakistan.

Practical:

- Preparation and examination of wet films, direct microscopic examination of wet film preparation of smear, fixation and staining of bacterial smears and its quality control methods
- Cleaning of new and used glass wares for microbiological purposes. Students should be familiar to use autoclave, hot air oven, water bath, steamer etc.
- Stool examination for Helminthic ova
- Visit to hospital for demonstration of biomedical waste management.
- Demonstration of common serological tests used for the diagnosis viral and parasitic infection

Recommended books:

- Medical Laboratory Manual for Tropical Countries Vol – 1&2 Monica Cheesbrough
- Mackie & McCartney practical medical Microbiology - Colle. Fraser, Marmion, Simmons
- Medical Microbiology - David green Wood, Slack Pentherer
- Microbiology – Prescott Harly Klein.
- Microbiology – Pelczar, Chan, Krieg
- Jawertz, Melnick, & Adelberg`s Medical Microbiology
- Kenneth J. Ryan, Sherris Medical Microbiology

Aims and Objectives:

- To introduce students with different environmental hazards
- To gain knowledge of some basic systemic diseases

Course Contents:

Health effects of climate change, toxicity of chemical and physical agents, environmental pollution, effect of tobacco, effect of alcohol, injury by therapeutic drugs and drugs of abuse, general principles of microbial pathogenesis, special techniques for identifying infectious agents, agents of bioterrorism, heart failure, congenital heart diseases, ischemic heart diseases, hypertensive heart diseases, arrhythmias, atelectasis, chronic obstructive pulmonary disease, asthma, bronchiectasis, pneumonias, pneumothorax, hemothorax, nephrotic syndrome, renal stone, hydronephrosis, aphthous ulcer, gastritis, peptic ulcer, hemorrhoid, jaundice, liver cirrhosis, viral hepatitis, cholecystitis, urinary tract infections, arthritis, facial palsy

Practical:

1. Helicobacter pylori test
2. Diagnosis methods of UTI
3. Determination of renal function tests
4. Determination of liver function tests
5. Determination of cardiac profile

Recommended Books:

- Robbins Basic Pathology Kumar Abbas Aster 9th Edition 2013
- Review Of General Pathology Moh.Firdaus, 9th Edition
- Short Text Book of Pathology Moh. Inam Danish 3rd Edition 2006

Aims and Objectives:

- To provide quality patient care in routine as well as advanced procedures.
- To understand the mechanism of drug action at molecular as well as cellular level, both desirable and adverse.
- To understand the principles of pharmacokinetics i.e. drug absorption, distribution, metabolism and excretion and be able to apply these principles in therapeutic practice.

Course Contents:

Drugs acting on cardiovascular system; Drugs for heart failure, anti hypertensive drugs, anti arrhythmic drugs, antianginal drugs, Anti Hyperlipidemic drugs, Blood drugs, Diuretics, Insulin and glucose lowering drugs, Chemotherapeutic drugs, Antibiotics, Drugs acting on Respiratory system, Anesthetics.

Practical:

1. Routes of drug administration
2. Dose-Response Curves
3. Affect of adrenaline on pulse rate
4. Affect of beta blockers on heart rate after exercise
5. Source of drug and identification of some raw materials that are source of drug
6. Weight conversions and measurements
7. Preparation Sulfur ointment
8. Preparation of pilocarpine drops
9. Prescription writing

Recommended Books:

- Lippincott's pharmacology (text book) by Mycek 2nd Edition published by Lippincott Raven 2000.
- Katzung textbook of pharmacology (Reference Book) by Bertram Katzung 8th Edition, Published by Appleton. dec 2007.

Aims and Objectives:

By the end of the course students will be able to:

- Communicate effectively both verbally and non-verbally
- Apply the requisite academic communication skills in their essay writing and other forms of academic writing
- Use various computer-mediated communication platforms in their academic and professional work
- Relate to the interpersonal and organizational dynamics that affect effective communication in organizations.

Course Contents:

1. Introduction to Communication, Meaning and definition of Communication, The process of communication, Models of communication
2. Effective Communications in Business, Importance and Benefits of effective communication, Components of Communication., Communication barriers, Non verbal communication
3. Principles of effective communication, Seven Cs.
4. Communication for academic purposes, Introduction to academic writing, Summarizing, paraphrasing and argumentation skills, Textual cohesion
5. Communication in Organizations, Formal communication networks in organizations, Informal communication networks, Computer- mediated communication (videoconferencing, internet, e-mail, skype, groupware, etc)
6. Business Writing , Memos , Letters, Reports , Proposals , Circulars, etc
7. Public Speaking and Presentation skills, Effective public presentation skills, Audience analysis, Effective argumentation skills, Interview skills

Recommended books:

- Interpersonal Communication Paperback by Kory Floyd
- Reading into Writing 1: English for Academic Purposes: A Handbook-Workbook for College Freshman English (Mass Market Paperback)
by Concepcion D. Dadufalza
- Lecture Notes/Presentations

5TH SEMESTER COURSE

- 1. MEDICINE-III**
- 2. SURGERY-III**
- 3. FIRST AID & PATIENT SAFETY**
- 4. BASIC EPIDEMIOLOGY-I**
- 5. ETHICS AND MANAGEMENT**

Aims and Objectives:

To introduce to the student the significant of cardiology disorders and Pulmonology disorder and preventive, curative care, patient receiving, taking history, assessment, investigation in OPD and maintain the patient and ward record in cardiology and Pulmonology

Course Contents:

Circulatory system, Coronary heart disease

Circulatory system, hypertension, Rheumatic heart diseases, heart failure Upper Respiratory infections acute coryza, acute tonsillitis, laryngitis, bronchitis Lower Respiratory Tract Infections, Pneumonia's,

Pulmonary T.B, COPD, Asthma Diseases of cardiovascular system

Disturbance of rate and rhythm, myocarditis, pericarditis, endocarditis, Chronic valvular disease, myocardial degeneration, the angina syndrome, congenital cardiac failure, hypertension and arteriosclerosis, essential

hepertonens, thromboangitis obliterans, vasomotor disorders, raynald's disease, acroparastesia, venous conditions, thromboangitis oblitranse embolish, varicose, veins, diseases of the blood, anemia.

Diseases of respiratory tract

Bronchitis, bronchiectasis, pleurisy, empyema, emphysema, pneumonia, lung abscess, tuberculosis of the lungs, asthma, hayfever

Patient attending, assessment, provisional diagnosis, treatment plan in investigations, output input chart, temperative chart, special investigation chart, provisional, differential diagnosis patient ad ward record and preparation the patient for discharge

RECOMMENDED BOOK:

Clinical Medicine by Parveen Kumar, Michalclark in 1994 by ELBS Principal and practice of medicine by CRW Adwarsetal in 1995 by ELBS

Aims and Objectives:

To introduce to the student the significant of Eye disorders, preventive, curative care and patient receiving, taking history, assessment, investigation in OPD, maintain the patient and ward record in Eye OPD and ward

Course Contents:

Eye problems conjunctivitis (Allergic, seasonal, bacterial and viral keratitis Eye problems Uvites, Extra ocular foreign bodies, injuries to eye

Inflammation of eye lids Dacrocyslites, cataract

Patient attending, assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigations, output input chart, provisional, differential diagnosis, patient and ward record Preparation for surgery, pre and post operative care and preparation the patient for discharge

RECOMMENDED BOOKS:

Basic Ophthalmology (by Goggi)

Clinical Medicine by Parveen Kumar, Michalclark in 1994 by ELBS

Aims and Objectives:

- To understand the Importance of First Aid & Patient Safety.
- To understand the Safety of patient & how to treat the First Aid patient.
- To utilize their knowledge scientifically

Course Contents:**PATIENT SAFETY:****INFECTION AND DISINFECTING**

Introduction-Terminology-Methods of disaffection

Sources of infection-routes of transmission i.e., air water and food

COMMUNICABLE DISEASES

Introduction-EPI and diseases related to it, vaccination schedule.

Communicable diseases like T.B, diphtheria, tetanus, polio, whooping cough and measles Epidemiology and prevention methods for above diseases.

FAMILY PLANNING

Need and objectives-general methods.

FIRST AID

1. First Aid , Definition, Principles, Actions at emergency
2. Dressing + Bandages
3. Short structure & function of respiratory system
4. Asphyxia
5. Assisted respiration
6. Short structure and function of C.V.S
7. Shock (Circulatory failure) Patho-Physiology
8. Cardiogenic shock Treatment
9. Hypo-volume shock (Hematologic) with treatment other condition
10. Anaphylactic Shock Signs, Symptoms, Treatment
11. Septic Shock
12. Neurogenic shock
13. Cardiopulmonary resuscitation principles practical demonstration
14. Assessment of newborn
15. Resuscitation of new born
16. Short structure & function of locomotive, sprains and strains
17. Fractures, First Aid Management
18. Burns, Scalds causes and First Aid Management
19. Wounds cuts stabs and management
20. Management of Bleeding from wound/Nose/Mouth/Misc
21. Drowning – first aid management

22. Road traffic accidents (First Aid Management)
23. Transport of injured persons especially spinal are
24. Care of Coma/Stupor unconscious victim
25. Poisonings-swallowed persons and first aid management
26. Poisonings inhalation poisonings first aid management
27. Bites Stings management human, cat dog insect
28. Snake bite and first aid management
29. Phylactic Shock and its management
30. Choking (Foreign body in airway)
31. Abdominal pain (First Aid)
32. Sport injuries
33. Safety at home precautions/safety
34. Precautions at kitchen to avoid accidents
35. Precautions at bathroom
36. Precautions in living room
37. Precautions at stairs and at terraces

Recommended Books:

1. **Book Review Pet First Aid - Cats and Dogs.**
2. **Introduction to Public Health, Second Edition**
Promises and Practice Goldsteen, Raymond L. / Goldsteen, Karen / Dwelle, Terry

Aims and Objectives:

To introduce to the students the know-how of the subject of epidemiology in order to apply the knowledge of the subject regarding the community and community relate disease.

Course Contents:

1. Introduction to epidemiology
2. Determinants
 - a. Primary
 - b. Secondary
3. Clinical epidemiology

RECOMMENDED BOOKS:

Public Health by Ilyas Ansari
Public Health
by J Park

Course Objectives:

To introduce to the student of medical ethics their behavior with patients and medical staff and management of different wards, departments includes the equipments records and their duties.

Course Contents:**Ethics:**

Ethical conduct, relationship with patient, surgeon, physician, nurse, social workers and co-workers, preparation and uses of records, report, physical plant, equipments.

The implementation of and confirmation to the rules of professional context and understanding, the paramedic liability and obligations in the case of medico legal action, a wider knowledge of ethics relating to current social and medical policy in the paramedic society as a professional association, the role of international health agencies such as world health organization.

RECOMMENDED BOOKS:

Management A modern hospital by AV Srinivasa response book sage publication New Dehli London and 2005

Hank book of hospital personal management by RC Goyal Prentice Hall of indial New Dehli in 1994

Medical ethic by Dr. Mehmood Alam in 2006 by Health Department NWFP

6TH SEMESTER COURSE

- 1. MEDICINE-IV**
- 2. SURGERY-IV**
- 3. BASIC EPIDEMIOLOGY-II**
- 4. PUBLIC HEALTH**
- 5. RESEARCH METHODOLOGY**

Aims and Objectives:

To introduce to the student the significant of alimentary tract disorders and neurology disorder, preventive, curative care and patient receiving, taking history, assessment, investigation in OPD, maintain the patient and ward record in medical and neurology

Course Contents:

Diseases of the alimentary tract acute Gastro enteritis, Gastritis, Peptic Ulcer
Worm infestation, Pin worm, thread worm, Hook worm Tape worm Liver Diseases (Viral Hepatitis 9ABC) liver Cirrhosis, Liver Failure
Disease of the nervous System (headache, meningitis, convulsions, coma, strokes, Sub Arachnoids hemorrhage, movement disorder
Blood Disorder (Anemia and its type's leukemia, Thrombocytopenia, Hemophilia
Diseases of the nervous system (neurology)
Upper moterneurone lesions lower motor neuron lesions extra-pyramidal system, cerebellum and sensory system: hemilegia, paraplegia, monoplegia, facial paralysis, acute infections, encephalitis and herpes Zoster. Vascular disorders of he brain, hemiplegic, rheumatic chorea, multiple-peripheral neuritis. Neuralgia, motor neuron disease, cerebral palsy and poliomyelitis, muscular dystrophies, thoracic inlet Syndrome, Acroparaesthesia, disseminated sclerosis, sub acute combined degeneration of the cord, Frederic's ataxia, parkinsonism
Patient attending, assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigation chart, provisional, differential diagnosis, patient and ward record and preparation the patient for discharge

RECOMMENDED BOOKS:

Clinical Medicine by Parveen Kumar< Michalclark in 1994 by ELBS Principal and practice of Medical by CRW Adwardsetal in 1995 dby EIBS

REFERRAL BOOK:

Robbins pathology in 1998 by IE sounder

Aims and Objectives:

To introduce to the student the significant of General Surgery disorders, preventive, curative care and patient receiving, taking history, assessment, and investigation in OPD, maintain the patient and ward record in General Surgery OPD and ward.

Course Contents:

Sign/Symptoms, first aid referred knowledge of surgical problem acute appendicitis surgical problem (intestinal) acute intestinal obstruction chest injuries/abdominal injuries.

Surgical V.T.I Renal Colic Acute urinary Obstruction Surgical U.T.I

Haematuria Catheterization

General Surgery

Wound, ulcer, boil, abscess, caruncle, varicose veins hemorrhage, shock hernia and hydrocele, varicocele

Plastic, surgery

Basic principles of plastic surgery and reconstruction, burns, and its management, reconstruction surgery

Hair, lip, cleft palate, syndactily, polydactily

Introduction, etiology and pathogenesis, principal signs and symptoms, diagnostic Methodology, out line of medical treatment. The place Physiotherapy, clinical case discussion and demonstration

Surgery of body systems

Surgery of G.I tract and related viscera, surgery of oesophagus, stomach, appendix gall bladder, intestine, bile duct, liver, splenectomy, genitourinary system prostate, kidney, ureter, bladder, surgery of endocrine glands and breast.

Patient attending, assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigations, output input chart, temperature chart, special investigation chart, provisional, differential diagnosis, patient and ward record

Preparation for surgery, pre and post operative care and preparation the patient for discharge

RECOMMENDED BOOKS:

Text book of surgery 4th edition by Dr. Hai Rabindra B. Shrivastava,

Published by publishing company Ld new Delhi Robbins pathology 6th edition 1998 IE sounde

Aims and Objectives:

To introduce to the students the know-how of the subject of epidemiology in order to apply the knowledge of the subject regarding the community and community relate disease.

Course Contents:

1. Occupational Introduction to epidemiology
Determinants
 - a. Primary
 - b. Secondary
1. Clinical epidemiology

RECOMMENDED BOOKS:

Public Health by Ilyas Ansari
Public Health by J Par

Aims and Objectives:

To introduce to the students the significance of the discipline of public health in medical and applied social sciences regarding its history applications and development.

Course Contents:

1. Basic definition
2. Primary health care
3. Nutrition
4. Water supply
5. Sanitation
6. Mother and child health (MCH)
7. Family planning

8. Immunization
9. Mental Health
10. Drug abuse
11. Health Education
12. Health management information system
13. Health system research
14. Biomedical ethics

RECOMMENDED BOOKS:

Ilyas Ansari's community medicine (text book) by Ilyas and Ansari 2003 published by Medical division Urdu Bazaar Karachi

K Park's community medicine (Reference book) by K Park 2003 Published by Banarside

Bhanot Jaipur India.

Aims and Objectives:

To introduce the significance of research methodology foundation, concept of measurement, design clinical research and health system research to the students.

Course Contents:

Introduction to research (in simple term and a scientific term), concept of research, why do need research, advantage of research, identification of research need and its qualities, component of research, ethical and legal aspect of research and objective of research (definition, purpose, structure) Relevance, Avoidance of duplication, Feasibility, Political acceptability, Applicability, Cost efficiencies, work plan, budget required for research work, literature searching, statistical help, material, type of manuscript, printing of manuscript for submission and postage, Principles and reliability of measurement, errors and sources of measurement, types of measurement, measure of disease frequency and screening (introduction, validity and screening test) Studies design (introduction, selection of design), research questionnaire, validity and reliability of research finding, confounding factors, strategies to deal with threats to validity, hypothesis testing, sampling, collect data, data collection procedure, step and data collection survey questionnaire, starting questionnaire

Recommended Books:

1. Foundation of Clinical Research by Portney LG Walkais MP in 1993, Publisher by Appleton and lauge USA
2. A guide to Research Methodology, Biostatistics and Medical writing by college of physicians and surgeons Pakistan by WHO collaboration center
3. Health system research project by Corlien M Varkerisser, Indra Pathmanathan, Ann Brownlee in 1993 by International Development Research Center in New Dehli, Singapore.

7TH SEMESTER COURSE

- 1. MEDICINE-V**
- 2. MCH, EPI**
- 3. COMMUNICABLE & NON-COMMUNICABLE DISEASE**
- 4. NUTRITION**
- 5. HEALTH MANAGEMENT & POLICY**

Aims and Objectives:

To introduce to the student the significance of urinary disorders and endocrine disorder, preventive, curative care and patient receiving, taking history, assessment, investigation in OPD, maintain the patient and ward record in nephrology and medical

Course Contents:

Disease of the UT Urinary Tract infection, Nephric System, Urinary stone Endocrine disorder Hypothyroidism Graves's diseases Medical Unite Endocrine disorder Diabetes mellitus

Disease of connective Tissue Rheumatoid Arthritis, osteo, arthritis SLE Sigh and symptoms of renal diseased, clinical assessment of hyponetrimia Hpernetrimia, metabolic acidosis, respiratory acidosis alkalosis, Syperlalmia, hypocalcaemia, hperphosphateia, oedema and clinical use of diuretics

Introduction to glomerula disease, renal involvement in cardiovascular disease/connective tissue disorder diabetes chest disease cancer git disease, etiology and path physiology of acute renal failure, acute renal failure and metabolic derangement, Developmental disorder of the kidney, urea and bladder, pathology of common renal disease, pathology of acute renal failure, chronic renal failure, renal cell carcinoma, functional pathology of kidney, acid base, fluid, electrolyte disorder, patient attending, assessment, provisional diagnosis, treatment plan in investigations, output input chart, temperature chart, special investigation chart, provisional, differential diagnosis, patient and ward record and preparation the patient for discharge

RECOMMENDED BOOKS:

Clinical Medicine by Parveen Kumar, Michal lark in 1994 by ELBS Principal and practice of Medicine by CRW Adwardsetal in 1995 by ELBS

REFERRAL BOOK:

Current Medical Diagnosis and Treatment

General pathology by Walten Israel 9h edition in 1999 by Churchill living stone

Aims and Objectives:

To introduce to the student the significant of mother and child disorders and six target diseases. Preventive, curative care and patient receiving, taking history, assessment, investigation in OPD, maintain the patient and ward record in Gyne ward labor room, antenatal room and EPI unit

Course Contents:

M.C.H Maternal & child health antenatal care nutrition

Patient attending, assessment, provisional diagnosis, treatment plan in OPD, patient receiving, admission, history taking, assessment, investigations, output input chart, temperature chart, special investigation chart, provisional, deferential diagnosis, patient and ward record

Preparation for surgery, pre and post operative care and preparation the patient for discharge

Patient assessment in labor room and Gyne OT

E.D.D.C Diarrhea and Dehydration Dysentery Meningitis (EDDC) Hyperpyrexia

E.P.I Six Target Disease their vaccination schedule Routes of administration doses of vaccine

E.P.II Cold chain definition, maintenance, clinical significance

RECCOMENDED BOOKS:

Conveat clinical management of obstetrics and gynecology disease 9th edition Rashid A. Latif
Gynecology

Aims and Objectives:

To understand key concepts of communicable and chronic non-communicable disease epidemiology with reference to developing countries and Pakistan and the role of health care provider in the prevention and control of communicable and chronic non-communicable disease. Skills to describe the interaction between the infectious agents and host factors (resistance and susceptibility) that contribute to the transmission of these diseases and the role of host factors in conferring both resistance and susceptibility to these diseases

Course Contents:

Introduction of CDC, Tuberculosis, Control of Infection, Screening of Disease, Malaria, Dengue fever, Road Traffic Accidents & Safety, Skin Infection, Bird flu, Hospital acquired infection, Disease outbreak investigation, Mental health, Stroke, Diabetes- A Major Public Health Problem, Hepatitis-C, Obesity, Rabies.

Recommended Reading/Text

1. Preventive & Social Medicine by K. Park
2. Community Medicine in Public Health by Ilyas Shah Ansari
3. Communicable and Non-Communicable Disease Basics: A Primer by Madeline M. Hurster
4. An Introduction to Community Health By James F. McKenzie, Robert R. Pinger, Jerome E Kotecki

Aims and Objectives:

The purpose of this course is to examine epidemiologic methodology in the relation to nutrition measure and to provide an overview of the current state of knowledge regarding diet as an etiologic factor in disease. The course will include a guest faculty from the department of nutrition to review methods for assessing dietary intake including the advantages and limitation of different diet assessment techniques and the levels and sources of measurement error in nutritional assessment. The course designed to provide an overview of nutritional epidemiology content and concept and enable investigators outside of nutrition to develop an understanding of nutrition/ dietary measurements and analysis, incorporate appropriate nutritional measure in their studies and better communicate and collaborate with nutritional researchers.

Course Contents:

- Nutrition / disease relationship through the application of epidemiologic methods.
- Measure of exposure and outcome in nutritional epidemiology
- Dietary intake and biomarkers
- Diet/ nutrition and disease prevention
- Specific studies of diet, nutrition and disease.

Recommended Reading/Text:

Eleanor Noss Whitney and Sharon RadyRolfes. Understanding Nutrition. 9th edition. 2002. Wadsworth Group, California, USA. 7th Edition, 1988. Philadelphia, USA.

Sareen S. Gropper, Jack L. Smith and James L. Groff. Advanced Nutrition and Human Metabolism. April 2004.

Aims and Objectives:

Health planning is major task of public health professional working in the government and the private sector in position of program and project manager, at district and below. Public health professionals are required to have sound knowledge and skill to plan, implement and monitor the program at the prescribed levels.

Course Contents:

- List the sequential steps of the micro planning cycle.
- Explain the difference and relationship between different types of planning.
- Apply certain tools and technique for district health and project planning.
- Develop a district health plan/ program implementation plan with an adequate budget.
- Conduct a stakeholder analysis in the process of policy development.
- Understand the implementation modalities of macro level and micro level policy decisions at micro level (translation of policies into action)
- Describe the policy procedure that exist in Pakistan and in other countries and critique their strengths and weaknesses.

Recommended Reading/ Text:

1. Green A. An introduction to health planning in developing countries, 2nd ed. Oxford:Oxford University Press; 1999.
2. Kielmann AA, Siddiqi S, Mwadime RK. District health planning manual: toolkit for district health managers. Islamabad, Pakistan: Multi –donor support unit, Ministry of health; 2002.
3. Kielmann AA, Janovaky K, Annett H. Assessing district health needs, services and systems:protocols for rapid data collection and analysis. London, UK: Macmillan Education Ltd and AMREE; 1995.
4. Newell K. The way ahead for district health systems. World Health Forum.

8TH SEMESTER COURSE

1. RESEARCH PROJECT

2. SEMINAR

3. SUBJECT ON OWN INTEREST

Aims and Objectives:

The student will learn some basic research methodology, gain knowledge of the specific area of Emergency & Intensive Care being researched and have the opportunity for more extensive one-on-one interaction with a member of the Emergency & Intensive Care staff. It will hopefully result in some form of presentation or publication for the student. This is most suitable for students planning to enter Emergency & Intensive Care as a career

Course Contents:

- Preparation and evaluation of Technical Comparative statement of specifications of Emergency. Students will select a modality item among the Medical Intensive Care modalities and prepare a comparative Statement of same modality manufactured by various manufacturers.
- Comparison of two different Modalities for any specific investigation Students will select a topic under the guidance of their teacher to compare the investigation of two different modalities for the same human body system

Example:

- (i) Heart Attack
- (ii) Electric Shock
- (iii) Head Injury

- Students will prepare a comprehensive report on their selected research topic.

Aims of the Seminar

The student will have to attend at least one seminar on Emergency & Intensive Care related topic. The seminar will enhance their skills and knowledge regarding the subject and will also help in their final research topic.

Student will have to select one optional subject from the following subjects.

1. Medical sociology
2. Medical Bio Ethics
3. First Aid
4. Public Health

MEDICAL BIOETHICS

Course Objectives:

To introduced the students with medical ethics, their behavior with patients and medical Staff.

Course Contents:

Ethical conduct, relationship with patient, surgeon, physician, nurse, social workers and co-workers, preparation and uses of records, report, physical plant, equipments. The implementation of and confirmation to the rules of professional context and understanding, the paramedic liability and obligations in the case of medico legal action, a wider knowledge of ethics relating to current social and medical policy in the paramedic society as a professional association, the role of international health agencies such as world health organization.

Recommended Books:

Medical ethic by Dr. Mehmood Alam in 2006 by Health Department NWFP