

CURRICULUM
OF
BACHELOR OF HOMEOPATHIC
MEDICAL SCIENCES
(BHMS)

(Revised 2010)



HIGHER EDUCATION COMMISSION
ISLAMABAD

CURRICULUM DIVISION, HEC

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PREFACE

The curriculum of subject is described as a throbbing pulse of a nation. By viewing curriculum one can judge the stage of development and its pace of socio-economic development of a nation. With the advent of new technology, the world has turned into a global village. In view of tremendous research taking place world over new ideas and information pours in like of a stream of fresh water, making it imperative to update the curricula after regular intervals, for introducing latest development and innovation in the relevant field of knowledge.

In exercise of the powers conferred under Section 3 Sub-Section 2 (ii) of Act of Parliament No. X of 1976 titled “**Supervision of Curricula and Textbooks and Maintenance of Standard of Education**” the erstwhile University Grants Commission was designated as competent authority to develop review and revise curricula beyond Class-XII. With the repeal of UGC Act, the same function was assigned to the Higher Education Commission under its Ordinance of 2002 Section 10 Sub-Section 1 (v).

In compliance with the above provisions, the HEC undertakes revamping and refurbishing of curricula after regular intervals in a democratic manner involving universities/DAIs, research and development institutions and local Chamber of Commerce and Industry. The intellectual inputs by expatriate Pakistanis working in universities and R&D institutions of technically advanced countries are also invited to contribute and their views are incorporated where considered appropriate by the National Curriculum Revision Committee (NCRC).

To bring international compatibility to qualifications held from Pakistani universities/DAIs for promotion of students mobility and job seekers around the globe, a Committee comprising of Conveners of the National Curriculum Revision Committee of HEC met in 2009 and developed a unified template for standardized 4-years/8-semester BS degree programmes. This unified template was aimed to inculcate broader base of knowledge in the subjects like English, Sociology, Philosophy, Economics etc in addition to major discipline of study. The Bachelor of Homeo Pathic Medical Sciences (BHMS) degree course requires to be completed in 5-years/10-semester, and shall require qualifying of 176 credit hours.

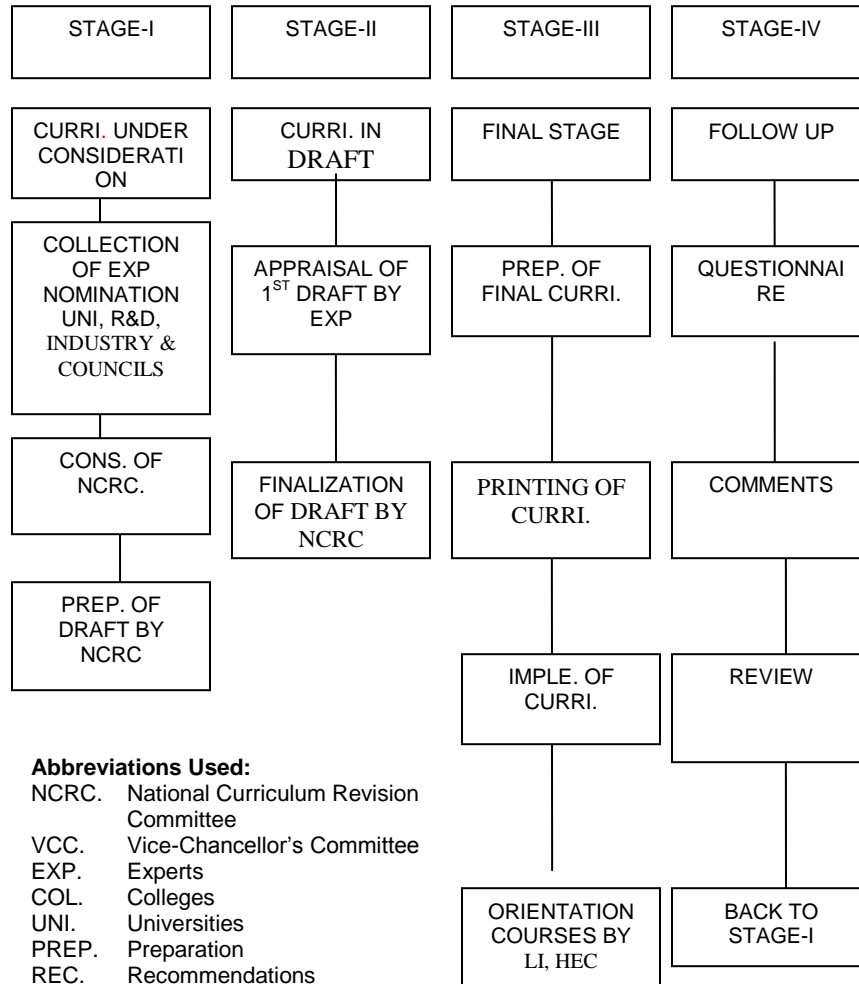
In line with above, NCRC comprising senior university faculty and experts from various stakeholders and the respective accreditation councils has finalized the curriculum of (BHMS). The same is being

recommended for adoption by the universities/DAIs channelizing through relevant statutory bodies of the universities.

PROF. DR. ALTAF ALI G. SHAIKH
Member Academics

March 2010

CURRICULUM DEVELOPMENT



Abbreviations Used:

- NCRC. National Curriculum Revision Committee
- VCC. Vice-Chancellor's Committee
- EXP. Experts
- COL. Colleges
- UNI. Universities
- PREP. Preparation
- REC. Recommendations
- LI Learning Innovation
- R&D Research & Development Organization
- HEC Higher Education Commission

CURRICULUM FOR BACHELOR OF HOMEOPATHIC MEDICAL SCIENCES

Part-I

1. The nomenclature of the degree will be Bachelor of Homeopathic Medical Sciences (BHMS).
2. The Degree course of BHMS shall comprise a course of study consisting of the Curriculum extended over duration of five years.
3. The academic studies will be followed by one year of compulsory internship in the Hospital attached to the Homoeopathic College or affiliated with college or in the recognized and experienced clinics.
4. On the completion of internship for a specified period of time and on the recommendation of the Head of the institution where internship was undertaken, the National Council for Homoeopathy shall issue the registration (RHMPM) to the successful candidates.

PART II

PREREQUISITES FOR ADMISSION:

1. The minimum qualification for admission in BHMS Five Years Degree Program is Intermediate (F.Sc.) with pre-medical group of subjects with minimum 50% marks.
2. The candidates with B.Sc. degree (minimum 50% marks) will also be considered for admission provided they have passed the intermediate examination (minimum 50% marks) with pre-medical subjects.

OBJECTIVES OF THE COURSE

Pakistan is a developing country and majority of its population is devoid of sufficient health facilities. For this reason, there is need for a system of Alternative Medicine, which can provide treatment facilities for different ailments and complications. Homoeopathy is already taught (up to Diploma Level) and practiced under the supervision of National Council for Homoeopathy and Federal Ministry of Health. Bachelor of Homoeopathic Medical Sciences (BHMS) Degree Course will offer highly skilled professionals to this alternative system of medicine for the needs and requirements in healthcare of our masses. Following are the objectives of teaching Homoeopathy at Graduation level.

- Main objective of this course is to produce graduates with knowledge of classical homeopathy with latest technology and modern methods to approach diseases.
- To deliver the graduates adequate theoretical knowledge, practical skills and clinical understanding to make them able to diagnose various health problems and design the plan of treatment according to Homoeopathic System of Medicine.
- To make the BHMS graduates able to plan and execute research programs aimed at solving the health problems of our country.
- To make the graduates able to demonstrate their professional responsibilities in the best interest of the patients, implementing preventive and curative medicine.
- To determine how certain Homoeopathic medicines may fit into current wellness and treatment strategies.
- To give the Homoeopathic professionals sufficient understanding of the ethical, legal and regulatory challenges related to Homoeopathy.
- The graduate Homoeopathic professionals will be able to provide treatment facilities to the population in a very economical way as Homeopathic medicines are cost effective as compared to other systems of Medicine.
- This course also aims to educate and train the professionals so that they will be competent enough to be capable of functioning independently and effectively

SCHEME OF STUDIES FOR SEMESTER SYSTEM

B.H.M.S First Year

Semester-I		
Course Code	Name of Course	Credit Hours
101	Anatomy-I (a)	2+1
103	Physiology-I (a)	2+1
105	Biochemistry-I	3+1
107	Philosophy of Homeopathy-I (a)	2
109	English-I	2
111	Islamic Studies/Ethics	2
Total Courses 6		13+3
Semester-II		
Course Code	Name of Course	Credit Hours
102	Anatomy-I (b)	2+1
104	Physiology-I (b)	2+1
106	Biochemistry-II	3+1
108	Philosophy of Homeopathy-I (b)	2
110	English-II	2
112	Pakistan Studies	2
Total Courses 6		13+3

B.H.M.S Second Year

Semester-III		
Course Code	Name of Course	Credit Hours
201	Anatomy-II (a)	2+1
203	Physiology-II (a)	2+1
205	Mathematics	2
207	Philosophy of Homeopathy-II (a)	3
209	Materia Medica-I (a)	3
211	Bioinformatics-I	2+1
Total Courses 6		14+3
Semester-IV		
Course Code	Name of Course	Credit Hours
202	Anatomy-II (b)	2+1
204	Physiology-II (b)	2+1
206	Biostatistics	3
208	Philosophy of Homeopathy-II (b)	2
210	Materia Medica-I (b)	2+1
212	Bioinformatics-II	2+1
Total Courses 6		13+4

B.H.M.S Third Year

Semester-V		
Course Code	Name of Course	Credit Hours
301	Pathology-I	2+1
303	Microbiology and Parasitology-I	2+1
305	Pharmacognosy-I	2+1
307	Homeopathic Pharmacy-I	2+1
309	Homeopathic Philosophy-III (a)	3
311	Materia Medica-II (a)	3
Total Courses 6		14+4
Semester-VI		
Course Code	Name of Course	Credit Hours
302	Pathology-II	3+1
304	Microbiology and Parasitology-II	2+1
306	Pharmacognosy-II	2+1
308	Homeopathic Pharmacy-II	2+1
310	Homeopathic Philosophy-III (b)	2
312	Materia Medica-II (b)	2+1
Total Courses 6		13+5

B.H.M.S Fourth Year

Semester-VII		
Course Code	Name of Course	Credit Hours
401	Gynecology and Obstetrics-I	2+1
403	Materia Medica-III (a)	3
405	Psychology and Psychiatry	3
407	Forensic Medicine and Toxicology-I	3
409	Pediatrics-I	3
411	Homeopathic Therapeutics-I (a)	3
Total Courses 6		17+1
Semester-VIII		
Course Code	Name of Course	Credit Hours
402	Gynecology and Obstetrics-II	2+1
404	Materia Medica-III (b)	2+1
406	Ophthalmology and ENT	3+1
408	Forensic Medicine and Toxicology-II	2
410	Pediatrics-II	2+1
412	Homeopathic Therapeutics-I (b)	2+1
Total Courses 6		13+5

B.H.M.S Final Year

Semester-IX		
Course Code	Name of Course	Credit Hours
501	Clinical Methods and Diagnostics-I	3
503	Case Taking and Repertorization-I	3
505	Materia Medica-IV (a)	3
507	Homeopathic Therapeutics-II (a)	3
509	Surgery-I	3
511	Preventive and Community Medicine-I	3
Total Courses 6		18
Semester-X		
Course Code	Name of Course	Credit Hours
502	Clinical Methods and Diagnostics-II	2+1
504	Case Taking and Repertorization-II	2+1
506	Materia Medica-IV (b)	2+1
508	Homeopathic Therapeutics-II (b)	2+1
510	Surgery-II	2+1
512	Preventive and Community Medicine-II	2+1
Total Courses 6		12+6

- Total numbers of Credit hours
174+2=176
- Duration 5 years
- Semester duration 16-18 weeks
- Semesters 10
- Course Load per Semester 16-18 Cr hr
- Number of courses per semester 6

NOTE: The students taking the projects will be evaluated in the relevant practical (Homoeopathic Materia Medica, Homoeopathic Therapeutics or Case Taking and Repertorization) by the external examiner. The total Credit Hours of each of the project will be 2.

TEACHING METHODOLOGY:

Teacher of each subject will assign a topic to the students. They will get the information from library/internet etc and an interactive session of the students will be conducted in the presence of teacher

BHMS FIRST YEAR

SEMESTER-I

COURSE CODE: **101**
COURSE NAME: **ANATOMY-I (a)**
CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

- To learn different concepts in general Anatomy, Histology and Embryology

COURSE OUTLINE:

GENERAL ANATOMY

1. Brief history of Anatomy. Different disciplines of the subject
2. Anatomical nomenclature-descriptive terms
3. Skeletal system-bones
 - Axial skeleton
 - Appendicular skeleton
 - Functions of bone
 - Classification on the basis of shape, development, region and structure
 - General concepts of development & ossification of bones
 - Parts of young bone
 - Blood supply
 - Properties of bones and cartilages
 - Applied aspects
4. JOINTS
 - Structural classification
 - Regional classification
 - Functional classification
 - Characteristics and classification of Synovial joints
 - Movements of Synovial joints
 - Anatomy of joints with reference to dislocation, sprain and inflammation
5. MUSCLE
 - Parts of a muscle
 - Classification
 - Blood supply and nerve supply of muscle
 - Neuromuscular junction
 - Applied anatomy of muscle with reference to spasm, paralysis, atrophy and regeneration

6. CARDIOVASCULAR SYSTEM

- Heart & Blood vessels
- Types of circulation
- Anastomoses

7. LYMPHATIC SYSTEM

- Introduction
- Lymph capillaries
- Lymph Vessels
- Lymph nodes
- Main channels

8. SOMATIC NERVOUS SYSTEM

- Introduction
- Different parts of Central Nervous System (CNS) with their brief functions
- Peripheral nervous system (cranial and spinal nerves)-introduction

9. AUTONOMIC NERVOUS SYSTEM

- Introduction to parasympathetic and sympathetic nervous system

10. SKIN AND FASCIAE

- Parts & Appendages of skin
- Types of fasciae

11. EMBALMING & MUSEUM KEEPING

GENERAL HISTOLOGY

1. CELL: Cell as a whole, Cell Membrane, Interior of cell, Nucleus
2. Microscopy
3. Epithelial tissues
4. Connective tissue proper
5. Cartilage
6. Bone
7. Muscular tissue
8. Lymphoid organs
9. Circulatory system
10. Integumentary system
11. Routine histological technique
12. NERVOUS SYSTEM: Nervous tissue, Cerebral cortex, Cerebellar cortex, Spinal cord

GENERAL EMBRYOLOGY

Embryology should be taught with the object of making students understand and grasp those fundamental principles, which result in better comprehension of the structural organization in the body. Stress should be laid on those developmental processes such as growth and differentiation, which have a direct bearing on clinical subjects. The

genesis of congenital malformations should be one of the chief aims. All details should be kept on the essential outlines.

1. Male & female reproductive systems
2. Cell Division and Gametogenesis
3. Fertilization, cleavage, blastocyst formation and implantation
4. Development during second week
5. Development during third week
6. Embryonic period
7. Foetal period
8. Foetal membranes and Placenta
9. Introduction to genetics.
10. Teratogenesis

PRACTICAL

- Routine and special stained slides of all the tissues and organs of body.
- Electron-micrographs to demonstrate filtration barrier of kidney, alveolar septum, tight junctions of capillaries and such relevant areas.

COURSE CODE: **103**

COURSE NAME: **PHYSIOLOGY-I (a)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To make students able to:

- Understand the fundamental concepts related to structure and function of cell.
- Present a comprehensive account of the chemistry and functions of blood.
- Understand the functions and role of nerve and muscle

COURSE OUTLINE:

- Basic concepts
- Clinical/Applied Concepts
- General Physiology/Cell
- Functional organization of human body
- Abnormalities of cell and its organelles
- Homeostasis
- Control system in the body
- Cell membrane and its functions
- Intracellular connections
- Cell organelles
- Transport through cell membrane
- Genetics

BLOOD

- Composition and general functions
- Plasma proteins
- Red blood cells (erythrocytes) Anemia
- Hemoglobin and blood Indices, Iron Blood indices in various disorders
- Metabolism, Fate of Hb.
- White blood cells, Leucopoiesis, functions Leucopenia, Leucocytes
- Platelets
Thrombocytopenia
- Homeostasis Clotting disorders (Hemophilia etc.)
- Blood Groups, Blood transfusion and Complication Blood grouping/cross matching and significance
- Reticuloendothelial system- Spleen Immunity

NERVE AND MUSCLE

- The neuron – structure and functions
- Properties of nerve fibers Nerve conduction studies
- Physiology of action potential including EMG
- Compound action potential
- Conduction of nerve impulse, Nerve injury
- Degeneration and regeneration
- Synapses
- Structure of Muscle
- Skeletal muscle contraction Rigor mortis and contractures
- Isometric and isotonic contraction
- Smooth muscle contraction
- Neuromuscular transmission Myasthenia gravis
- Excitation contraction coupling Myopathies/ Neuropathies
- Motor unit
- Neuromuscular blockers

PRACTICAL

- Study of the microscope
- Hemoglobin Percentage Estimation
- Erythrocyte sedimentation rate (ESR)
- Packed cell volume (PCV) / Haematocrit
- Bleeding time (BT)
- Clotting time (CT)
- Blood Groups
- Study of Neubauer Chamber

- RBCs Count, Red cell indices
- Differential leucocyte Count (DLC)
- Osmotic fragility of RBCs
- Demonstration of prothrombin time and thrombin time

COURSE CODE: **105**

COURSE NAME: **BIOCHEMISTRY-I**

CREDIT HOURS: **3+1**

SPECIFIC OBJECTIVES OF COURSE:

- This course provides fundamental concepts in Biochemistry, which focuses upon the major macromolecules and chemical properties of living systems.
- Primary topics include the structure, properties and functions of amino acids, proteins, carbohydrates, lipids and nucleic acids.
- It also focuses on biochemical role of enzymes, minerals, vitamins and Biochemistry of gastrointestinal tract

COURSE OUTLINE:

INTRODUCTION TO BIOCHEMISTRY

BIOCHEMISTRY OF THE CELL AND BODY FLUIDS: Ionization of water and weak acids, bases, Concept of pH, and pH scale, Buffers, their mechanism of action, Importance of selectively permeable membranes, osmosis, osmotic pressure, surface tension, viscosity and their importance related to body fluids

CARBOHYDRATES: Definitions, biochemical functions and classification, Structure and function of Monosaccharide, and their derivatives, Disaccharides, their important examples, Oligosaccharides, their combination with other macromolecules, Polysaccharides, their important examples and biochemical role, The biomedical importance of carbohydrates

PROTEINS: Definitions Biomedical importance and classification of proteins based on Physiochemical properties, Functional, Nutritional, Structural, Amino acids their structure, properties and functions, Classification and nutritional significance of amino acids.

NUCLEOTIDES AND NUCLEIC ACID: Chemistry and structure of nucleotides and their biomedical role, Nucleotides, structure, their

derivatives and their biomedical role, Nucleic acids, their types, structure and function.

LIPIDS: Definition, biomedical function, Classification of lipids, Phospholipids, Glycolipids, Sphingolipid and their biomedical significance, Fatty acids, chemistry, classification and biomedical functions, Essential fatty acids, Eicosanoids, their classification and functions in health and disease, Steroid, sterol e.g. Cholesterol, their chemistry, functions and clinical significance,

ENZYMES: Introduction definition mechanism of catalysis, Coenzymes, Co factors, Iso enzymes their clinical significance, Factors affecting enzyme activity Enzymes inhibitor their classification and biomedical importance, Application of enzymes in clinical diagnosis and therapeutic use.

BIOCHEMISTRY OF DIGESTIVE TRACT: Introduction of digestion and absorption, Introduction and composition functions daily secretion stimulants and depressant of: saliva; i) Gastric juice and HCl. ii) Pancreatic juice, iii) Bile juice iv) Succes Entricus, Digestion and absorption of carbohydrates, proteins, nucleic acid and lipids, Biochemical disorders of GIT e.g. achlorhydria, peptic ulcers lactose intolerance, cholelithiasis and related disorders.

VITAMINS: Introduction classification, Chemistry biochemical functions deficiency manifestations daily allowances and source of water soluble and fat soluble vitamins, Hypervitaminosis.

MINERAL AND TRACE ELEMENTS: Classification and biochemical role; Macro minerals (Na, K, Ca, Cl, PO₄), Micro minerals (Fe, Zn, Mg, Se, I, Cu, Cd, Mn)

PRACTICAL

- Introduction to use of Laboratory facilities/equipments
- Basic techniques and fundamental information.
- Preparation of solutions – Normal solution and Normal saline
- Experiments on Carbohydrate – Qualitative Analysis
- Experiments on Proteins – Qualitative Analysis
- Experiments on Fats – Qualitative Analysis
- Chemical Analysis of Urine – Normal and Abnormal Specimens

COURSE CODE: **107**

COURSE NAME: **PHILOSOPHY OF HOMOEOPATHY-I (a)**

CREDIT HOURS: **2**

SPECIFIC OBJECTIVES OF COURSE:

A student of first year, as a new comer in field of Homoeopathy will have a lot of questions about the history and scope of Homoeopathy. This course aims to give the students awareness of past, present and future of Homoeopathy, so that their minds should be clear and have no confusions regarding Homoeopathy as a field of Medicine before taking the advanced courses.

COURSE OUTLINE:

1. Sketch of Dr. Heinemann's life and his search of principle in medicine and Art of healing.
2. Life sketch of other renowned Homeopaths and their contribution
 - J.T. Kent
 - C. Herring
 - T.F. Allen
 - C. Dunham
 - J.H. Clarke
 - Boenninghausen
 - Adolf Lippe
 - C.M. Boger
 - Knerr
 - G. Vithoulkas
 - W. Boericke
 - Stuart Close
 - Herbert Roberts
 - Kashi Ram
3. History of development of Homeopathy throughout world
4. Current status of acceptance and research in Homeopathy
5. General introduction to Homoeopathy and its principles.
6. Homeopathy compared to Orthodox system of medicine
7. Scope and limitations of Homeopathy
8. The concept of disease and cure in Homoeopathy
9. Logic, Deductive and Inductive logic
10. Materialism versus Spiritualism
11. Introduction to various editions of Organon of medicine

COURSE CODE: 109

COURSE NAME: ENGLISH-I

CREDIT HOURS: 2

SPECIFIC OBJECTIVES OF COURSE:

Enhance language skills and develop critical thinking

COURSE OUTLINE:

1. Basics of Grammar
2. Parts of speech and use of articles
3. Sentence structure, active and passive voice
4. Practice in unified sentence

5. Analysis of phrase, clause and sentence structure
6. Transitive and intransitive verbs
7. Punctuation and spelling
8. Comprehension: Answers to questions on a given text
9. Discussion: General topics and every-day conversation (topics for discussion to be at the discretion of the teacher keeping in view the level of students)
10. Listening: To be improved by showing documentaries/films carefully selected by subject teachers
11. Translation skills: Urdu to English
12. Paragraph writing Topics to be chosen at the discretion of the teacher
13. Presentation skillsIntroduction

Note: Extensive reading is required for vocabulary building

COURSE CODE: 111

COURSE NAME: ISLAMIC STUDIES

CREDIT HOURS: 2

SPECIFIC OBJECTIVES OF COURSE:

This course is aimed at:

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

COURSE OUTLINE:

Introduction to Quranic Studies

Basic Concepts of Quran

History of Quran

Uloom-ul -Quran

Study of Selected Text of Holly Quran

Verses of Surah Al-Baqra Related to Faith (Verse No-284-286)

Verses of Surah Al-Hujrat Related to Adab Al-Nabi (Verse No-1-18)

Verses of Surah Al-Mumanoon Related to Characteristics of faithful (Verse No-1-11)

Verses of Surah al-Furqan Related to Social Ethics (Verse No.63-77)

Verses of Surah Al-Inam Related to Ihkam(Verse No-152-154)

Study of Selected Text of Holly Quran

Verses of Surah Al-Ihzab Related to Adab al-Nabi (Verse No. 6, 21, 40, 56, 57, 58.)

Verses of Surah Al-Hashar (18, 19, 20) Related to thinking, Day of Judgment

Verses of Surah Al-Saf Related to Tafakar, Tadabar (Verse No-1,14)

Seerat of Holy Prophet (S.A.W) I

Life of Muhammad Bin Abdullah (Before Prophet Hood)

Life of Holy Prophet (S.A.W) in Makkah

Important Lessons derived from the life of Holy Prophet in Makkah

Seerat of Holy Prophet (S.A.W) II

Life of Holy Prophet (S.A.W) in Madina

Important Events of Life Holy Prophet in Madina

Important Lessons derived from the life of Holy Prophet in Madina

Introduction to Sunnah

Basic Concepts of Hadith

History of Hadith

Kinds of Hadith

Uloom –ul-Hadith

Sunnah & Hadith

Legal Position of Sunnah

Selected Study from Text of Hadith

Introduction to Islamic Law & Jurisprudence

Basic Concepts of Islamic Law & Jurisprudence

History & Importance of Islamic Law & Jurisprudence

Sources of Islamic Law & Jurisprudence

Nature of Differences in Islamic Law

Islam and Sectarianism

Islamic Culture & Civilization

Basic Concepts of Islamic Culture & Civilization

Historical Development of Islamic Culture & Civilization

Characteristics of Islamic Culture & Civilization

Islamic Culture & Civilization and Contemporary Issues

Islam & Science

Basic Concepts of Islam & Science

Contributions of Muslims in the Development of Science

Quranic & Science

Islamic Economic System

Basic Concepts of Islamic Economic System

Means of Distribution of wealth in Islamic Economics

Islamic Concept of Riba
Islamic Ways of Trade & Commerce

Political System of Islam

Basic Concepts of Islamic Political System
Islamic Concept of Sovereignty
Basic Institutions of Govt. in Islam

Islamic History

Period of Khlaft-E-Rashida
Period of Ummayyads
Period of Abbasids

Social System of Islam

Basic Concepts of Social System of Islam
Elements of Family
Ethical Values of Islam

SEMESTER-II

COURSE CODE: 102

COURSE NAME: ANATOMY-I (b)

CREDIT HOURS: 2+1

SPECIFIC OBJECTIVES OF COURSE:

To demonstrate the structures of upper limb, lower limb and thorax

COURSE OUTLINES:

GROSS ANATOMY

1. Upper limb
2. Lower limb
3. Thorax

NOTE:

During study of Gross Anatomy, emphasis should be given on applied aspect, radiological anatomy, surface anatomy and cross- sectional anatomy.)

PRACTICAL

- Upper Limb Dissection: Pectoral and scapular, axillary and shoulder region, arm, forearm.
- Prosected parts: Joints, Palm and dorsum of hand.

- Thorax Dissection: Chest wall, mediastinum, pleura, lungs, heart.
- Lower Limb Dissection: Gluteal region, front and back of thigh popliteal fossa, front back and lateral side of leg and dorsum of foot.
- Prosected Parts: Sole of the foot and joints

COURSE CODE: **104**

COURSE NAME: **PHYSIOLOGY-I (b)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To understand the fundamental concepts related to functions of organs and tissues of gastrointestinal tract, cardiovascular and respiratory system

COURSE OUTLINES:

GASTROINTESTINAL TRACT

- | | |
|---|--|
| <ul style="list-style-type: none"> • Structure and general functions • Enteric nervous system • Mastication, swallowing and their control • Dysphagia, achlasia of esophagus • Function and movement of stomach • Examination of abdomen • Peptic Ulcer • Pancreatitis • Function and movements of small intestine | <ul style="list-style-type: none"> • Gastric function test • Function and movements of large intestine • Hormones of GIT • Vomiting and its pathway Vomiting and effects • Defecation and its pathway Diarrhea • Constipation • Functions of liver Jaundice • Liver functions test |
|---|--|

CARDIOVASCULAR SYSTEM

- | | |
|--|--|
| <ul style="list-style-type: none"> • Introduction to heart and circulation • Correlation of cardiac cycle with ECG and heart sound • Physiology of cardiac muscle | <ul style="list-style-type: none"> • Action potential in aerial and ventricular • Muscle and pace maker potential • Regulation of cardiac muscle • Cardiac impulse –origin and propagation |
|--|--|

Significance of Apex beat/ Abnormalities

- Cardiac cycle various events
- ECG- Recording and interpretation
- ECG- interpretation in cardiac muscle Abnormalities and cardiac Arrhythmias
- Arrhythmias- mechanism of development
- Flutter fibrillation
- Functional types of blood vessels
- Hemodynamic of blood flow
- Local Control of Blood flow
- Conduction defects
- Systemic circulation, Characteristics and control
- Regulation of peripheral resistance
- Arterial pulse
- Jugular venous pulse

- Arterial blood pressure (short / long term Regulation)
- Radial/other pulses
- Cardiac output (regulation/measurement)
- Hypertension types and effects
- Heart sound/murmurs
- Venous return and its regulation
- Clinical evaluation of heart sound and Murmurs
- Coronary circulation Ischemic heart disease
- Splanchnic circulation
- Heart failure
- Pulmonary circulation
- Echocardiogram
- Cerebral circulation
- Coetaneous circulation- triple response
- Types of shock
- Fetal circulation and readjustments at birth
- Cardiovascular changes during exercise

RESPIRATORY SYSTEM

- Organization/functions of respiratory tract Examination of chest
- Function of lungs (respiratory and non-respiratory)
- Types of respiration
- Mechanism of breathing
- Surfactant and compliance Lungs function test
- Protective reflex

- Lung volumes and capacities Obstructive /restrictive lung disease (FEV1/FVC)
- Dead space
- Diffusion of gases (gas law, composition)
- Ventilation/perfusion
- Abnormal ventilation/perfusion
- Transport of oxygen in blood

- Transport of Co₂ in blood
- Regulation of respiration (Nervous/chemical)
- Respiratory failure
- Abnormal breathing
- Asphyxia
- Hypoxia-types and effects
- Hypoxia cyanosis
- Dyspnoea
- Physiology of cyanosis
- Artificial respiration
- Physiology of high altitude, space, deep sea diving
- Oxygen therapy
- Oxygen debt Caisson's disease
- Respiratory changes during exercise

PRACTICAL

CARDIOVASCULAR SYSTEM:

- Triple Response
- Examination of Arterial Pulse
- Measurement of Arterial Blood Pressure
- Effect of Exercise and Posture on Blood Pressure
- Examination of Apex Beat
- Heart Sounds

RESPIRATORY SYSTEM:

- Clinical examination of chest
- Stethography sounds; S₁, S₂, S₃
- (Spirometry)

MISCELLANEOUS:

Recording of Body Temperature and Pregnancy Test

COURSE CODE: 106

COURSE NAME: BIOCHEMISTRY-II

CREDIT HOURS: 3+1

SPECIFIC OBJECTIVES OF COURSE:

To understand:

- The fundamental concepts about the energy production.
- Mechanism of degradation and synthesis of bio-molecules.
- Regulation and inhibition of the metabolic pathways.
- Biochemical role of different endocrine hormones

COURSE OUTLINES:

METABOLISM OF CARBOHYDRATES:

GLYCOLYSIS;

- Phases and reactions of Glycolysis
- Energetics of aerobic and anaerobic glycolysis and their importance
- Regulation of glycolysis
- The fate of pyruvate

THE CITRIC ACID CYCLE

- Reactions
- Energetics and regulation and importance of Citric acid cycle
- Amphibolic nature of citric acid cycle

GLUCONEOGENESIS;

- Important three by-pass reactions of Gluconeogenesis
- Entrance of amino acids and intermediates of TCA cycle and other nutrients as gluconeogenic substrates
- Significance of Gluconeogenesis

GLYCOGEN METABOLISM;

- Reactions of Glycogenesis and Glycogenolysis
- Disorders of glycogen metabolism (Glycogen storage diseases)

METABOLISM OF FRUCTOSE

- Galactose and Lactose
- Regulation of blood glucose level
- Hyperglycemia
- Hypoglycemia and their regulating factors
- Biochemistry of Diabetes Mellitus; its Laboratory findings and Diagnosis

METABOLISM OF LIPIDS:

- Mobilization and transport of fatty acids, triacylglycerol, and sterols
- Oxidation of fatty acids
- Activation and transport of fatty acid in the mitochondria
- β -oxidation
- Fate of Acetyl CoA
- Oxidation of odd number carbon containing fatty acids and unsaturated fatty acids etc
- Ketogenesis

- Mechanism and utilization of ketone bodies and significance
- Ketosis and its mechanism

BIOSYNTHESIS OF FATTY ACIDS

- Eicosanoids; Synthesis from Arachidonic acid, their mechanism and biochemical functions
- Triacylglycerol; synthesis and regulation
- Synthesis and degradation of phospholipids and their Metabolic Disorders

CHOLESTEROL SYNTHESIS

- Regulation, Functions
- Fate of intermediates of Cholesterol synthesis
- Hypercholesterolemia
- Atherosclerosis

PLASMA LIPOPROTEINS;

- VLDL, LDL, HDL, and Chylomicrons, their transport, functions and importance in health and disease
- GLycolipid metabolism; abnormalities

METABOLISM OF PROTEINS AND AMINO ACIDS:

- Amino acid oxidation,
- Nitrogen excretion and Urea formation
- Urea cycle and its regulation
- Genetic defects of Urea cycle, Functions
- Pathways of amino acid degradation and genetic disorders of individual amino acids

METABOLISM OF NUCLEOTIDES:

- De Novo Purine synthesis
- Synthesis of Pyrimidine
- Recycling of purine and pyrimidine bases (The salvage pathway)
- Degradation of purine
- Formation of Uric acid
- Disorders of purine nucleotide metabolism

BIOCHEMISTRY OF ENDOCRINE SYSTEM:

- Chemistry, Secretion,
- Mechanism of action, regulation and effect on Carbohydrates, Lipids, Proteins, Mineral and Water metabolism and disorders of various endocrine glands

PRACTICAL

- The techniques and instrumentation of clinical biochemistry: Spectrophotometry, Flame photometry, UV Spectrophotometry, PH metry, Collection and preservations of clinical specimens.
- Estimation and clinical interpretation of: Blood glucose, Glucose Tolerance Test (Demonstration).
- Determination of Amino acids in Urine by Paper Chromatography (Demonstration).

COURSE CODE: **108**

COURSE NAME: **PHILOSOPHY OF HOMOEOPATHY-I (b)**

CREDIT HOURS: **2**

SPECIFIC OBJECTIVES OF COURSE:

To understand the theoretical part of Hahnemann's Organon of Medicine

COURSE OUTLINES:

TEXTUAL STUDY OF ORGANON OF MEDICINE (APHORISM NO.1-70)

Highest aim of the physician

Highest aim of the cure

Causes and Kinds of the diseases

- Acute and chronic diseases
- Similar and dissimilar diseases

Classification of the Symptoms

Totality of the symptoms

Vital Force, its role in health, disease, and cure

Dynamic of autocracy

Knowledge of the remedies

- How medicines cure?
- Proving of Homoeopathic Medicines

Homoeopathic action

Antipathic action

Allopathic action

Homoeopathic Principle

Law of dissimilar

Different Systems of Medicine

Primary and Secondary Action of the medicine

COURSE CODE: 110

COURSE NAME: ENGLISH-II

CREDIT HOURS: 2

SPECIFIC OBJECTIVES OF COURSE:

Enable the students to meet their real life communication needs.

COURSE OUTLINES:

1. Paragraph writing: Practice in writing a good, unified and coherent paragraph
2. Essay writing: Introduction
3. CV and job application
4. Study skills : Skimming and scanning, intensive and extensive, and speed reading, summary and précis writing and comprehension
5. Academic skills : Letter/memo writing, minutes of meetings, use of library and internet
6. Presentation skills: Personality development (emphasis on content, style and pronunciation)

Note: Documentaries to be shown for discussion and review

COURSE CODE: 112

COURSE NAME: PAK STUDIES

CREDIT HOURS: 2

SPECIFIC OBJECTIVES OF COURSE:

- Develop vision of historical perspective, government, politics, contemporary Pakistan, ideological background of Pakistan.
- Study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

COURSE OUTLINES:

1. 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
 - i. Indus Civilization
 - ii. Muslim advent

iii. Location and geo-physical features.

2. **Government and Politics in Pakistan**

Political and constitutional phases:

- | | |
|------------|----------------|
| a. 1947-58 | d. 1977-88 |
| b. 1958-71 | e. 1988-99 |
| c. 1971-77 | f. 1999 onward |

3. **Contemporary Pakistan**

- | | |
|-------------------------------------|--|
| a. Economic institutions and issues | d. Foreign policy of Pakistan and challenges |
| b. Society and social structure | e. Futuristic outlook of Pakistan |
| c. Ethnicity | |

BHMS SECOND YEAR

SEMESTER-III

COURSE CODE: **201**

COURSE NAME: **ANATOMY-II (a)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To demonstrate the Anatomy of

1. Head & neck
2. Brain and spinal cord
3. Abdomen and pelvis

COURSE OUTLINE:

GROSS ANATOMY

1. Head & neck
2. Brain and spinal cord
3. Abdomen and pelvis

NOTE

During the study of Gross Anatomy, emphasis should be on the applied aspects, radiological anatomy, surface anatomy and cross-sectional anatomy.)

PRACTICAL

Superficial and deep dissection of

- Abdomen Dissection: Anterior abdominal wall and inguinal region, external genitalia. Viscera and Posterior Abdominal wall and nerve plexus
- Pelvis Dissection: Pelvic viscera, blood vessels and nerves.
- Prosected Parts: Perineum including ischio-rectal fossa.
- Face and neck
- Orbit and eye ball
- Submandibular region
- Temporal and infratemporal fossa
- Cranial cavity
- Naso and Oropharyngeal regions.
- Ear
- Larynx and pharynx

COURSE CODE: 203
COURSE NAME: PHYSIOLOGY-II (a)
CREDIT HOURS: 2+1

SPECIFIC OBJECTIVES OF COURSE:

To understand the basic physiology of organs and tissues of nervous system and special senses

COURSE OUTLINES:

NERVOUS SYSTEM

- Organization of CNS
- Significance of Dermatomes
- Classification of nerve fibers
- Properties of Synaptic transmission
- Neurotransmitters and neuropeptides
- Types and functions of Sensory receptors and Neurotransmitters (applied aspect)
- Functions of spinal cord ascending tracts
- Reflex action/Reflexes
- Interpretations of reflexes
- Muscle spindles/muscle tone
- UMN/LMN lesion features and localization
- Tactile, temperature and pain sensations
- Injuries and diseases of spinal cord
- Structure of cerebral cortex Analgesia system
- Sensory cortex Disorders of cranial nerves
- Motor cortex
- Motor pathways, Pyramidal and Extra pyramidal Hemiplegia/Paraplegia
- Basal ganglia, connections and functions
- Parkinsonism and other lesions of basal ganglia
- Cerebellum, connections and functions Cerebellar Disorders
- Vestibular Apparatus/Regulation of Posture and equilibrium
- Sleep Disorders
- Reticular formation
- Physiology of sleep
- EEG
- Physiology of memory
- Higher mental function assessment
- Physiology of speech
- Abnormalities of speech
- Thalamus-nuclei and functions
- Thalamic syndrome
- Hypothalamus limbic system

- Lesions of Hypothalamus
- Cerebrospinal fluid
- Regulation of body temperature
- Functions of skin
- Hydrocephalus
- Autonomic nervous system
- Physiology of aging

SPECIAL SENSES:

- Structure and function of eye-ball
- Intra ocular pressure and Glaucoma
- Optical principles
- Accommodation of eye
- Errors of refraction
- Visual acuity
- Photochemistry of vision
- Color vision/night blindness
- Color blindness funduscopy
- Dark and light adaptation
- Neural function of Retina
- Visual pathway light reflex and pathway
- Field of vision and lesions of visual pathway
- Visual cortex
- Intra ocular fluids
- Visual evoked potentials and electro retinogram
- Eye movements and control
- Physiological anatomy of cochlea
- Functions of external and middle Ear
- Functions of inner Ear- Organ of Corti Hearing test audiometry
- Auditory pathway
- Types of deafness,
- Auditory evoked potentials
- Physiology of smell-receptors and pathway
- Olfaction/Taste abnormalities
- Physiology of taste

PRACTICAL

NERVOUS SYSTEM

- Simple muscle twitch (SMT) in frog and effect of temperature
- Effect of fatigue on muscle contraction
- Tetanization in frog's muscle (Demonstration)
- Effect of two successive stimuli on SMT (Demonstration)
- Effect of preload and after load on SMT (Demonstration)
- Determination of velocity of conduction in

- sciatic nerve (Demonstration)
- Use of physiograph (poly graph)
- Elicit fatigue in human index finger

SPECIAL SENSES:

- Field of vision by confrontation method
- Field of vision by Perimetry
- Light reflex
- Ophthalmoscopy
- Visual acuity
- Color vision
- Hearing tests
- Audiometry
- Taste Sensation
- Olfaction sensation

COURSE CODE: 205

COURSE NAME: MATHEMATICS

CREDIT HOURS: 2

SPECIFIC OBJECTIVES OF COURSE:

After completion of this course the student should be able to:

- Understand the use of the essential tools of basic mathematics;
- Apply the concepts and the techniques in their respective disciplines;
- Model the effects non-isothermal problems through different domains;

COURSE OUTLINES:

ALGEBRA:

SETS AND FUNCTIONS:

- Elementary concepts of sets
- Concept of Functions
- Domain and Range of a Function
- Different types of Functions
- Graphical representation of a function
- Some applications of functions

SOLUTION OF LINEAR AND QUADRATIC EQUATIONS

- Equations reducible to Quadratic Form.
- Solution of simultaneous Equations.

ARITHMETIC, GEOMETRIC AND HARMONIC PROGRESSIONS

ARITHMETIC, GEOMETRIC AND HARMONIC MEANS.

PERMUTATIONS AND COMBINATIONS

BINOMIAL THEOREM: SIMPLE APPLICATION.

TRIGONOMETRY:

- Measurement of Angles in Radian and degrees
- Definitions of circular functions
- Derivation of circular function for simple cases

ANALYTICAL GEOMETRY:

- Coordinates of point in a plane
- Distance between two points in a plane
- Locus
- Equations of straight line
- Equation of Parabola
- Circle and Ellipses

DIFFERENTIAL CALCULUS:

- Concept of Derivations
- Rules of Differentiation
- Examples on the evaluation of Derivations
- Derivatives of Exponential and Logarithmic Functions
- Partial Derivations
- Higher Order Derivatives
- Maxima & Minima points of Inflections

INTEGRAL CALCULUS:

- Concept of Integration
- Rules of Integrations
- Integrations of Algebraic and Trigonometric functions by using different techniques

COURSE CODE: **207**

COURSE NAME: **PHILOSOPHY OF HOMOEOPATHY-II (a)**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

To impart the philosophical concepts from a practical perspective related to

- Classification of disease
- Individualization and Case taking
- Drug proving
- Selection of remedies
- Aggravation

COURSE OUTLINES:

Textual Study of Organon of Medicine (Aphorism No.71-159)

Knowledge and Classification of Disease (Aphorism No.71-81)

Individualization (Aphorism No.82)

Case taking (Aphorism No.83-104)

- Physician free from prejudice.
- Recording of the symptoms.
- Physician's observation.
- Past treatment.
- Investigation of the Maintaining causes. etc

Knowledge of applying the drug for cure

Drug proving (Aphorism No.105-145)

- Investigation of the pathogenetic action of the drug.
- Knowledge of the many drugs
- Primary, secondary, and alternating effect of the drug.
- Method of preparation of the drug for proving.
- Proving on healthy and sick persons.
- Confirmatory re-proving.
- Building of Materia Medica. etc

Methods of selection of the remedies (Aphorism No.146-154)

Appropriate dose, Homoeopathic Aggravation, removal of the symptoms (Aphorism No.155-159)

COURSE CODE: **209**

COURSE NAME: **MATERIA MEDICA-I (a)**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with basic concepts related to Homoeopathic Materia Medica, so that they may be able to study Homoeopathic Medicines in higher courses

COURSE OUTLINES:

Definition of Homoeopathic Materia Medica

Origin and history of Homoeopathic Materia Medica

Brief history of first Materia Medica Pura of Dr. Hahnemann

Sources of homoeopathic Materia Medica

- Empirical knowledge.
- Homoeopathic drug proving
- Toxicological report and Data collection in respect of certain drugs.
- Therapeutic drug proving
- Clinical experience and drug trails.
- Homoeopathic Drug Proving.

THE DEVELOPMENT OF THE METHODS OF PROVING SINCE DR. HAHNEMANN

- Necessity of proving.
- Drug reactions
- Homoeopathic Drug Proving, Planning and Protocol

DOSE:

- Lethal dose
- Patho-pharmacological dose.
- Physiological dose.
- Micro dose.

DRUG PROVING FORMAT OR TECHNIQUES:

- Single Blind technique
- Double Blind Technique.
- Crossover trail.

PROVER'S SOCIETY, ROLE AND QUALITIES OF THE;

- Committee
- Master prover/ Coordinator
- Supervisors.
- Subject (Prover)

COURSE CODE: **211**

COURSE NAME: **BIOINFORMATICS-I**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with basic concepts in Molecular Biology so that they may be able to learn Bioinformatics tools in next semester

COURSE OUTLINES:

- Introduction to Bioinformatics
- Applications of Bioinformatics
- Genomics
- Transcriptomics
- Proteomics
- Metabolomics
- Biochemical Genetics (Informational Flow in the Cell):
- The structural basis of cellular information
- DNA, Chromosomes
- Discovery and organization of DNA in Genomes
- A, B, Z, and H, DNA
- Super coiling of DNA
- The replication of DNA (DNA dependent DNA synthesis)
- DNA polymerase, its components and functions
- Initiation, elongation and termination of Replication
- DNA Repair, and Recombination, Transposition
- Mutation and Cancers
- The Transcription (DNA dependent DNA synthesis)
- RNA polymerase, its components and functions
- Initiation, Elongation and termination of transcription
- RNA processing, and editing
- RNA dependents synthesis of RNA and DNA
- Reverse transcription-DNA synthesis from viral RNA
- Retroviruses in relation to cancer and AIDS
- Translation (Protein Synthesis)
- The genetic codes and their characteristics
- Initiation, Elongation, and termination of protein synthesis
- Post-translational modification
- Regulation of Gene Expression
- Molecular biology technology
- DNA isolation
- DNA-recombinant technology
- Hybridization, blotting techniques
- Genetic Disorders

PRACTICAL

Basic principle of computing in bioinformatics, Web retrieving for genomic and proteomic data, Basic molecular techniques.

SEMESTER-IV

COURSE CODE: **202**

COURSE NAME: **ANATOMY-II (b)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

- To introduce the students with concepts in special Embryology and Histology
- Demonstration of Neuro-Anatomy

COURSE OUTLINE:

SPECIAL EMBRYOLOGY

1. Head and Neck
 - Pharyngeal apparatus
 - Tongue
 - Thyroid
 - Parathyroid
 - Thymus
 - Pituitary
 - Upper respiratory system
 - Face and palate
2. Body cavities
 - Development of body cavities
 - Formation of diaphragm
3. The respiratory system
4. The cardiovascular system
 - Heart
 - Great vessels
 - Foetal circulation and changes at birth
5. The urinary system
 - Development of Kidney
 - Urinary bladder
 - Urethra
 - Development of adrenal glands
6. The male reproductive system
 - Testis
 - Genital ducts
 - External genitalia
7. The female reproductive system
 - Ovaries
 - Oviducts
 - Uterus
 - Vagina

- External genitalia
8. The Musculo- skeletal system
- Development of skeleton
 - Development of muscles
9. Development of Limbs
10. Development of Integumentary System (consisting of development of skin and its appendages and development of mammary glands)
11. Special Senses (eye and ear)
12. Nervous system
13. Digestive system
- Division of Gut tube
 - Mesenteries
 - Liver, Gall bladder, Pancreas, Spleen

SPECIAL HISTOLOGY

- Digestive System
- Respiratory System
- Urinary System
- Male Reproductive System
- Female Reproductive System
- Endocrine Glands
- Organs of Special Senses

NEURO-ANATOMY

- Spinal Cord
- Medulla Oblongata
- Pons
- Mid Brain
- Cerebellum
- Thalamus
- Hypothalamus
- Basal Ganglia
- Cerebral Cortex
- Autonomic Nervous System

PRACTICAL

DEVELOPMENTAL ANATOMY

- Models to demonstrate various stages of early foetus and different organ development.
- Slides of ovary and testis to show follicles and stages of maturation of spermatozoa; early chick embryos to understand the development of tissues and organs from conception till term.

NEURO -ANATOMY

- Cross specimen of full brain, meninges, spinal cord; prosected specimens to demonstrate visual system, auditory and vestibular pathways and major functional areas.
- Stained sections of brain and spinal cord at various levels to

demonstrate cranial nerve nuclei, ascending and descending tracts, thalamic nuclei and important functional areas

DEMONSTRATIONS

- Bones of skull and vertebral column
- Brain and spinal cord
- Cross-sectional anatomy
- Radiological anatomy
- CT and MRI scan

COURSE CODE: **204**

COURSE NAME: **PHYSIOLOGY-II (b)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with functions of body fluids, kidneys and endocrine hormones

COURSE OUTLINES:

BODY FLUIDS AND KIDNEYS

- Clinical/Applied Concepts
- Compartments of body fluids and measurement of Renal function test
- Tissue and lymph fluids
Fluid Excess/depletion
- Structure of kidney/Nephron
- General functions of kidney
- GFR factors regulating
- Formation of urine, filtration, re-absorption, secretion, Plasma Clearance
- Concentration and dilution of urine
- Renal failure/uremia
- Electrolyte balance
- Water balance
- Regulation of blood pressure by kidneys
- Nephritic syndrome
- Hormones of kidney
- Acidification of urine
- Artificial kidney/Hemodialysis
- Acid base balance
- Metabolic acidosis/Alkalosis
- Micturation
- Abnormalities of micturation including Incontinence

ENDOCRINOLOGY

- General principles (classification, mechanism of action, feed back control)
- Acromegaly
- Gigantism
- Biosynthesis, transport, metabolism, actions and control of secretion of hormones Hormonal assay
- Hypothalamus Dwarfism
- Anterior pituitary Panhypopituitarism, Sheehan's syndrome
- Posterior pituitary Diabetes insipidus
- Thyroid gland, Parathyroid gland Myxedema, Cretinism, Thyrotoxicosis Pheochromocytoma
- Adrenal medulla, Adrenal cortex Syndrome of inappropriate ADH secretion, Cushing's syndrome, Addison's disease
- Pancreas Diabetes Mellitus and Hypoglycemia
- Pineal gland
- Thymus
- Kidney Adrenogenital syndrome
- Physiology of growth Zollinger Ellison's syndrome
- Reproduction
- Functional anatomy of Male reproductive system
- Chromosomal abnormalities
- Spermatogenesis
- Semen analysis Male infertility
- Erection and ejaculation
- Testosterone, Male puberty
- Oogenesis and functional anatomy of Female gonads
- Oestrogen and progesterone
- Female infertility
- Menstrual cycle, Contraception
- Puberty and menopause
- Pregnancy-
- Physiological changes In mother during pregnancy
- Pregnancy Tests
- Placenta
- Parturition
- Lactation
- Neonatal Physiology

PRACTICAL:

- Urine Complete Examination
- Stool Examination
- Blood Complete Examination
- Semen Examination

- Cerebrospinal Examination Fluid
- Pericardial examination fluid
- Pleural Examination Fluid
- Ascitic Examination Fluid
- Blood Sugar
- Blood Urea
- Blood Cholesterol etc
- Tests for endocrine abnormalities
- Biopsies and cytological techniques

COURSE CODE: **206**

COURSE NAME: **BIostatISTICS**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with statistical techniques to make them able to organize data in useful and meaningful form

COURSE OUTLINES:

DESCRIPTION OF STATISTICS:

- Descriptive Statistics
- What is Statistics?
- Importance of Statistics
- What is Biostatistics?
- Application of Statistics in Biological and Pharmaceutical Sciences
- How samples are selected?

ORGANIZING and DISPLAYING DATA:

- Variables and Quantitative and Qualitative Variables
- Univariate Data
- Bivariate Data
- Random Variables
- Frequency Table
- Diagrams
- Pictograms
- Simple Bar Charts
- Multiple Bar Charts
- Histograms

SUMMARIZING DATA and VARIATION:

- The Mean
- The Median
- The Mode
- The Mean Deviation
- The Variance and Standard Deviation
- Coefficient of Variation

CURVE FITTING:

- Fitting a Straight Line
- Fitting of Parabolic or High Degree Curve

PROBABILITY:

- Definitions
- Probability Rules
- Probability Distributions (Binomial & Normal Distributions)

SIMPLE REGRESSION AND CORRELATION:

- Introduction
- Simple Linear Regression Model
- Correlation co-efficient

TEST OF HYPOTHESIS AND SIGNIFICANCE:

- Statistical Hypothesis
- Level of Significance
- Test of Significance
- Confidence Intervals
- Test involving Binomial and Normal Distributions

STUDENT “t”, “F” and Chi-Square Distributions:

- Test of Significance based on “t”, “F” and Chi-Square Distributions

ANALYSIS OF VARIANCE: One-way Classification,

- Two-way Classification
- Partitioning of Sum of Squares and Degrees of Freedom
- Multiple Comparison Tests such as LSD
- The analysis of Variance Models

COURSE CODE: 208

COURSE NAME: PHILOSOPHY OF HOMOEOPATHY-II (b)

CREDIT HOURS: 2

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with philosophy of various alternative therapies

COURSE OUTLINES:

Introduction to Philosophy and Scope of Following Alternative Therapies

1. Herbalism
2. Aroma-therapy

- | | |
|-------------------------|----------------------------------|
| 3. Electro-Homoeopathy | 16. Applied Kinesiology |
| 4. Flower remedies | 17. Reflexopathy |
| 5. Mud therapy | 18. Acupuncture |
| 6. Naturopathy | 19. Acupressure |
| 7. Colour Therapy | 20. Shiatsu |
| 8. Magnetotherapy | 21. Yoga |
| 9. Radiotherapy | 22. Alexander Technique |
| 10. Hydrotherapy | 23. Spiritual treatment |
| 11. Allopathy | 24. Therapeutic Touch |
| 12. Unani and Ayurvedic | 25. Hypnotherapy |
| 13. Osteopathy | 26. Holistic Medicine |
| 14. Chiropractic | Therapy |
| 15. Massage | |

COURSE CODE: **210**

COURSE NAME: **MATERIA MEDICA-I (b)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic remedies enlisted in course outlines of this course

COURSE OUTLINES:

Study of Homoeopathic remedies, emphasizing the following aspects:

- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (ANIMAL KINGDOM)

PHYLUM MOLLUSCA

1. Sepia: Cuttle fish (Juice)
2. Murex purpurea: Purple-fish

PHYLUM PORIFERA

3. Badiaga: Fresh water sponge
4. Spongia tosta: Common sponge

PHYLUM ARTHROPODA

5. Aranea diadema: The Cross spider
6. Latrodectus mactans: Black widow spider
7. Mygale lasiodora: Black Cuban spider
8. Tarentula cubensis: Cuban spider
9. Tarentula hispanica: Spanish spider
10. Theridion curassavicum: Orange spider
11. Apis mellifica: Honeybee
12. Vespa: Wasp
13. Blatta orientalis: Indian cockroach
14. Cantharis: Spanish fly
15. Cimex acanthia: Bedbug
16. Coccus cacti: Cochineal insect
17. Formica rufa: The Ant

PISCES

18. Serum anguillar ichthotoxin: Eel serum
19. Oleum jecoris aselli: Cod-liver oil
20. Pyrarara: River fish

AMPHIBIA

21. Bufo rana: Toad

LIZARDS

22. Heloderma: Gila monster

OPHIDIA (SNAKE POISONS)

23. Crotalus horridus: North American Rattlesnake
24. Elaps corallinus: Brazilian Coral snake
25. Lachesis trigonocephalus: Surukuku
26. Naja tripudians: Indian hooded snake
27. Vipera: Common Viper

MAMMALIA

28. Pulmo vulpis: fresh lung of wolf or fox.
29. Carbo animalis: charred ox hide.
30. Moschus: inspissated secretion contained in preputial follicles of Musk deer

PRACTICAL/VIVA-VOCE

Viva-Voce and practical emphasizing chiefly upon the comparative study of the medicines included in this semester.

COURSE CODE: **212**

COURSE NAME: **BIOINFORMATICS-II**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with bioinformatics tools, databases, algorithms and applications.

COURSE OUTLINES:

1. Physical Map of genome,
2. Genome mapping
3. Multiple sequence alignment:
4. Gene and protein relationships.
5. Neuroinformatics in biology, application of genome analysis and genomics.
6. Introduction to principle of gene therapy and gene delivery system.
7. Micro-array development,
8. Computer programming for bioinformatics
9. Software development for bioinformatics,
10. Molecular programming,
11. Perl Programming for Bioinformatics
12. Operating System (Windows, Linux)
13. Biological Databank
14. Database Management System
15. Molecular Imaging & Drug Designing
16. Pharmacogenomics & Pharmacogenetics
17. BLAST
18. PubMed,
19. EMBL,
20. GenBank,
21. PDB,
22. Swiss-Prot
23. Medical records
24. Clinical Database and Database models
25. Medical Imaging and Digital imaging
26. Data acquisition
27. Patient machine interface
28. Networks
29. Data-exchange
30. Automated Diagnostic systems

PRACTICAL

Basic principle of computing in bioinformatics, Web retrieving for genomic and proteomic data, Basic molecular techniques

BHMS THIRD YEAR

SEMESTER-V

COURSE CODE: 301

COURSE NAME: PATHOLOGY-1

CREDIT HOURS: 2+1

SPECIFIC OBJECTIVES OF COURSE:

To understand comprehensively the concepts in general pathology

COURSE OUTLINES:

1. INTRODUCTION, NEED, IMPORTANCE AND DIVISION OF PATHOLOGY
2. TERMINOLOGY
3. GENERAL PATHOLOGY:

CELL INJURY

- Definition, Causes of cell Injury
- Mech. of cell injury
- Morphology of cell Injury
- Intracellular accumulation
- Cellular Adaptation of growth and differentiation
- Atrophy
- Hypertrophy
- Hyperplasia
- Metaplasia
- Dysplasia

ACUTE AND CHRONIC INFLAMMATION

- Acute Inflammation
- Vascular changes
- Vascular Permeability
- Changes in vascular flow and Caliber
- Cellular Events
- Chemical Mediators
- Chronic Inflammation
- Definition and cause

REPAIR;

- Cell Growth
- Regeneration
- Wound healing
- Pathological aspect of repair
- Disorder of Fluid
- Vascular Flow and Shock
- Edema
- Hyperemia and Congestion
- Hemorrhage
- Thrombosis
- Embolism
- Infarction
- Shock

NEOPLASIA

- Definition
- Nomenclature
- Characteristic of benign and malignant neoplasm,
- Differentiation and anaplasia
- Rate of growth
- Local Inversion
- Metastasis, Spread of Tumor
- Etiology of cancer
- Carcinogenic Agent
- Chemical Carcinogen
- Radiation Carcinogen
- Viral Carcinogen
- Clinical features of neoplasm
- Effects of tumor on host
- Grading and Staging of Cancer
- Laboratory diagnosis of Cancer

ENVIRONMENTAL AND OCCUPATIONAL DISORDERS

- Smoking
- Pneumoconiosis
- Coal mine worker's disease
- Silicosis
- Asbestosis
- Aspirin Abuse,
- Exogenous estrogen and oral Contraceptives,
- Acetaminophen
- Lead
- Carbon Monoxide
- Alcohol and Ethanol
- Heroine, Hashish
- Thermal Burns
- Hyperthermia
- Electrical Injury
- Injury by Ionizing agents or Radiation

PRACTICAL

STUDY OF PATHOLOGICAL SLIDES OF VARIOUS PATHOLOGICAL CONDITIONS

- Acute inflammation
- Chronic inflammation
- Chronic specific inflammation
- Different types of Degeneration
- Thrombosis
- Embolism
- Infarction
- Necrosis
- Gangrene
- Hyperplasia
- Metaplasia
- Pigmentation
- Calcification
- Papilloma
- Adenoma
- Chondroma
- Fibroma
- Leiomyoma
- Neofibroma
- Sq. Cell Carcinoma
- Basal Cell Carcinoma
- Transitional Cell Carcinoma
- Adenocarcinoma
- Fibrocarcinoma
- Rhabdomyosarcoma

- Leiomyosarcoma
- Lymphosarcoma
- Liposarcoma
- Reticular Cell Sarcoma
- Hodgkin's disease
- Breast Carcinoma
- Osteogenic Sarcoma
- Osteoclastoma

COURSE CODE: **303**

COURSE NAME: **MICROBIOLOGY AND PARASITOLOGY-I**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with viruses, bacteria, fungi and diseases caused by these organisms

COURSE OUTLINES:

Historical Status and Evolution of Microbiology and Parasitology
Nomenclature and Classification of Micro-Organisms

VIROLOGY

- General characteristics of virus
- Classification of viruses and detail of at least one species from every group
- DNA and RNA viruses
- Main viruses, their pathogenicity, transmission and diseases
- Bacteriophages
- Diagnostic Techniques
- Immunization for viral diseases
- Acquired Immune deficiency Syndrome

GENERAL BACTERIOLOGY

- Historical Background
- General and Cellular Morphology
- Structures and Functions
- Nutritional requirements of Bacteria and nutrition factors affecting growth
- Growth of Bacteria and Normal flora
- Growth curve
- Growth factors and Growth characteristics
- Pathogenesis and spread of Bacteria
- Classification of Bacteria
- Culture media
- Bacterial cultures and staining methods

ORGANISMS AND DISEASES CAUSED BY THEM

- Gram positive Cocci
- Streptococci
- Pneumococci
- Staphylococci
- Gram-ve Cocci
- Neisseiriaceae
- Meningococci
- Gonococci

- Gram-ve Bacilli
- E.coli, Salmonella
- Shigella
- Vibrio cholera
- Pseudomonas
- Helicobacter Pylori
- The Spore forming Bacilli
- Clostridium tetani
- Gas Gangrene Clostridia, Perfringens
- Defficile botulinum
- Brucella (Plague)
- Bordetella pertussis
- Haemophilus influenza
- Corynebacterium, diphtheria
- Mycobacterium tuberculosis
- Treponema (Spirochetes)
- Rickettsiae

FUNGI

- Properties of Fungi
- Classification of Fungi and their name
- Pathogenic potentials and superficial Mycosis
- Systematic fungi
- Actinomyces
- Candidiasis
- Aspergillosis
- Diagnostic Techniques in Mycology

MICROBIOLOGY AND PARASITOLOGY-I PRACTICAL:

- Study of Microscope and use of oil Immersion Lenses
- Sterilization of Glass ware and products by various methods.

STAINING:

- Simple staining
- Gram staining
- Acid fast staining
- Capsule and spore staining
- Geimasas staining
- flagella staining

CULTURE MEDIA:

- Preparation of General Media
- Preparation of Selective Media
- Culturing of Micro Organisms

COURSE CODE: **305**

COURSE NAME: **PHARMACOGNOSY-I**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

1. To acquaint the students with techniques used in isolation and separation of plant constituents
2. To acquaint the students with Pharmacognosy of
 - Carbohydrates
 - Glycosides
 - Tannins
 - Volatile oils

COURSE OUTLINE:

INTRODUCTION: Historical development and scope of Pharmacognosy in Pakistan

Terminology

SEPARATION AND ISOLATION OF PLANT

CONSTITUENTS:

- Latest techniques used in isolation and separation of plant constituents
- An introduction and basic principle of chromatography and chromatographic techniques; Column chromatography
- Paper chromatography
- Thin Layer chromatography
- Gas chromatography
- High Performance Liquid chromatography
- Ion Exchange chromatography
- Droplet Counter Current chromatography
- Electrophoresis

CARBOHYDRATES: Introduction, Sucrose and Sucrose containing drugs, Dextrose, Liquid glucose, Fructose, Lactose, Starch, Dextrin, Cellulose and Cellulose Derivatives, Gums and Mucilages

GLYCOSIDES: Introduction, Classification, Cardioactive glycosides, Anthroquinone glycosides, Saponin glycosides, Isothiocyanate glycosides, Lactone glycosides, Aldehyde glycosides

TANNINS: Introduction, Classification, Properties and chemical identity tests, Detailed study of Hamamelis

VOLATILE OILS (ESSENTIAL OILS): Introduction, significance, Methods of obtaining volatile oils, Chemistry and classification, Hydrocarbon volatile oils, Alcoholic volatile oils, Aldehydic volatile oils, Ketonic volatile oils, Phenolic volatile oils, Phenolic ether volatile oils, Oxide volatile oils, Ester volatile oils:

PRACTICAL

- Introduction of the entire and broken parts of the plant drugs (Macro and organoleptic characters)

- Microscopic examination of powders and sections of plant drugs.
- Extraction of the active constituents of crude drugs and chemical tests for their identification.

COURSE CODE: **307**

COURSE NAME: **HOMOEOPATHIC PHARMACY-I**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

- Learning the identification and preparation of Homoeopathic medicines,
- Learning various laboratory methods
- Introduction to vehicles

COURSE OUTLINES:

Introduction,

Homoeopathic Pharmacy its specialty and originality with Homoeopathic Pharmacopoeia

Definitions of some important terms

Scope of Homoeopathic Pharmacy with relation to Organon of Medicine (Aph 264 to 285 Organon of medicine), Materia Medica, National Economy

Synthetic drugs used in potentized form

Weights and Measures including Home Scale (Deci, Centi, Milli)

Homoeopathic Pharmaceutical instruments and appliances

HOMOEOPATHIC REMEDIES:

- Sources of Homoeopathic Remedies
 - Vegetable
 - Animal
 - Mineral
 - Nosodes
 - Sarcodes
- Process of collection
- Identification
- Purification
- Preservation and
- Preservation of Potentised remedies

HOMOEOPATHIC LABORATORY

- Ideal laboratory
- Building, Cleanliness, Sections, Apparatus

VEHICLES:

- Types
- Preparation and uses of vehicles
- Purification of vehicles
- Determination of Proof strength of Alcohol
-

GENERAL LABORATORY METHODS

- Solutions
- Dilutions
- Decantation
- Precipitation
- Filtration
- Distillation
- Crystallization
- Sublimation
- Percolation
- Decoction

MISCELLANEOUS PROCESSES:

- Efflorescence
- Deliquescence
- Lyophilization
- Elutriation
- Exsiccation
- Ignition, Fusion
- Calcination
- Adsorption
- Evaporation
- Vaporization
- Centrifugation
- Desiccation
- Levigation
- Trituration

METHODS OF PREPARATION OF REMEDIES:

- From Organic and Inorganic Chemicals
- Vegetables
- Animals and animal products
- Disease products
- Hahnemann's classical and modern methods of preparation of remedies including their merits and demerits.

PRACTICAL

ESTIMATIONS:

- Estimation of Moisture contents of one drug substance with water bath and by using moisture meter.
- Estimation of purity of ethyl alcohol, distilled water, sugar of milk.
- Estimation of size of globule, its medication, medication of milk sugar and distilled water, Making of doses.

MANUFACTURING:

- Preparation of dispensing and dilute alcohol solutions and dilutions.
- Preparation of mother tinctures of 3 polychrests
- Preparation of Globules

COURSE CODE: 309

COURSE NAME: PHILOSOPHY OF HOMOEOPATHY-III (a)

CREDIT HOURS: 3

SPECIFIC OBJECTIVES OF COURSE:

Understand and learn the theory and practice of chronic miasms.

COURSE OUTLINES:

Textual study of Organon (Aphorism 160-292)	General and individual cases of disease
Application of Anti-miasmatic remedies	General and individual properties of drugs
Re-examination and re-prescribing	Subjective symptoms more important
Pathology	Topical treatment
Derangement of Vital force	History of disease in human race

HAHNEMANN'S DOCTRINE OF CHRONIC DISEASE

PSORA

- Manifestations
- Diseases related to and based on Psora
- Anti-Psoric remedies

- Diseases related to syphilis
- Antisyphilitic remedies

SYPHILIS

- Manifestations

SYCOSIS

- Manifestation
- Diseases of Sycosis
- Antisyctic remedies

- TUBERCULOSIS
- Manifestation
 - Diseases
 - Antitubercular remedies

MIASMATIC COMPLEXES

- Union of Psora and Syphilis (Pseudospora tubercular diathesis) - group of diseases
- Union of Syphilis and Psychosis - group of diseases
- Union of all the three Miasms - group of diseases
- Principles of miasmatic treatment
- Anti-miasmatic remedies

OTHER MIASMS:

- Cancer
- AIDS
- Vaccinosus

COURSE CODE: **311**

COURSE NAME: **MATERIA MEDICA-II (a)**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines listed in course outlines of this course

COURSE OUTLINES:

- Study of Homoeopathic remedies, emphasizing the following aspects:
- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (VEGETABLE KINGDOM)

1. Abrotanum
2. Aconitum napellus

- | | |
|------------------------------|--------------------------|
| 3. Aesculus
hippocastanum | 17. Capsicum annum |
| 4. Aethusa cynapium | 18. Carbo vegetabilis |
| 5. Agaricus muscarius | 19. Carduus marianus |
| 6. Allium cepa | 20. Chamomilla |
| 7. Aloe socotrina | 21. Cicutu virosa |
| 8. Anacardium | 22. Cimicifuga racemosa |
| 9. Arnica Montana | 23. Cina |
| 10. Baptisia tinctoria | 24. Cinchona officinalis |
| 11. Belladonna | 25. Cocculus indicus |
| 12. Berberis vulgaris | 26. Coffea cruda |
| 13. Bryonia alba | 27. Colchicum autumnale |
| 14. Cactus grandiflorus | 28. Colocynthis |
| 15. Calendula officinalis | 29. Conium |
| 16. Cannabis indica | 30. Crataegus oxyacantha |

SEMESTER-VI

COURSE CODE: **302**

COURSE NAME: **PATHOLOGY-II**

CREDIT HOURS: **3+1**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with special pathology of different organs, systems and tissues

COURSE OUTLINES:

SPECIAL PATHOLOGY:

DISEASE OF HEART

- | | |
|--|--|
| <ul style="list-style-type: none"> • Hypertension, • Congestive Cardiac Failure (CCF) • Right sided heart failure • Left sided heart failure • Ischemic Heart Disease • Angina Pectoris • Myocardial Infarction | <ul style="list-style-type: none"> • Congenital heart disease • Rheumatic fever and rheumatic heart disease • Infective Endocarditis • Myocarditis • Cardiomyopathy; Dilated, Hypertrophic, Restrictive |
|--|--|

DISEASE OF BLOOD VESSEL

- | | |
|--|---|
| <ul style="list-style-type: none"> • Atherosclerosis • Varicose Vein | <ul style="list-style-type: none"> • Phlebothrombosis and Thrombophlebitis |
|--|---|

- Obstruction of Superior and Inferior Vena Cava (cause)

DISEASE OF BLOOD AND LYMPHOID SYSTEM

- Hereditary spherocytosis
- Sickle cell Anemia
- Thalasemia
- Aplastic anemia
- Poly erythemia
- Leucopenia
- Lymphoma
- Non-Hodgkin Lymphoma
- Hodgkin lymphoma
- Acute leukemia
- Acute myeloid leukemia
- Acute Lymphoblastic leukemia
- Chronic leukemia
- Chronic myeloid leukemia
- Chronic lymphoblastic leukemia
- Thrombocytopenia (Brief)

RESPIRATORY SYSTEM

- Obstructive lung disease (cold)
- Asthma
- Emphysema
- Chronic Bronchitis
- Bronchiectasis
- Adult Respiratory Distress Syndrome
- Pulmonary thromboembolism
- Hemorrhage and Infarction
- Acute Bacterial pneumonia
- Primary atypical pneumonia
- Tuberculosis, Primary T.B, Secondary T.B
- Lung Abscess
- Bronchogenic Carcinoma
- Definitions of Pleural Effusion
- Pleumitis Pleutitis
- Pneumothorax
- Hemothorax
- Chylothorax

ORAL CAVITY

- Infections
- Benign Tumors
- Peripheral giant cell granuloma (Brief)
- Oral hairy leukoplakia (Brief)
- Leukoplakia
- Squamous Cell Carcinoma (Brief)
- Dental Carries
- Periodontal Disease

GASTRO INTESTINAL DISEASES

- Esophagitis
- Reflux Esophagitis
- Gastritis, Acute and Chronic
- Stress Ulcer
- Peptic Ulcer, Duodenal, Gastric

- Gastric Carcinoma (Brief)
- Inflammatory Bowel Disease
- Crohn's disease
- Ulcerative Colitis
- Infective Enterocolitis (Only causes)
- Malabsorption syndrome
- Disaccharide Deficiency
- Tropical sprue
- Celiac sprue
- Appendicitis
- Hemorrhoids

LIVER AND BILIARY TRACT

- Jaundice (Causes and Normal physiology)
- Hyperbilirubinemia, Conjugated, Unconjugated
- Viral Hepatitis, Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis D, Hepatitis E,
- Cirrhosis, Causes, Types,
- Post necrotic cirrhosis
- Biliary Cirrhosis (Primary and Secondary)
- Pigment Cirrhosis (hemochromatosis)
- Cirrhosis associated with Wilson's disease
- Cirrhosis associated with antitrypsin deficiency
- Carcinoma of Liver
- Cholangitis and Liver abscess
- Cholelithiasis, Acute and Chronic

PANCREAS;

- Diabetes Mellitus
- Acute and Chronic pancreatitis

DISEASE OF KIDNEY

- Nephrotic Syndrome
- Nephritic Syndrome
- Tubulo Interstitial Nephritis
- Acute Pylonephritis
- Acute drug induced interstitial nephritis
- Chronic analgesic Nephritis
- Acute tubular Necrosis
- Hypertension due to kidney
- Renal Stones
- Renal Cell Carcinoma (Brief)
- Wilm's Tumor (Brief)
- Acute and Chronic Cystitis
- Polycystic disease

DISEASE OF MALE GENITAL SYSTEM

- Epididymitis
- Orchitis
- Urethritis and Prostatitis
- Benign Prostate Hyperplasia
- Carcinoma of Prostate

- Sq. cell Ca. of penis (brief)

DISEASE OF ENDOCRINE SYSTEM

- Pituitary Gland
- Hypopituitarism
- Hyperpituitarism
- Hypothyroidism
- Congenital hypothyroidism
- Primary hypothyroidism
- Hyperthyroidism
- Simple and diffuse goiter
- Multinodular goiter
- Thyroiditis
- Hashimoto's Thyroiditis
- Sub-Acute Thyroiditis
- Chronic Thyroiditis
- Adenoma
- Carcinoma, Papillary
- Follicular, Anaplastic
- Primary hyperparathyroidism
- Secondary hyperparathyroidism
- Hypoparathyroidism
- Cushing Syndrome
- Hyperaldosteronism
- Addison Disease

PRACTICAL

LABORITORY EXAMINATIONS

- Urine complete Examination
- Stool Examination
- Blood Complete Examination
- Semen Examination
- Cerebrospinal Fluid Examination
- Pericardial fluid examination
- Pleural Fluid Examination
- Ascitic Fluid Examination
- Blood Sugar
- Blood Urea
- Blood Cholesterol etc
- Techniques of Clinical Blood Examination for various diseases
- Gastric Analysis
- Tests for liver function text
- Renal function test
- Tests for endocrine abnormalities
- Biopsies and cytologic technique

COURSE CODE: **304**

COURSE NAME: **MICROBIOLOGY AND PARASITOLOGY-II**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with concepts of immunology, parasitology, sterilization and biotechnology

COURSE OUTLINES:

IMMUNOLOGY:

- Introduction and overview
- Elements of innate and acquired immunity
- Immunogens and antigens
- Antibody structure and function
- Antigen antibody interactions
- Immune assays
- Monoclonal and polyclonal antibodies
- Biology of B lymphocytes
- Biology of T lymphocytes
- Role of MHC
- Activation and function of T and B lymphocytes
- Cytokines
- Tolerance and autoimmunity
- Complement
- Hypersensitivity reactions Type I, II, III, IV and V
- Immunodeficiency disorders and neoplasias of lymphoid system
- Transplantation
- Tumor immunology
- Resistance and immunization to infectious disease

PARASITOLOGY:

- The Normal Flora
- Microbiology of Air, Water and Soil
- Historical Introduction
- Helminthology and Occasional Entomology: with special typical medicine, stressing on Morphology
- Life Cycle Pathogenecity
- Laboratory Diagnosis and Prognosis with therapy
- Classification
- Entamoeba histolitica
- Giardia lamblia
- Trichomonas vaginalis
- Leishmania kalazar
- Malaria
- Helminthology
- Cestodes
- Tania saginata
- Diphylobotulinum latus
- Echino coccus
- Granulosus, Nematodes
- Trichuris tricura
- Ascaris lumbricoides
- Enterobusis vermicularis
- Encylostoma duodenale
- Wuchereria bancroftis (Filirasis)

STERILIZATION AND DISINFECTIONS:

FERMENTATION: Introduction to fermentation and important products produced by the fermentation.

BIOTECHNOLOGY: Background of recombinant technology and applications in this field.

PRACTICAL

- Total viable counts of Micro Organisms, Morphological and selective Bio-chemical characterization of some specimen.
- Microbiological analysis of Air, Water and soil.
- Biochemical reactions. Inoculation and sensitivity
- Tests of different bacterias: Staphylococci, Streptococci, Pneumococci, Gonococci, Gram –ve and Gram +ve Bacilli, Acid Fast Bacilli (Mycobacterium Tuberculosis)
- Tests of Parasites and Helminthes

Note: - Students shall maintain their practical note-books with diagrams and necessary entries in accordance with the guidance of relevant subject teacher and shall be certified by him.

COURSE CODE: **306**

COURSE NAME: **PHARMACOGNOSY-II**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with Pharmacognosy of

- alkaloids
- Lipids
- Methods of preparation of mother tinctures
- Allergens and allergenic preparations
- Enzymes
- Poisonous plants
- Antioxidants

COURSE OUTLINES:

RESINS AND RESIN COMBINATION: Introduction, Resins, Oleoresins, Balsams

ALKALOIDS: Introduction, Properties, Classification, Function of alkaloids in plants, Methods of extraction of identification tests, Piperidine Alkaloids, Tropane Alkaloids, Quinoline Alkaloids, Isoquinoline Alkaloids, Indole alkaloids, Imidazole alkaloids, Alkaloidal amines,

LIPIDS: Introduction, study of Fixed Oils, Fats and Related Compounds, Waxes ENZYMES: Enzymes obtained from plant source. (phyto-

enzymes), Papain Bromelain and Malt Extract, Enzymes obtained from Animal source, Rennin pepsin, Pancreatin and pancreatic lipase

POISONOUS PLANTS: General introduction of poisonous plants with special reference to Pakistan.

ANTIOXIDANTS: Cucumber, Amla, Orange, Lemon etc

PREPARATION OF MOTHER TINCTURES from crude drugs for commercial market,

Methods of cultivation, Drying, storage, Preservation, Packing, Deterioration and adulteration of crude medicine, Evaluation of crude medicine i.e. organoleptic, microscopic, physical, chemical and biological

PRACTICAL

- Extraction of the active constituents of crude drugs and chemical tests for their identification.
- Isolation and separation of active constituents of crude drugs by paper and thin layer chromatography and column chromatography.
- Study Tour for collection of medicinal plants from various areas of country.

COURSE CODE: 308

COURSE NAME: HOMOEOPATHIC PHARMACY-II

CREDIT HOURS: 2+1

SPECIFIC OBJECTIVES OF COURSE:

- The preparation of Homoeopathic medicines,
- Different homoeopathic scales of potentisation and trituration
- Drug administration methods
- Concept of prescription

COURSE OUTLINES:

METHODS OF PREPARATION OF

- Mother Tinctures
 - Definition
 - 9 Formulas of Dr. Hahnemann
 - Modern Methods of Preparation of Mother Tinctures
- Solutions
- Potencies and Trituration

ATTENUATION:

- Decimal Scale
- Centesimal Scale
- 50 Millicimal Scale

RADIONIC THEORY and Radionic methods of Homoeopathic remedy preparation

FLEXION POTENCY-METHOD of conversion of trituration into liquid from straight potency

TOPICAL AND TRANSDERMAL DRUG DELIVERY SYSTEM

- Scope
- Lotion
- Liniment
- Glycerol
- Ointment
- Topical gels
- Pastes
- Creams
- Poultice
- Topical tinctures
- Topical powder

ORAL SOLUTIONS

- Syrups
- Elixirs
- Solutions and their preparation
- Dry mixtures for solutions
- Oral rehydrate solutions
- Oral colonic leverage solution
- Syrup Components and preparation
- Elixir, Preparation, medicated and non-medicated
- Powders, Capsules, Tablet Dosage Forms

PRESCRIPTION

- Study of prescription including abbreviations
- Principles and mode of prescription writing and its validity
- Dispensing of Homoeopathic medicines

PHARMACOLOGY:

- Drug Strength
- Homoeopathic Pharmacodynamics
- Dynamic Power
- Medicine
- Posology

- Remedy

BRIEF STUDY OF STANDARDIZATION OF REMIDIES AND VEHICLES

General Knowledge of legislation in relation to Homoeopathic Pharmacy
Study of Biological/mechanical and/or chemical characteristics of some important drugs substances

QUALITY CONTROL AND ASSURANCE:

PRACTICAL

IDENTIFICATION:

- Identification of important Homoeopathic drugs including the brief outline of the methods used for their identification (List attached)
- At least 30 drug substances including 20 from vegetable kingdom and 10 from mineral and chemicals
- Collection of 30 drug substances for herbarium
- Microscopic study of two trituration up to 3x potency

MANUFACTURING:

- Preparation of dispensing and dilute alcohol solutions and dilutions.
- Preparation of mother tinctures of 3 polychrests
- Preparation of Globules
- Preparation of tablets (Micro & Macro)
- Preparation of trituration of 3 crude drugs up to 3x
- Preparation of mother tincture of drugs which do not conform to the D.S.I.
- Preparation of external applications (at least one each)

POTENTISATION:

- Potentisation of 3 mother tinctures up to 3 decimal scale and 3 centesimal scale and 3 fifty millicimal scale

TRITURATIONS:

- Triturations of 3 drugs 6X and their conversion into liquid potencies.

DISPENSING:

- Writing and understanding of prescription
- Dispensing of various homoeopathic drugs including their procedures

LABORATORY METHODS:

- | | |
|----------------|-------------------|
| • Sublimation | • Filtration |
| • Distillation | • Crystallization |
| • Decantation | • Percolation |

STUDY TOUR: visit to homoeopathic laboratories to study the manufacturing of remedies at large scale

COURSE CODE: **310**

COURSE NAME: **PHILOSOPHY OF HOMOEIOPATHY-III (b)**

CREDIT HOURS: **2**

SPECIFIC OBJECTIVES OF COURSE:

To understand theory and practice of different

- Constitutions
- Temperaments
- Diathesis
- Miasmatic diagnosis
- Facial analysis

Homoeopathic concepts compared to different concepts in Medicine

COURSE OUTLINES:

1. DIFFERENT TYPES OF CONSTITUTIONS:

❖ VON GRAUVOGL

- Hydrogenoid
- Oxygenoid
- Carbo-nitrogenoid

❖ VANNIER'S & ZISSUS

- Phosphoric
- Carbonic
- Fluoric

❖ BAZIN:

- Scrofulous
- Gouty
- Syphilitic

2. DIFFERENT TYPES OF TEMPERAMENTS:

- Nervous
- Biliary
- Sanguineous
- Phlegmatic
- Choleric
- Tubercular, etc

3. Different types of diathesis

4. Importance of miasmatic diagnosis

5. In depth study of homeopathic facial analysis technique

6. Miasmatic and constitutional prescription

7. Miasmatic study from practical and clinical point of view

8. Miasms compared to modern pathology

9. Concept of susceptibility from immunological point of view

10. Concept of idiosyncrasy compared to hypersensitivity

COURSE CODE: 312

COURSE NAME: MATERIA MEDICA-II (b)

CREDIT HOURS: 2+1

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines listed in course outlines of this course

COURSE OUTLINES:

- Study of Homoeopathic remedies, emphasizing the following aspects:
- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (VEGETABLE KINGDOM)

- | | | |
|---------------------------|--------------------------------|----------------------------|
| 1. Digitalis purpurea | 13. Kalmia latifolia | 25. Sanguinaria canadensis |
| 2. Dioscorea villosa | 14. Ledum palustre | 26. Spigelia anthelmia |
| 3. Drosera | 15. Lilium tigrinum | 27. Staphysagria |
| 4. Dulcamara | 16. Lycopodium clavatum | 28. Stramonium |
| 5. Euphrasia officinalis | 17. Mezereum | 29. Thuja occidentalis |
| 6. Gelsemium sempervirens | 18. Nux vomica | 30. Veratrum album |
| 7. Helleborus nigra | 19. Opium (papaver somniferum) | |
| 8. Hydrastis | 20. Phytolacca decandra | |
| 9. Hyoscyamus | 21. Podophyllum | |
| 10. Hypericum | 22. Pulsatilla | |
| 11. Ignatia | 23. Rhus tox | |
| 12. Ipecacuanha | 24. Ruta graveolens | |

MATERIA MEDICA-II (B) PRACTICAL/VIVA-VOCE:

Viva-Voce and practical emphasizing chiefly upon the comparative study of the medicines included in this semester.

BHMS FOURTH YEAR

NOTE:

A group of students (Comprised of five to six) will be given a research project in the beginning of Fourth or Final Professional years comprising on any one of the subjects of Homeopathic Philosophy, Homeopathic Materia Medica, Homeopathic Therapeutics and Case Taking & Repertorization.

The students have to submit the report of the project at the end of Final Professional year (i.e. at the end of last Semester). The project report will be compulsory and of 2 Credit Hours. The project report will be evaluated along with practical.

SEMESTER-VII

COURSE CODE: **401**

COURSE NAME: **GYNAECOLOGY AND OBSTETRICS-I**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with theory and practice of various gynecological disorders

COURSE OUTLINES:

GYNAECOLOGY:

DIAGNOSIS

- History taking
- Past history
- Present complains and queries

PATIENT EXAMINATION

- Position of examination
- General examination
- Pelvic examination
- Examination of external genital organs
- Internal examination of genital organs (virginal, cervix) and investigation
- Abdominal examination and differential diagnosis of pregnancy
- Minor gynecological operative procedures

HORMONES:

- Description of different hormones
- Hormone replacement therapy (HRT)

CHANGES IN MENSTRUAL CYCLE:

- Menstrual abnormalities
- Amenorrhea
- Hypomenorrhoea
- Dysmenorrhoea
- Oligomenorrhoea
- Polymenorrhoea
- Dysfunctional uterine bleeding
- Postmenopausal bleeding

VULVAL DISORDERS:

- Inflammation (primary and secondary)
- Pruritus
- Vulval abscess
- Tumors of vulva
- Vulvae lesions

VAGINAL DISORDERS:

- Leucorrhoea (vaginal discharge)
- Inflammation of vagina (gonorrhoeal tuberculosis and syphilitic and cystic)
- Abscess of vagina
- Tumor of vagina
- Vesico-vaginal fistula and recto-vaginal fistula
- Cystocele rectocele (genital prolapse)
- Vaginismus

DISORDERS OF UTERUS:

- Endometritis
- Acute and the chronic erosion
- Tumor of the uterus
- Fibroids
- Adenoma
- Cancer

DISORDERS OF CERVIX:

- Inflammation
- Tumors

DISORDERS OF FALLOPIAN TUBES:

- Salpingitis
- Acute and chronic abscess of fallopian tube
- Tumors of fallopian tube

DISORDERS OF OVARIES:

- Oophoritis (acute and chronic)
- Abscess
- Tumors
- Cysts of ovaries

DISORDERS OF URETHRA

- Retention of urine
- Cystitis (acute and chronic)
- Stricture

DISORDERS OF MAMMARY GLANDS:

- Brief anatomy and physiology of mammary gland
- Diseases of mammary gland

SEXUALLY TRANSMITTED DISEASES:

1. BACTERIAL

- Gonorrhoea
- Syphilis
- Tuberculosis

2. VIRAL: AIDS

INFERTILITY: Sites, causes, latest investigations, diagnosis and treatment

ECTOPIC PREGNANCY: Sites pathology differential diagnosis management treatment

POPULATION PLANNING AND CONTRACEPTION: Indication contraindication methods complications

GENITAL TRACT INFECTION: Infection of upper genital tract infections of lower genital tract genital tuberculosis

DISPLACEMENT OF UTERUS: Prolapsed retroversion inversion causes diagnosis management and treatment

GESTATIONAL TROPHOBLASTIC DISORDERS: Hydatid form mole trophoblastic tumors

MISCELLANEOUS GYNECOLOGICAL DISORDERS:

- Dyspareunia
- Dysmenorrhoea
- Backache
- Pelvic diseases
- Hysteria
- leukoplakia
- Pelvic floor injuries

HIRSUTISM AND INTERSEXUALITY: Problems of marriage and sex

COMMON GYNECOLOGICAL OPERATIONS AND INSTRUMENTS:

Preoperative preparations role of ultra sonography in gynecology

POST OPERATIVE COMPLICATIONS AND ITS MANAGEMENT

PRACTICAL

Students to examine out door indoor patients, take history and to get complete information about diagnosis and treatment, all the instruments issued in gynecological examination should be recognized and their uses known, conduction of gynecological test.

COURSE CODE: 403

COURSE NAME: MATERIA MEDICA-III (a)

CREDIT HOURS: 3

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines listed in course outlines of this course

COURSE OUTLINES:

- Study of Homoeopathic remedies, emphasizing the following aspects:
- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (MINERALS)

ACIDS

- | | | | |
|----|-------------------|----|---------------------|
| 1. | Acidum Muriaticum | 3. | Acidum Phosphoricum |
| 2. | Acidum Nitricum | 4. | Acidum Picricum |

ANTIMONY

- | | | | |
|----|-------------------|----|-----------------------|
| 5. | Antimonium Crudum | 6. | Antimonium Tartaricum |
|----|-------------------|----|-----------------------|

ALUMINIUM

- | | | | |
|----|--------|----|---------|
| 7. | Alumen | 8. | Alumina |
|----|--------|----|---------|

AMMONIUM

- | | | | |
|----|---------------|-----|--------------|
| 9. | Ammonium Carb | 10. | Ammonium Mur |
|----|---------------|-----|--------------|

ARSENIC

- | | |
|-----|-----------------|
| 11. | Arsenicum Album |
|-----|-----------------|

BARIUM

- | | | | |
|-----|-------------|-----|-------------|
| 12. | Baryta Carb | 13. | Barayta Mur |
|-----|-------------|-----|-------------|

BISMUTH

- | | |
|-----|----------------------|
| 14. | Bismuthum Metallicum |
|-----|----------------------|

BORAX

- | | |
|-----|-------|
| 15. | Borax |
|-----|-------|

BROMINE

- | | |
|-----|---------|
| 16. | Bromium |
|-----|---------|

CADMIUM

- | | |
|-----|---------------|
| 17. | Cadmium Sulph |
|-----|---------------|

CALCIUM

- | | | | |
|-----|-------------------------|-----|----------------------|
| 18. | Calcareo Carbonica | 21. | Calcareo Sulphoricum |
| 19. | Calcareo Flouricum | | |
| 20. | Calcareo Pophosphoricum | | |

CARBON

- | | |
|-----|-----------|
| 22. | Graphites |
|-----|-----------|

COPPER

- | | |
|-----|-------------------|
| 23. | Cuprum Metallicum |
|-----|-------------------|

GOLD

- | | |
|-----|------------------|
| 24. | Aurum Metallicum |
|-----|------------------|

IODINE

- | | |
|-----|--------|
| 25. | Iodium |
|-----|--------|

IRON

- | | | | |
|-----|-------------------|-----|---------------------|
| 26. | Ferrum Metallicum | 27. | Ferrum Phosphoricum |
|-----|-------------------|-----|---------------------|

MAGNESIUM

- | | | | |
|-----|--------------------|-----|------------------------|
| 28. | Magnesia Carbonica | 30. | Magnesium Phosphoricum |
| 29. | Magnesia Muriatica | | |

COURSE CODE: 405

COURSE NAME: PSYCHOLOGY AND PSYCHIATRY

CREDIT HOURS: 3

COURSE OUTLINES:

PSYCHOLOGY

INTRODUCTION

- Definition
- Psychology as behavioral science
- Scope
- Roots of modern Psychology
- Methods in Psychology

GROWTH AND DEVELOPMENT:

- Infancy and childhood
- Stages of cognitive, moral reasoning development
- Erickson's Psycho-social developmental stages
- Personality development in early childhood
- Changes during adolescent to adult year

MOTIVATION AND EMOTION:

- Basic motives
- Biological and Psychological
- Instinctual behavior, Theories about it
- Emotional development
- Infancy to adult years
- Determinants of emotional behaviors

PERSONALITY:

- Definition
- Characteristics of Personality
- Theories about personality
- Assessment of Personality

CONSCIOUSNESS,

- Sleep and Dreams
- Stages of consciousness
- Psychoanalytic aspect
- Sleep, patterns
- Dreams, significance

LEARNING AND MEMORY:

- Classical conditioning
- Operant conditioning
- Other types of learning
- Short term memory
- Long term memory

STRESS:

- Definition, types
- Reaction to stress
- Psychological/Physiological

INTELLIGENCE:

- Definition
- Intelligence assessment test

PSYCHIATRY

Classification of Psychiatric Disorder (Brief Review)

Psychiatric Treatment Modulates, With Objectives

PSYCHIATRIC DISORDERS Symptoms, Etiology:

- Neurotic disorders
- Generalized Anxiety disorder
- Phobia
- Delusions
- Illusions
- Hysteria
- Mood disorders
- Depression
- Mania
- Psychotic disorders
- Schizophrenia
- Psychosomatic disorders
- Organic disorders
- Delirium
- Dementia
- Amnesic disorders
- Epilepsy
- Personality disorders
- Mental retardation
- Psychosexual disorders
- Drug Dependence

COURSE CODE: 407

COURSE NAME: FORENSIC MEDICINE AND TOXICOLOGY-I

CREDIT HOURS: 3

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with subject of Forensic Medicine

COURSE OUTLINES:

FORENSIC MEDICINE:

- Introduction
- Forensic Medicine (Definition)

- Medical Jurisprudence
- Courts of Pakistan and their Powers. Legal procedures
- Inquest
- Evidence and type of evidence
- Dying declaration and dying deposition
- Physician in the witness box
- Medical Ethics
- Privileges and Duties of Medical Practitioners
- Physician-Patient relationship
- Legal aspects of medical practice, consent and negligence

PERSONAL IDENTIFICATION

- Parameters of personal identity; methods of identifying living, dead, decomposed, mutilated and burnt bodies, and skeletal and fragmentary remains; Using special techniques (Dentistry: Radiology, Neutron Activation Analysis etc.), and objective methods of identification (Osteometry, Dactyloscopy, DNA Technique, Super imposition photography etc.).
- Methods of determination of age, sex and race by various methods with their medico- legal aspects.
- Methods to trace evidence, Locard's Principle of exchange and its medico- legal significance.

THANATOLOGY:

- Definition
- Stages of death
- Signs of death
- Saponification
- Mummification
- Cadaveric spasm
- Types of death
- Syncope
- Coma
- Deaths from Asphyxia
- Sudden death; causes, Accidental, Suicidal, Homicidal
- Death due to starvation, Heat, Cold

TRAUMATOLOGY:

- Mechanical injuries:
- Mechanism of wound production
- Classification of wounds
- Firearms
- Ammunition
- Ballistics
- Medico legal aspects

BURN AND SCALD:

- Definition
- Various systems of classification
- Types Thermal, Chemical, and Electrical injuries

- Ante Mortem and Post Mortem burn
- Causes of death
- Medico legal aspects

ASPHYXIA: Students should be able to:
Define, Classify, causes of, and detect the Anatomical, Physiological, Biochemical and Pathological signs of violent death; and of Mechanical, chemical and environmental asphyxial death and their medico-legal implications.

AUTOPSY AND DEATH CERTIFICATE:: Students should know

- Types, objectives, rules, & techniques, and describe procedure for post-mortem
- Methods for Assessment of Fatal period and post-mortem interval. Post-mortem Artifacts
- Risks & Hazards of Autopsy, and Autopsy Protocol.
- Procedure for selection & reservation, labeling & dispatch of Biological and non-Biological materials for laboratory examination; and should be able to collect relevant samples.
- Exhumation procedures, its value and limitations.
- Legal aspects of death certificate and method to write death certificate

FORENSIC SEXOLOGY: Student should be able to describe the approach to impotence, determination of virginity, pregnancy and criminal process during delivery, their medico legal aspects, examination procedures and reporting.

SEXUAL OFFENCES AND RELEVANT SECTIONS OF LAW: Students should be able to differentiate between natural and unnatural sexual offence and know how to perform a medical examination of victim, collect specific specimen and write a required certification. Student should be able to list common sexual perversions and address their causes.

ABORTION

Definition, Miscarriage, virginity, puberty, Pregnancy, Symptoms
Criminal, procedure, medico legal aspect

Students should be able to determine the relevant section of law, medico legal aspects applicable to miscarriage, examine mother and aborted material and storage of aborted material in proper preservative for examination.

INFANTICIDE:

Definition, reasons of this crime, dead born and still born.
Death of infants due to natural causes and accidents,
Death due to criminal cause, acts of omission and commission.

Student should be able to identify infanticide and criminal and non-accidental violence or abuse to a newborn, infant or child.

COURSE CODE: **409**

COURSE NAME: **PEDIATRICS-I**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

To understand various concepts in neonatology and infectious diseases in infants and children

COURSE OUTLINES:

History Taking and Physical Examination

Growth and Development

Immunization

Nutrition

Protein Energy Malnutrition

NEONATOLOGY:

- Resuscitation of newborn
- Prematurity
- Low Birth weight
- Jaundice in new born
- Neonatal sepsis
- Hypoglycemia
- Hypocalcaemia
- Neonatal Seizures
- Hemorrhagic disease of Newborn
- Tetanus neonatorum
- Respiratory distress in the newborn period
- Hyaline membrane disease (HMD)
- Intra cranial Hemorrhage
- Infant of Diabetic mother (IDM)
- Maternal medication and Fetal Hazards

INFECTIOUS DISEASES:

- Diarrhea
- Poliomyelitis
- Diphtheria
- Pertussus
- Pulmonary
- T.B., Measles
- Typhoid Fever
- Hepatitis
- Hepatic Failure
- Rheumatic fever
- Protozoal Infection
- Pica
- Fever of unknown origin

COURSE CODE: **411**

COURSE NAME: **HOMOEOPATHIC THERAPEUTICS-I (a)**

CREDIT HOURS: 3

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with various diseases and their Homoeopathic treatment

COURSE OUTLINES:

Introduction to Homoeopathic Therapeutics

SYMPTOMATIC INFLAMMATORY AND INFECTIOUS DISORDERS

- Acute inflammation
- Chronic inflammation
- AIDS
- Chicken pox
- Cholera
- Dengue
- Elephantiasis
- Erysipelas
- Fever, different types
- Gonorrhoea
- Influenza
- Leprosy
- Measles
- Mumps
- Rabies
- Syphilis
- Tuberculosis
- Typhoid fever

SYMPTOMATIC EYE DISORDERS

- Cataract
- Color Blindness
- Conjunctivitis
- Diplopia
- Glaucoma
- Hypermetropia
- Keratitis
- Lachrymal Duct Disorders
- Myopia
- Optic Nerve Atrophy
- Photomania
- Post Operative troubles
- Retinal Haemorrhage and Detachment
- Retinopathy
- Squint
- Stye

SYMPTOMATIC E.N.T. DISORDERS

- Adenoiditis
- Boil of the nose
- Deafness sensory, neural and conductive
- Discharge from the ear
- Ear ache
- Epistaxis
- Laryngitis
- Nasal hypertrophy
- Nasal polyposis
- Pharyngitis
- Post operative troubles
- Rhinitis
- Sinusitis
- Snoring
- Throat cancer
- Tinnitus
- Tonsillitis

SYMPTOMATIC RESPIRATORY SYSTEM DISORDERS

- Asthma
- Bronchitis
- Bronchiectasis
- Chronic obstructive pulmonary disease (COPD)
- Cold and Coryza
- Emphysema
- Haemoptysis
- Lung cancer
- Pleurisy
- Pneumonia
- Pulmonary tuberculosis
- Whooping cough

SEMESTER-VIII

COURSE CODE: **402**

COURSE NAME: **GYNAECOLOGY AND OBSTETRICS-II**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To understand and learn

- General embryology
- Normal and abnormal pregnancy
- Normal and abnormal labor
- Normal and abnormal puerperium
- Obstetrical procedures and operations:
- Newborn and its disorders:

COURSE OUTLINES:

OBSTETRICS:

- Introduction
- Obstetrical history taking and examination
- Conception
- Implantation
- Formation of zygote
- Menstrual cycle and events of cycle including hormonal influence
- Placenta structure functions development and abnormalities
- Amnion and liquor Amnii and its role
- Chorion
- Umbilical cord deciduas and its functions

FEOTUS:

- Size
- Fetal circulation
- Diameter, fetal and obstetrical
- Examination
- Bony pelvic axis
- Pelvic abnormalities
- Fetal monitoring

NORMAL PREGNANCY:

- Clinical signs and symptoms of pregnancy
- Diagnosis of pregnancy
- Duration of pregnancy
- Hyper emesis gravidum
- Physiological maternal changes during pregnancy
- Antenatal care and fetal examination methods
- Advice during pregnancy
- Harmful drug effect

ABNORMAL PREGNANCY:

- Early pregnancy loss and its management (abortion)
- Pregnancy with fibroids
- Ovarian cyst and prolapsed placental abnormalities
- Umbilical cord abnormalities
- Antepratum hemorrhage
- Placental abruption types, diagnosis management and treatment
- Placenta praevia, types, diagnosis management and treatment
- Polyhydroamnia and oligohydroamnia
- Hypertensive disorders during pregnancy
- Essential hypertension
- Pre eclampsia, Causes diagnosis prevention management and treatment
- Eclampsia stages and management
- Renal diseases during pregnancy
- Infections during pregnancy
- Pregnancy with jaundice
- Pyrexia in pregnancy
- Intrauterine fetal death
- Intrauterine growth retardation and its management
- Prematurity post maturity
- Multiple gestations

NORMAL LABOUR:

- Physiology of labour
- Satges and onset of labour
- Uterine contraction sign and symptoms of parturition
- Conduction of normal delivery complete description
- Stages of labor management of 1st 2nd and 3rd stage of labor
- Mechanism of labour
- Analgesia during labour
- Oxytistic drugs

ABNORMAL LABOUR:

- Prolong labour and its assessment
- Types of prolong labour and management
- Fetal malpresentation, causes, types, mechanism, diagnosis, management and treatment. Occipto posterior position

- Deep transverse arrest
- Breech presentation
- Brow presentation
- Face presentation
- Shoulder presentation
- Cord prolapsed
- Unstable lie/transverse lie
- Compound presentation
- Cephalopelvic, disproportion

- Obstructed labour and premature rupture of membrane
- Post partum hemorrhage its types causes clinical finding management and treatment
- Post partum pituitary necrosis

NORMAL PUERPERIUM:

- Duration, management of puerperium
- Lochia
- Postnatal checkup
- Baby examination
- Immediate care to baby

- Normal progress of new born
- Infant feeding
- Merits and demerits of breast feeding

ABNORMAL PUERPERIUM:

- Puerperal pyrexia
- Genital tract infection
- Urinary tract infection

- Breast disorders in details
- Homeostatic disorders

OBSTETRICAL PROCEDURES AND OPERATIONS:

- Introduction of labour
- Types process and indication of episiotomy
- Forceps and vacuum extractor operation
- Caesarean section (operation delivery)

- Indication procedure and management role of ultra sound in obstetrics
- Vital statistics

NEWBORN AND ITS DISORDERS:

- Examination and care of newborn
- Asphyxia Neonatorum
- Birth injuries
- Icterus Neonatorum
- Hemorrhagic disease
- Evaluation of newborn
- Resuscitation
- Low birth weight

- Congenital malformation
- RH incompatibility
- Thalasemia major, Thalasemia minor
- Minor problems of new born
- Fetal congenital abnormalities

PRACTICAL

Students to examine out door indoor patients, take history and to get complete information about diagnosis and treatment, all the instruments issued in gynecological examination should be recognized and their uses known, conduction of gynecological test.

COURSE CODE: **404**

COURSE NAME: **MATERIA MEDICA-III (b)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines listed in course outlines of this course

COURSE OUTLINES:

Study of Homoeopathic remedies, emphasizing the following aspects:

- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (MINERALS)

MERCURY

1. Mercurius Corrosivus
2. Mercurius Dulcis
3. Mercurius Solubilis

NITROGLYCERINE

4. Glonoinum

PHOSPHORUS

5. Phosphorus

PLATINUM

6. Platinum Metallicum

PLUMBUM

7. Plumbum Metallicum

POTASIUM

- | | |
|---------------------|-----------------------|
| 8. Kali Bichromicum | 12. Kali Muriaticum |
| 9. Kali Bromatum | 13. Kali Phosphoricum |
| 10. Kali Carbonicum | 14. Kali Sulphuricum |
| 11. Kali Iodide | |

RADIUM

15. Radium Bromatum

SELENIUM

16. Selenium Metallicum

SILICEA

17. Silicea

SILVER

- | | |
|-------------------------|-----------------------|
| 18. Argentum Metallicum | 19. Argentum Nitricum |
|-------------------------|-----------------------|

SODIUM

- | | |
|-----------------------|-------------------------|
| 20. Natrum Carbonicum | 22. Natrum Phosphoricum |
| 21. Natrum Muriaticum | 23. Natrum Sulph |

STANNUM

24. Stannum Metallicum

SULPHUR

- | | |
|-----------------|-------------|
| 25. Hepar Sulph | 26. Sulphur |
|-----------------|-------------|

TITANIUM

27. Titanium Metallicum

VANADIUM

28. Vanadium Metallicum

ZINC

- | | |
|-----------------------|-------------------------|
| 29. Zincum Metallicum | 30. Zincum Phosphoratum |
|-----------------------|-------------------------|

PRACTICAL/VIVA-VOCE

Viva-Voce and practical emphasizing chiefly upon the comparative study of the medicines included in this semester.

COURSE CODE: 406

COURSE NAME: OPTHALMOLOGY AND E.N.T.

CREDIT HOURS: 3+1

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with theory and practice of diseases of eye, ear, nose and throat

COURSE OUTLINES:

EYE: Anatomy and Physiology of the Eye Ball and Orbit, Diseases of the eye:

LIDS; Anatomy, Classification of lid disease, Blepharitis, Stye, Chalazion, Triehiasis, Entropion, Ectropion, Symblepharon, Ptosis, Tumours, Herpes Zoster.

LACHRYMAL APPARATUS; Anatomy, Composition circulation and function of tear film, Dry eye, Excessive watering (Epiphora) Dacrayoeys- titis (acute and chronic)

ORBIT; Orbital cellulitis, Proptosis, Exophtalmos, Enophthalmos, Tumours

CONJUNCTIVA; Anatomy, Classification of conjunctival disease, Conjunctivitis, (Viral, Bacterial and Allergic), Trachoma, Pinguecula, Pterygium, Ophthalmia neonatorum

CORNEA; Anatomy, Classification of corneal diseases, Corneal ulcers, Keratoconus, Corneal opacities, D/D Keratoplasty

SECLERA; Anatomy, Episcleritis, Secleritis

UVEAL TRACT; Anatomy, Classification of uveal tract disease, Uveitis, Panophthalmitis, D/D of red eye,

LENS; Anatomy, Cataract,

VITREOUS; Anatomy, Blood in viterous, Glaucoma; Physiology of aqueous formation and circulation, Maintenance of normal intraocular pressure

RETINA; Anatomy, Classification of retinal diseases, Retinal detachments and degeneration,, Diabetic retinopathy, Hypertensive retinopathy, Occlusion of retinal artery, Occlusion of retinal vein, Retinoblastoma, macular degeneration

OPTIC NERVE; Papilloedema, Optic Neuritis, Opilitis, Acute Retrobulber neuritis, Toxic ambylophia, Optic atrophy, hemianopias

INJURIES: Extraocular foreign bodies, Blunt injuries, perforating injuries with intraocular foreign bodies, injury due to burns and chemicals.

SQUINT: Definition and Classification

PUPIL: Anatomy, Papillary pathways, Significance of pupillary size and reaction in diseases

OCCULAR manifestation of Vitamin A, Deficiency, and its management

ERRORS OF REFRACTION: Optical system of normal eye, Myopia, Hypermetropia, Stigmatism, Presbyopia, Aphakia, astigmatism

EAR: Diseases of the Ear: Applied anatomy and physiology, Symptoms, Signs and investigations of ear, Congenital disorders, Ear ache, Discharge from the ear, Otitis externa, Otitis media, Deafness sensory, neural and conductive, Tinnitus, Vertigo, Facial palsy, Tumors of ear

NOSE AND PARA NASAL AIR SINUSES: Diseases of Nose: Applied anatomy and physiology, Congenital disorders, Symptoms, Signs, and investigations of Nasal and Sinus diseases, Nasal septal disorders, Nasal trauma, Epistaxis, Rhinitis, Nasal polyposis, Sinusitis, Headache, Boil of the nose, Cavernous sinus thrombosis, Foreign body in the nose, Rhinolith and Peenosh, Vestibulitis. Hypertrophy

THE MOUTH AND SALIVARY GLANDS: Diseases of Mouth: Applied anatomy and physiology, Congenital disorders, Dental caries and periodontal diseases, Stomatitis, Ulcers, Candidiasis, Oral manifestation of systemic disease, Premalignant conditions of oral mucosa, Leukoplakia, Erythroplakia, Cancer of oral cavity, Infection of salivary glands, Stone in the salivary glands, Tumor of salivary glands, Ranula.

THE THROAT: Diseases of Throat: Applied anatomy and physiology, Congenital abnormalities, Symptoms, Signs and investigation of throat diseases, Pharyngitis, Tonsillitis, Quinsy, Adenoiditis, Dysphagia, Dysphonia, Tumors of esophagus and pharynx, Laryngitis, Vocal nodule, Recurrent laryngeal nerve palsy, Vocal cord paralysis, Epiglottitis, Laryngo tracheo bronchitis, Foreign body in the larynx, Thyroid disease, Snoring, Indication of tracheotomy and tracheotomy, Lump in the neck, Mediastinal tumors compressing larynx, Retropharyngeal abscess, Diphtheria

CLINICAL

EYE:

- History taking

- Simple examination with torch
- Visual acuity testing
- Visual field testing
- Regurgitation test
- Measurement of intraocular pressure (digital, tonometry)
- Eversion of upper eye lid
- Dressing of corneal ulcer and post operative dressing
- Identification of lenses and their uses
- Identification of lenses and their uses
- Theoretical principal of retinoscopy
- Ophthalmoscopy practical ability of direct, theoretical principal of indirect, Use of slit lamp

ENT:

- History taking
- Examination of external ear, throat, sinuses and general examination
- Use of otoscope and ear speculums
- Use of tuning fork (Webbers test, Rinnes test and ABC test)
- Use of nasal speculum
- Use of tongue depressor
- Examination of nasopharynx
- Transillumination test for paranasal air sinuses
- Indirect laryngoscopy
- Introduction to instruments used in ENT examination and operation

COURSE CODE: **408**

COURSE NAME: **FORENSIC MEDICINE AND TOXICOLOGY-II**

CREDIT HOURS: **2**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint students with subject of toxicology and legal issues related to forensic medicine and toxicology

COURSE OUTLINES:

FORENSIC PSYCHIATRY:

Students should be able to diagnose mental illness, Distinguish between true and feigned insanity, Advise on procedure of restraint of mentally ill, List limitation to civil and criminal responsibilities of mentally ill.

EXAMINATION OF BIOLOGICAL SPECIMENS:

Students should be able to describe the forensic importance of biological specimens (blood, semen, vomitus, saliva, breath, urine, hair). The method of their collection, preservation, dispatch and the common laboratory test performed.

LAW RELATED TO HOMOEOPATHY & MEDICAL MAN:

Medical ethics including religious aspects, privileges and duties of medical practitioners, Physician-patient relationship, Legal aspects of medical practice, consent, negligence

TOXICOLOGY:

GENERAL PRINCIPLES OF TOXICOLOGY

- Poison, Definition
- Classification, Medico legal classification
- Routes of Administration and Elimination of Poison
- Factors modifying the effects / action of poison
- Diagnosis and Treatment of poisoning, Poison and Crime
- Special; Signs and Symptoms
- Causes of death and Treatment of poisoning by following briefly
- Autopsy techniques with collection, preservation and dispatch of Biological material to analytical laboratory.]
- Handling specimens.
- Preparation and interpretation of chemical examiners reports.

SPECIFIC POISONS

- Corrosive Poisons
- Mineral Acids ----- Sulphuric, Nitric and Hydrochloric Acids, Organic Acids Oxalic, Carbolic and Salicylic Acids
- Alkalis ----- Ammonia, Caustic soda and Potash, Irritant Poisons
- Inorganic ---- Non metallic poisons ---- Phosphorus
- Metallic poisons ---- Arsenic, Antimony, Mercury, and Copper
- Vegetable poisons ---- Caster Oil Seeds, Chitralal, Chitra, Madar,
- Animal Poisons
- Snake poisons ---- Poisonous and Non Poisonous snakes
- Signs and Symptoms of snake poisoning, Treatment
- Poisonous Insects
- Specific Poisons
- Cerebral ---- Dhatura, Belladonna, Atropine, Cocaine, Alcohol, Chloroform, Ether, Chloral Hydrate, Opium, Barbiturate, Bhang
- Spinal ----- Strychnine, Cardiac ----- Digitalis, Aconite
- Others ----- Hydrocyanic Acid, Kerosene Oil, CO₂ Coal Gas.

COURSE CODE: **410**

COURSE NAME: **PEDIATRICS-II**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To understand various diseases of infants and children

COURSE OUTLINES:

RESPIRATORY SYSTEM: Foreign body inhalation, Bronchiolitis, Group, Acute Epiglottitis, Pneumonia, Bronchial Asthma, Respiratory distress, Pulmonary Tuberculosis, Pleural effusion, Cystic Fibrosis.

C.V.S: Congestive heart failure, Fetal Circulation, Cyanotic Heart Diseases, Tetralogy of Fallot, Transposition, Tricuspid Artesia, Pulmonary Artesia, Truncus Arteriosus, Total anomalous Pulmonary Venous Drainage, Cyanotic” Heart Diseases, VSD, ASD, PDA, Pulmonary Stenosis, Aortic Stenosis, Coarctation.

C.N.S: Epilepsy, Convulsions, Meningitis, Encephalitis, Coma, Mental Retardation, Cerebral Palsy, Guillian – Barre Syndrome, Febrile Fits.

Hematology / Oncology: Anemia, Thalasemia, Disorders of Platelets, G6 PD deficiency, Leukemia, Hodgkin disease and lymphoma.

ENDOCRINE / GENETIC / METABOLIC: Hypothyroidism, Diabetes mellitus, Rickets, Down’s syndrome, Glycogen storage disease, Lipid storage disease.

NEPHROLOGY: Acute glomerulonephritis, nephritic syndrome, acute renal failure, chronic renal failure, U.T.I.

COMMON SKIN DISORDERS IN CHILDREN: Vascular birth marks, Pyoderma, Viral infections, parasitic infestations of skin, Ichthyosis, Lesions characterized by formation of bullae, Atrophic dermatitis, Acne.

CLINICAL

Pediatrics medicines consisting of detailed history taken (Neonatal and Child examination), with systemic examinations involving nearly all systems of human body regarding positive findings, differential diagnosis, management, final diagnosis, follow-up (Resuscitation), minor medical surgical procedures), and specialized referral for highly specialized management

COURSE CODE: 412

COURSE NAME: HOMOEOPATHIC THERAPEUTICS-I (b)

CREDIT HOURS: 2+1

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with various diseases and their Homoeopathic treatment

COURSE OUTLINES:

SYMPTOMATIC DISORDERS OF ENDOCRINE SYSTEM:

- Addison's disease
- Acromegaly
- Cushing Syndrome
- Diabetes Inspidus
- Diabetes Mellitus
- Graves's disease
- Hyperthyroidism
- Hypothyroidism
- Hypoglycemia
- Hyper and Hypo pituitrism
- Simple and Toxic Goiter

SYMPTOMATIC NERVOUS AND PSYCHOLOGICAL DISORDERS:

- Anxiety disorder
- Cerebral edema
- Cerebral embolism
- Chorea
- Convulsions
- Delirium
- Dementia
- Encephalitis
- Epilepsy
- Facial paralysis (Bell's palsy)
- Headache
- Hemiplegia
- Hypochondriases
- Hysteria
- Insomnia
- Mania
- Meningitis
- Migraine
- Neurasthenia
- Neuralgia
- Neuritis
- Numbness
- Paralysis
- Paraplegia
- Parkinsonism
- Poliomyelitis
- Stroke
- Tabes dorsalis
- Trigeminal neuralgia
- Vertigo

SYMPTOMATIC G.I.T DISORDERS

- Anorexia
- Appendicitis
- Cholera
- Constipation
- Crohn's Disease
- Diarrhea
- Dysentery
- Fissure
- Fistula
- Gastritis
- Gastro Enteritis
- Gastro-esophageal Reflux
- Haematemesis
- Hiccough
- Intestinal obstruction
- Intestinal Tuberculosis
- Intestinal Worms
- Melena
- Oesophagitis
- Peptic Ulcers
- Piles
- Stomatitis
- Ulcerative Colitis
- Vomiting

SYMPTOMATIC DISORDERS OF LIVER AND EXTRA HEPATIC TISSUES:

- Bacterial and Viral Hepatitis
- Cholelithiasis
- Cholecystitis
- Dropsy (Ascites, Anasarca)
- Hepatic Insufficiency
- Hepatomegaly
- Jaundice
- Liver Abscess

- Liver
- Pancreatitis
- Splenitis
- Cirrhosis
- Peritonitis
- Splenomegaly

PRACTICAL/VIVA

Every student will register 20 different cases in a note book with record of case taking, diagnosis, Repertorization and prescription from conditions mentioned in syllabi of 1st and 2nd semesters of this tear.

BHMS FINAL YEAR

SEMESTER-IX

COURSE CODE: **501**

COURSE NAME: **CLINICAL METHODS AND IAGNOSTICS-I**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

Aims and Objectives of this module will build on experience and understanding developed in the therapeutic relationship. It will provide a through understanding of the functioning examination and assessment of the body systems such as cardiovascular respiratory gastrointestinal and neurological students take training in clinical knowledge examination skills and to provide an integrated approach in understanding the causes and the essential features of the symptoms and signs most commonly seen in clinical practice. This will draw on the skills attained in the human science, clinical science and previous diagnostic skill modules.

The students will achieve an understanding and detailed knowledge of the differential diagnosis of the symptoms and signs related to the following; The cardiovascular system, The respiratory system, The gastrointestinal system, The urinary system, The nervous and musculoskeletal system, Other problems, including weight disorders, temperature changes, psychiatric problems, ear, nose, and throat problems emergency conditions and conditions requiring immediate referral for diagnostic and therapeutic reasons, Additionally in cases where the diagnostic investigations available to herbal practitioners are insufficient to exclude a serious pathology, students will be aware of their urgent responsibility to refer for thorough medical investigations. Examples of such cases include Dysphagia, bleeding per rectum, severe cardiac arrhythmias.

COURSE OUTLINES:

CLINICAL REVIEW: Review of general history, review of examination

CARDIOVASCULAR PROBLEMS: Review of examination of the heart with differentiation of normal heart sounds (S1 and S2) and numbers, Differential diagnosis of chest pain palpitation shortness of breath edema Ascites changes in blood pressure, lower limb pain.

RESPIRATORY PROBLEMS: Review of the examination of the lungs with recognition of bronchial sound, added sounds, wheezing sounds, pulmonary edema, bronchial breathing, and peak flow rate measurement. Differential diagnosis of clubbing, cough, cyanosis, sputum production and Haemoptysis

ABDOMINAL PROBLEMS: Review of examination of the abdomen, Differential diagnosis of abdominal pain, nausea, and vomiting, constipation, diarrhea, GIT bleeding, indigestion

UROGENITAL PROBLEMS: Review of urogenital system and urinalysis, Differential diagnosis of dysuria and frequency, haematuria, polyuria, incontinence

COURSE CODE: **503**

COURSE NAME: **CASE TAKING & REPERTORIZATION-I**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

To develop the ability of case taking from a Homoeopathic perspective in young professionals

COURSE OUTLINES:

CASE TAKING

- The patient's symptoms and history
- History of the development of the symptoms, implication of the patient's Description of his complaints
- The duration of the symptoms
- Modification of symptoms
- The mode of onset
- Eliciting the symptoms
- Recording of symptoms
- Difficult cases
- Taking the acute case
- Difficulties of taking a chronic case
- Recording of a case and usefulness of record keeping

- Arrangements of symptoms
- Totality of symptoms
- Prescribing symptoms
- Uncommon, peculiar and characteristic symptoms
- General and particular symptoms
- Evaluation of symptoms
- “Eliminating” symptoms
- Analysis of the case
- Uncommon and common symptoms
- Gradation and evaluation of symptoms
- Importance of mental symptoms
- Kind and sources of general symptoms
- Concomitant symptoms
- Initial prognostic evaluation
- Case analysis for the beginners
- Case analysis for the advanced prescribers
- Selection of potency
- Single remedy/group remedy prescribing
- The dose
- The remedy reaction
- The follow up interview
- Initial interview for scheduling follow ups
- Format for the follow up visit
- The Homoeopathic aggravation
- Evaluation at one month
- Principal involved in long-term management
- Fundamental principles
- Application in particular patient categories
- Deep miasmatic case
- Incurable cases
- Complicated cases
- Homeopathically disordered cases
- Allopathic disordered or suppressed cases
- Terminal cases

COURSE CODE: **505**

COURSE NAME: **MATERIA MEDICA-IV (a)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines listed in course outlines of this course

COURSE OUTLINES:

Study of Homoeopathic remedies, emphasizing the following aspects:

- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (NOSODES)

NOSODES

1. Anthracinum	10. Bacillinum	19. Vaccinum
2. Diphtherinum	11. Secale	20. Variolinum
3. Medorrhinum	cornutum	21. Staphylococcinum
4. Psorinum	12. Ustilago maydis	m
5. Syphilinum	13. Ambra Grisea	22. Streptococcinum
6. Schirrinum	14. Calculus renalis	23. Meningococcinum
7. Carcinocin	15. Malaria	24. Influenzinum
8. Tuberculinum	officinalis	25. Hydophobinum
bovinum	16. Malandrinum	26. Typhoidinum
9. Tuberculinum	17. Morbillinum	27. Boletus Laricis
Koch	18. Pyrogenum	28. Epitheliomine

BOWEL NOSODES

29. Morgan	31. Mutabile	34. Dysentery-co
(Bach)	32. Bacillus no.7	35. Sycotic-co
30. Proteus	33. Gaertner	36. Faecalis

COURSE CODE: **507**

COURSE NAME: **HOMOEOPATHIC THERAPEUTICS-II (a)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with various diseases and their Homoeopathic treatment

COURSE OUTLINES:

SYMPTOMATIC SKIN DISORDERS

- Abscess
- Acne
- Alopecia
- Baldness
- Barber's itch
- Blister
- Boil
- Bromidrosis
- Burn and scald
- Carbuncle
- Cellulites
- Cracks of skin
- Dandruff
- Discoloration of the skin
- Eczema
- Hyper hydrosis
- Ichthyosis
- Leukoderma/vitiligo
- Keloid
- Miliaria rubra
- Nettle rash
- Pityriasis Alba
- Pityriasis nigra
- Prickly heat
- Pruritus
- Psoriasis
- Scabies
- Seborrhea
- Skin lacerations
- Sun burn
- Urticaria
- Warts

SYMPTOMATIC DISORDERS OF MUSCULOSKELETAL SYSTEM

- Ankylosing spondylitis
- Carpel tunnel syndromes
- Cervical neuralgia
- Gout
- Lumbago
- Myalgias
- Myopathies
- Myasthenia gravis
- Myotonic dystrophy
- Osteoarthritis
- Osteomalasia
- Polymyositis
- Progressive muscular dystrophy
- Rheumatoid Arthritis
- Sciatica
- Syphilitic Arthritis
- Systemic Lupus Erythmatosis
- Systemic sclerosis

ALLERGIES: All Types

SYMPTOMATIC BLOOD DISORDERS:

- Anaemias of different kind
- Bleeding Disorders
- Disorders of homeostasis
- Polycythemia
- Haemorrhage
- Haemorrhagic disorders
- Leukemia
- Thalasemia

SYMPTOMATIC DISORDERS OF URINARY SYSTEM:

- Acute and Chronic Renal failure
- Cystitis
- Enuresis (nocturnal)
- Haematuria
- Nephritis
- Nephrolithiasis
- Nephrotic Syndrome
- Polycystic kidney
- Renal colic
- Renal insufficiency
- Renal function disturbance
- Stranguary
- Urethritis
- Urinary incontinence
- Urinary Retention
- Vesical calculi

COURSE CODE: 509

COURSE NAME: SURGERY-I

CREDIT HOURS: 3

SPECIFIC OBJECTIVES OF COURSE:

To understand and diagnose surgical diseases

COURSE OUTLINES:

INTRODUCTION OF SURGERY: Basic surgical principles

ESOPHAGUS: Diseases causing esophageal obstruction, congenital atresia of esophagus, Hiatus hernia and types of hiatus hernia.

DUODENUM AND STOMACH: Hypertrophy pyloric Stenosis of infants: Symptoms and treatment, Peptic Ulcer: Sign and symptoms and treatment form surgical point of view and management of perforated peptic ulcer, Haematemesis and Melena: Causes and management

LIVER: Trauma, Obstructive jaundice, amoebic liver abscess: Pathology, course, sign, symptoms, and treatment, Hydated disease of the liver. Source of infection, pathology, sign, symptoms, treatment and complication, Tumor of liver: Benign and malignant.

SPLEEN: Rupture of spleen and its treatment, Causes of enlargement of spleen and indications for splenectomy and postoperative complications.

GALL BLADDER AND BILE DUCTS: Gall stone, acute obstructive Cholecystitis, acute non obstructive Cholecystitis, chronic Cholecystitis, Stone in the bile ducts and management of Biliary obstruction due to stone.

PANCREAS: Acute, relapsing and Chronic Pancreatitis, Pancreatic masses including Neoplasia (Benign and Malignant), Carcinoma of Pancreas.

PERITONEUM: Acute and chronic peritonitis, tuberculous peritonitis.

SMALL AND LARGE INTESTINE: Causes, sign, symptoms, investigations and treatment of Primary mega colon, Ulcerative colitis, malignant cancer of colon.

INTESTINAL OBSTRUCTION: Acute intestinal obstruction: Dynamic and A dynamic, causes, sign. Symptoms, investigation and treatment, Paralytic ileus: Types, causes sign, symptoms and management.

VERMIFORM APPENDIX: Acute appendicitis and Appendicular mass.

RECTUM: Congenital Abnormalities: Imperforate anus, Proctitis, Cancer of rectum: Causes, classification, sign, symptoms investigations and treatment.

ANUS AND ANAL CANAL: Pilonidal Sinus, Anal fissure, Hemorrhoids, Fistula, Anorectic Abscess.

COURSE CODE: **511**

COURSE NAME: **PREVENTIVE AND COMMUNITY MEDICINE-I**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the professionals with subject of preventive and community medicine

COURSE OUTLINES:

1. Concept of Health & Disease

- Concept of health,
- Definition of health (Dimensions, physical, mental, social and spiritual)
- Spectrum of health,
- Determinants of health
- Responsibility for health
- Indicators of health
- Concept of disease
- Concept of causation
- Ecological triad, (agent, host & environmental factors)
- Spectrum of disease
- Iceberg phenomenon
- Natural history of disease

- Levels of prevention
- Disease elimination and eradication
- Disease surveillance

2. Introduction to Public Health and Health Systems in Pakistan

- Background and Concepts:
- Definitions and concepts in Public Health.
- Development of Public Health in Pakistan
- Economics and Health
- Health policy and planning in Pakistan.
- Health for all; background, concepts and progress.
- Primary Health Care: Concepts and progress.
- The National Disease Control programs; policies, strategies and operations.
- Health System in Pakistan
- The role of Federal and Provincial Governments in Health Care
- The District Health System, in the context of devolution.
- The Physician as a manager:
- Functions of manager, management of material, human and financial resources.
- Leadership and motivation.
- Partners in Health: The public and private sector.
- Non- governmental Organizations and International Agencies. Resources for health.
- Community Mobilization.
- Role of Homeopathy in Public Health.

3. Epidemiology and disease control

- General Epidemiology and Research methodology.
- Background and concepts, uses. Basic measurements in epidemiology (morbidity, Mortality, disability and fatality).
- Epidemiological methods (descriptive, analytic and experimental).
- Epidemiological transition.
- Association and causation.
- Investigation of an outbreak or an epidemic.
- Screening for disease.
- Community diagnosis.
- Research and survey methodology.
- Introduction to Qualitative research methodology.
- Prevention and control of Infectious diseases:
- Infection, contamination, pollution, infestation
- Infectious disease, communicable disease, contagious disease

- Host, Immune and susceptible persons
- Sporadic, Endemic, Epidemic, Pandemic
- Epizootic, Exotic, Zoonosis
- Contact, fomites, Carriers, Insect Vectors, Reservoir of infection
- Incubation period, Infective period, Generation time
- Cross infection, Nosocomial infection, Opportunistic infections
- Iatrogenic (Physician induced) disorders
- Surveillance control, Eradication, Elimination
- Dynamics of infections, Disease Transmission.
- Reservoir and source of infection,
- Escape of organism,
- Modes of transmission,
- Entry into the body,
- Susceptible host,
- Immunity (different types of immunity and immunization)
- Control of infection:
- Controlling the reservoir-notification, early diagnosis treatment, isolation, quarantine, disinfections.
- Interruption of transmission.
- The susceptible host active & passive immunization,
- Combined. Chemoprophylaxis,
- Non-specific measures,
- Homeopathic immunization
- Health advice to travelers.
- National case management guidelines.
- Epidemiology, control and prevention of infectious diseases of Public Health importance.
 1. Diseases transmitted through inhalation.
 2. Diseases transmitted through Faeco -oral route.
 3. Arthropod borne diseases.
 4. Diseases of animals conveyed to man.
 5. Diseases due to direct contact.
- Epidemiology, control and prevention of non- infectious diseases of Public Health importance
 1. Hypertension.
 2. Coronary heart disease.
 3. Cancers.
 4. Injuries.
 5. Diabetes mellitus.
 6. Obesity.
 7. Acute Rheumatic fever and heart disease.

5. Demography and Population dynamics

A. Concept, demographic principles and demographic processes

- B. Census, definition, methodology, types
- C. Determinants of fertility, mortality
- D. Population Pyramid, and its interpretation
- E. Demographic Transition, Demographic Trap and its public health importance
- F. Demographic and social implication of high population growth
- G. Social Mobilization
- H. Urbanization

6. Food and Nutrition

- A. Concepts (Nutrition, Nutrient, Food, Diet).
 - Food groups and their functions
 - Role of fiber in diet
 - Balanced Diet
- B. Malnutrition at all stages of life; its types, causes and prevention.
Common nutritional problems of public health importance and their prevention and control
- C. Dietary requirements of normal human being at different stages of life
- D. Food hygiene, Pasteurization, fortification, additives & adulteration and preservation
- E. Food Poisoning
- F. Assessment of nutritional status of a Community

7. Reproductive and Child Health

- A. Safe mother- hood, and its components. (Ante- natal, Post-natal, Family Planning & Emergency Obstetric Care)
- B. Maternal mortality, causes and prevention
- C. Infant care: Growth and development. Breast feeding, common causes of morbidity and mortality, the ir prevention and control
- D. Child Care: Health promotion strategies. Common ailments, home accidents, child mortality prevention. Strategic approaches of Integrated Management of Childhood Illness (IMCI)
- E. Adolescent health
- F. Reproductive tract infectio ns: guidelines for management of STD's

8. Health of school age children

- A. Role of teachers and role of doctor in maintenance of health
- B. Procedures for determining health status of school age children

C. Common health problems of school children

SEMESTER-X

COURSE CODE: **502**

COURSE NAME: **CLINICAL METHODS AND DIAGNOSTICS-II**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

Aims and Objectives of this module will build on experience and understanding developed in the therapeutic relationship. It will provide a thorough understanding of the functioning examination and assessment of the body systems such as cardiovascular respiratory gastrointestinal and neurological students take training in clinical knowledge examination skills and to provide an integrated approach in understanding the causes and the essential features of the symptoms and signs most commonly seen in clinical practice. This will draw on the skills attained in the human science, clinical science and previous diagnostic skill modules.

The students will achieve an understanding and detailed knowledge of the differential diagnosis of the symptoms and signs related to the following; The cardiovascular system, The respiratory system, The gastrointestinal system, The urinary system, The nervous and musculoskeletal system, Other problems, including weight disorders, temperature changes, psychiatric problems, ear, nose, and throat problems emergency conditions and conditions requiring immediate referral for diagnostic and therapeutic reasons, Additionally in cases where the diagnostic investigations available to herbal practitioners are insufficient to exclude a serious pathology, students will be aware of their urgent responsibility to refer for thorough medical investigations. Examples of such cases include Dysphagia, bleeding per rectum, severe cardiac arrhythmias

COURSE OUTLINES:

NERVOUS AND MUSCULOSKELETAL PROBLEMS: Review of the examination of the nervous and musculoskeletal system, Differential diagnosis of convulsions, fatigue, headache, facial pain, coma, pins and needles, tremors walking difficulty vertigo, dizziness and blackouts, Assessment of: orientation motor activity/strength, pupil reaction, cranial nerves, ophthalmoscope, peripheral nervous system, central nervous system, tone, power, co-ordination reflexes sensations.

MISCELLANEOUS PROBLEMS: Weight change: anorexia, bulimia, other causes of weight loss and obesity, Pyrexia and hypothermia, Ear, nose and throat problems; hoarseness, sore throat, deafness.

PSYCHIATRIC PROBLEMS: Anxiety, Depression, Suicide

EMERGENCY MEDICINE and Conditions Requiring Immediate Referral: Heart, heart attack, acute left heart failure, Diabetic emergencies, hyper and hypoglycemic coma, status epileptics, Status asthmatics, Meningitis, Fracture of neck of femur, Drug overdoses and poisoning, Other states where immediate referral is required for diagnostic clarification e.g. bleeding per rectum, severe cardiac arrhythmias.

DERMATOLOGY

- Anatomy and physiology of skin, related to Clinical Dermatology
- Infestation
- Scabies
- Pediculosis
- Bacterial and Mycobacterium infections
- Fungal and Viral diseases
- Acne Vulgaris
- Psoriasis and Lichen Planus
- Bullous Disorders
- Pigmentary Disorders
- Disorders of Nails
- Disorders of Hairs
- Sexually Transmitted Diseases
- Leprosy
- Tinea Capitis
- Tinea Inguinal
- Acute and Chronic Eczema
- S.L.E
- Moluscum Contageosum
- Seborrhea
- Basal Cell Carcinoma, and Melanoma
- Leucoderma
- Pityriasis versicolor
- Alopecia
- Hirsutism

CLINICAL

Clinical medicine consisting of detailed history taking with systemic examination involving nearly all systems of human body regarding positive findings, differential diagnosis, laboratory and allied diagnostic investigations, final diagnosis, management, specialized referral highly specialized management, prognosis, complications, preventions and follow up.

PROCEDURES:

- Scraping of fungus
- Use of Magnifying Glass.
- Observe skin Biopsy
- Use of Woods Lamp.

STUDENTS SHOULD RECOGNIZE

- Leprosy
- Syphilitic Lesions.(Chancre, Secondary syphilis, Gumma)

- Tinea (Corporis, Capitis, Inguinal,)
- Candida (Oral Skin)
- Scabies
- Lice
- Mosquito bite
- Acute and Chronic Eczema
- Lesions of Small pox, Chicken pox
- Herpes simplex, Herpes Zoster
- S.L.E
- Psoriasis.
- Impetigo Contageosum
- Moluscum Contageosum
- Seborrhea
- Exfoliated Dermatitis
- Skin Neoplasm like Squamous cell Carcinoma, Basal Cell Carcinoma, and Melanoma
- Leucoderma
- Pityriasis versicolor
- Alopecia
- Hirsutism
- Furunculosis, cellulites
- Drug Emploisus

COURSE CODE: **504**

COURSE NAME: **CASE TAKING & REPERTORIZATION-II**

CREDIT HOURS: **3**

SPECIFIC OBJECTIVES OF COURSE:

To make the professionals able to repertorize the case before prescription

COURSE OUTLINES:

REPERTORIZATION

- Definition
- Constitution of Repertory
- History of Repertories
- Types of Repertories
- Synthesis
- Kent
- Boenninghausen
- Boger
- Willium Boericke
- Gentry's and Punch card Repertories
- Knerr
- Computer Software
- Cara Professional
- RADAR

PRACTICAL

- Demonstration of five cases worked on Boenninghausen Repertory
- Advanced study with cases demonstration based on Kent Repertory
- Demonstration of 10 cases worked on Synthesis Repertory
- Card Repertory with demonstration of 5 cases and advantages of Card Repertories. Theoretical lectures with demonstration.
- Computer Software

- Cara Professional
- RADAR
- 5 cases to be cross checked
- Practical demonstration on computer based Kent's Repertory software.

COURSE CODE: **506**

COURSE NAME: **MATERIA MEDICA-IV (b)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines listed in course outlines of this course

COURSE OUTLINES:

Study of Homoeopathic remedies, emphasizing the following aspects:

- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians

LIST OF REMEDIES (MISCELLANEOUS)

SARCODES

- | | |
|-------------------------|-------------------|
| 1. Thyroidinum | 8. Orchitinum |
| 2. Adrenaline | 9. Oophorium |
| 3. Pituitarum posterium | 10. Pancreatinum |
| 4. Cortisone | 11. Cholesterinum |
| 5. Adrenocorticotrophin | 12. Fel tauri |
| 6. Insulin | 13. Vulpisfel |
| 7. Pepsin | 14. Colostrum |
| | 15. Mygale |
| | 16. Mel Cum Sale |

LACS (MILK & MILK PRODUCTS)

- | | |
|----------------------|--------------------------------|
| 17. Lac caninum | 21. Lac vaccinum |
| 18. Lac defloratum | 22. Lac vaccinum
coagulatum |
| 19. Lac felinum: | |
| 20. Lac vaccini floc | |

IMPONDERABILIA

- | | |
|------------------------------|-------------------|
| 23. Luna | 28. X-ray |
| 24. Sol | 29. Electricitasl |
| 25. Magnetis poli ambo | 30. Galvanismus |
| 26. Magnetis polus arcticus | 31. Heclæ lava |
| 27. Magnetis polus australis | |

TAUTOPATHIC OR SYNTHETIC SOURCE

- | | |
|---------------------|-----------------------------|
| 32. Aspirin | 36. Histamine hydrochloride |
| 33. Chloramphenicol | 37. Mannitol |
| 34. Chlorpromazinum | 38. Penicillin |
| 35. Corticotrophin | |

ISODES

39. Bioimmunotherapy

PRACTICAL/VIVA-VOCE

Viva-Voce and practical emphasizing chiefly upon the comparative study of the medicines included in this semester.

COURSE CODE: **508**

COURSE NAME: **HOMOEOPATHIC THERAPEUTICS-II (b)**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with various diseases and their Homoeopathic treatment

COURSE OUTLINES:

SYMPTOMATIC CARDIOVASCULAR DISORDERS

- | | |
|------------------------|-------------------------|
| • Aneurysm | • Arterial fibrillation |
| • Angina pectoris | • Aterio sclerosis |
| • Aortic regurgitation | • Atheroma |
| • Aortic Stenosis | • Atherosclerosis |
| • Arrhythmias | • Bradycardia |

- Cardiac dilatation
- Cardiac enlargement
- Cardiac thrombosis
- Cardiomyopathy
- Congestive heart failure
- Endocarditis
- Fainting
- Hypertension
- Hypotension
- Ischemic heart disease
- Left and right ventricular failure
- Mitral regurgitation
- Mitral Stenosis
- Myocardial infarction
- Myocarditis
- Palpitation
- Pericardial effusion
- Pericarditis
- Rheumatic heart disease
- Tachycardia
- Valvular heart diseases

SYMPTOMATIC NEOPLASTIC DISORDERS

- Homeopathic approach to cure of all types of benign and malignant neoplasias or carcinomas with special emphasis on miasmatic and constitutional therapeutics.

SYMPTOMATIC GYNECOLOGICAL AND OBSTETRICAL DISORDERS:

- Abortion
- Complications of labour
- Complications related to pregnancy
- Dysfunctional uterine bleeding
- Dysmenorrhea
- Eclampsia/ Pre-eclampsia
- Endometritis
- Fetal malpositions
- Genital tract infections
- Infertility
- Menstrual abnormalities
- Ovarian cysts
- Premature labour
- Puerperal complications
- Uterine hypertrophy and fibroids

SYMPTOMATIC URINOGENITAL DISORDERS OF MALE:

- Benign and Malignant Hyperplasia of Prostate
- Decreased libido
- Epididymitis
- Hypersexuality
- Impotency
- Infertility
- Nocturnal discharge
- Premature ejaculation
- Prostatitis
- Spermatorrhia

PRACTICAL/VIVA

Every student will register 20 different cases in a note book with record of case taking, diagnosis, repertorization and prescription from conditions mentioned in syllabi of 1st and 2nd semesters of this year.

COURSE CODE: **510**

COURSE NAME: **SURGERY-II**

CREDIT HOURS: **2+1**

SPECIFIC OBJECTIVES OF COURSE:

To understand and diagnose surgical diseases

To make professionals able to practice minor surgical procedure

COURSE OUTLINES:

HERNIA COMPLETE: Inguinal hernia, femoral hernia, Umbilical hernia and Para umbilical hernia, Incisional hernia.

UROGENITAL SYSTEM: Urinary symptoms and investigations, Anuria, Prerenal, renal and post renal anuria. Hydronephrosis pyonephrosis renal calculus and ureteric calculus, Perinephric abscess, Neoplasms of kidney

URINARY BLADDER: Retention of urine Etiology sign and symptoms and treatment, Incontinence of urine. Types, causes, and treatment, Vesicle calculus definition, Causes sign symptoms and treatment, Cancer of urinary bladder. Benign prostate hypertrophy, carcinoma of prostate, acute and chronic Prostatitis

URETHRA AND PENIS: Urethritis a urethral stricture.

TESTIS AND SACROTUM: Imperfect descent of testis, Ectopic testis, Torsion of testis, Varicocele causes signs and symptoms investigation and treatment, Hydrocele types aetiology diagnosis and treatment, Epididymitis Orchitis.

BREAST: Retraction of nipples and abnormal discharge from nipples, Acute and sub-acute inflammation of the breast, indication for operative management, Tumor of the breast and its surgical management.

LUNGS: Cold abscess, Empyema: acute, subacute and chronic, Pneumothorax, Hemothorax, pleural effusion, Foreign body in trachea and bronchus, Tumor of bronchi and lung, Lung abscess, Post operative pulmonary complication, Tracheotomy: indication and method of tracheotomy.

THYROID GLAND: Hypothyroidism, Goiter: its classification, simple goiter and toxic goiter, Neoplasm of the thyroid gland.

CARDIOVASCULAR: Deep vein thrombosis: Prevention, detection and treatment, Varicose vein: Examination, Sign, Symptoms, treatment and complication. Congenital disease of heart

HEAD: Head injury and its management.

BURN: Depth and degree of burns, Estimate of extent of burns, Laboratory examination of a burn patient, sign and symptoms of fluid and electrolytes deficiency in burn patient, oral replacement therapy of a burn patient.

ANESTHESIA: Local, regional and general anesthesia.

GENERAL PRINCIPLES OF ORTHOPEDICS: Definition, fracture, dislocation and sub-luxation displacement, Delayed union of fracture, Factor influencing time for fracture healing, Causes of delayed union of fracture, Stable and unstable fracture, Complication of fracture, Immediate, early and late complication, Special types of fracture,

PRACTICAL:

INTRODUCTION

- Introduction of surgery, case taking and examination of patients
- Complete information about surgical instruments, sterilization
- Pre-operative and post operative management of patients
- Anesthetic drugs their uses advantages and disadvantages
- Preoperative preparation of surgeon
- Complete information about towels and linens etc.
- Suture material methods of stitching incision and their uses

SYSTEMIC EXAMINATION

- Examination of swelling or a tumor
- Examination of an ulcer
- Examination of sinus or fistula
- Examination of thyroid glands
- Examination of the breast acute abdomen abdominal lump rectum anal canal and inguino-scrotal swelling

PROCEDURES

Clinical Surgery: Trauma and emergency, Wound healing factors effecting wound healing, Types of wounds and their closure, Management of severely injured, Examination and management of external bleeding, Control of pain,

EMERGENCY ROOM WORK: Identification of patients, History of patients, Physical examination, Laboratory examination.

MINOR SURGICAL PROCEDURES: Abscess drainage, Toe nail excision, Venous cut down, Circumcision, Stitching of cut down

COURSE CODE: 512
COURSE NAME: PREVENTIVE AND COMMUNITY MEDICINE-II
CREDIT HOURS: 2+1

COURSE OUTLINES:

1. Environmental Health Sciences

A. Air: Composition of air. Causes of Air pollution. Purification of Air.

Diseases caused by impurities in air and their prevention

B. Water: Sources of Water. Daily water requirement. Water pollution, its causes and prevention. Purification of Water. Water quality Standards.

Diseases due to polluted water

C. Waste disposal: Contents, hazards and safety measures for solid and liquid; Domestic, Industrial and Hospital waste

D. Climate: Climate and weather. Global environmental concerns (Green house effect, depletion of ozone layer, Acid rains). Effect of extremes of temperature, humidity, atmospheric pressure on human health and their prevention

E. Radiation: Sources, types, causes, hazards and prevention

F. Healthful housing. Urban and rural slums. Refugee camps and hostels

G. Noise: Definition, causes, acceptance level, hazards and control

2. Occupational Health

A. Concepts, of occupational health, occupational medicine and occupational hygiene. Homeopathy in occupational medicine. Ergonomics and its importance.

B. Occupational hazards. Principles of control

C. General principles of occupational disease prevention

D. Organization of occupational health services

E. Health Insurance and Social Security Schemes

3. Arthropods and their public health importance

A. Common arthropod borne diseases

B. Control of arthropods of medical importance

C. Insecticides and their public health importance

D. Homeopathy and arthropod control

4. Prevention and control of parasitic diseases of public health importance

5. Snake Bites:

Personal protection and management

6. Mental Health

- A. Concept. Common mental health problems, their causes, prevention and control.
- B. Juvenile delinquency.

7. Behavioral Sciences and lifestyle

- A. Concept, attitudes, health and illness behavior
- B. Drug abuse, addiction and smoking
- C. Child abuse and child labour
- D. Role of physical exercise in health and disease

8. Information, Education and Communication (IEC)

- A. Concept. Aims and objectives
- B. Approaches used in public health
- C. Contents, principles and stages of health education
- D. Communication methods, barriers and Skills in health education
- E. Planning, organizing and evaluating a health education program
- F. Social Marketing

9. Disaster

- A. Definition, Classification, (Natural disasters like earthquakes, floods)
- B. Epidemic of communicable diseases
- C. Man Made Disasters
- D. Accidents
- E. Thermo- nuclear warfare; causes and prevention
- F. Magnitude and effects of disaster and Public Health consequences
- G. Disaster: preparedness and management.

10. Medical Ethics:

- A. Background Concepts and components
- B. National recommended guidelines
- C. Code of Medical Ethics

PRACTICAL AND COMMUNITY BASED TRAINING

Student should have practical experience in questionnaire development, data collection, compilation, presentation, analysis and report writing.

FIELD VISITS

- Visit to BHU and RHC
- Visit to an NGO
- Visit to a primary school to assess the nutritional status of school children
- Visit to a hospital to see the hospital waste disposal.
- Visit to an industry
- Visit to a physical/mental/social rehabilitation centre.
- Visit to MCH/Reproductive Health Centre to observe the organization, and function of the centre and to demonstrate counseling skills in one of the following.
 - a) Nutritional counseling for children, pregnant and lactating women.
 - b) Antenatal Care
 - c) Family planning services
 - d) Immunization, others

SKILLS DEVELOPMENT LAB

- Water purification at domestic level.
- Contraceptives
- Vaccination including the cold chain
- Oral Rehydration solution

RECOMMENDED BOOKS

NOTE: Latest editions of the books recommended should be consulted.

ANATOMY

- 1) B D Chaurasia. Human Anatomy, Regional and Applied, 4th edition, CBS Publishers and Distributors, 2006, India
- 2) Bharihoke, Veema. Textbook of Histology: Practical Manual and Atlas. A.I.T.B.S. Publishers, 2005. New Delhi
- 3) Gray's Anatomy: Descriptive and Applied. Longmans (1996). London
- 4) Hansen, John T. Essential Anatomy Dissector: Following Grant's Method. 2nd Edition Lippincott W. W, 2002. London
- 5) Inderbir Singh. Textbook of Anatomy with Colour Atlas. Jay Pee Brothers, 1999. New Delhi
- 6) Keith L. More and T.V.N. Persaud, Clinically Oriented Human Anatomy. W.B. Saunders (1996). Philadelphia
- 7) Marieb, Elaine N Anatomy and Physiology. 2nd Edition Pearson Education, 2005. Boston
- 8) McMinn, R. M. H. Concise Handbook of Human Anatomy. Book Power, 1998. London

- 9) Mortini, Frederic H. Human Anatomy. 5th Edition Pearson Pub, 2005. New York
- 10) Morton, David A. Dissection Guide for Human Anatomy. Churchill Livingstone, 2004. Utah
- 11) Romanes, G. J. Cunningham's Manual of Practical Anatomy. 15th Edition (3 vol set) Oxford University Press, 1998. Oxford
- 12) Sinnatamby, Chummy S. Last's anatomy: Regional and Applied. 10th Edition Churchill Livingstone, 1999. London
- 13) Snell, Richard. Clinical Anatomy. 7th Edition Lippincott W. W, 2004. London
- 14) Standring, Susan. Gray's Anatomy: Anatomical Basis of Clinical Practice. 39th Edition Elsevier, 2005. London

BIOCHEMISTRY

1. Berg, Jeremy M. Biochemistry. 6th Edition W. H. Freeman and Company, 2006. New York
2. Bhagavan, N. V. Medical biochemistry. 4th Edition Academic Press, 2002. California
3. Campbell, Peter N. Biochemistry Illustrated: Biochemistry and Molecular Biology in the Post-Genomic Era. 5th Edition Elsevier, 2005. London
4. Champe, Pamela C. Biochemistry: Lippincott's Illustrated Reviews. 3rd Edition Lippincott W. W, 2005. London
5. Kar, Ashutosh. Advanced Practical Medicinal Chemistry. New Age International, 2006. New Delhi
6. Lubert Stryer, Biochemistry, W. H. Freeman and Company (2002).
7. Marshall, William J. Clinical chemistry. 5th Edition Mosby, 2004. New York
8. M. N. Chaterjea, Medical Biochemistry, Jay Pee Brothers Medical Publishers, New Delhi (2003).
9. Mushtaq Ahmad, Essentials of Medical Physiology, 8th Edition, Merit Publishers, 2009, Multan
10. Roberk Murray, Daryl K, Granner, Peter A. Mayes, Victor W. Rodwell Harper Biochemistry, Appleton and Lange, Lange Medical Publications, New York (2000)
11. Singh, Bimla. Biochemistry and Genomic Revolution. Vista International, 2006. New Delhi
12. Srivastava, Manish L. Biochemistry. Shree Publishers, 2004. New Delhi
13. Truswell, A Stewart. ABC of Nutrition. 4th Edition Book Power, 2003. Sydney
14. Voet, Donald. Fundamentals of Biochemistry: Life at the Molecular Level. 2nd Edition John Wiley and Sons, 2006. New York

BIOINFORMATICS

1. Attwood Teresa K. Introduction to Bioinformatics. Pearson Education, 1999. New Delhi
2. Bansal, Mohan. Medical Informatics: A Primer. Tata McGraw-Hill Pub, 2003. New Delhi
3. Baxevanis, Andreas D. Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins. 3rd Edition John Wiley and Sons, 2005. New Jersey
4. Brown, Stuart M. Bioinformatics: A Biologist's Guide to Biocomputing and the Internet. Eaton Publishing, 2000. New York
5. Campbell, Peter N. Biochemistry Illustrated: Biochemistry and Molecular Biology in the Post-Genomic Era. 5th Edition Elsevier, 2005. London
6. D. Andreas, Baxevanis and B.F. Francis Ouellette Bioinformatics: A Practical Guide to the Analysis of Gene and Proteins, Second edition, (2000).
7. Feng, David Dagan. Biomedical Information Technology. Elsevier, 2008. Boston Mahesh, S. Biotechnology. New Age International, 2006. New Delhi
8. Krishna, V. Sree. Biotechnology: Including Cell Biology Genetics Microbiology and Immunology. New Age International, 2006. New Delhi
9. Kuppaswamy, C. Encyclopedia of Bioinformatics. 5vol set. Dominant Publishers, 2006. New Delhi
10. Malcolm Campbell, Laurie J. Heyer, Discovering Genomics, Proteomics and Bioinformatics.
11. Rang, H. P. Drug Discovery and Development: Technology in transition. Churchill Livingstone, 2006. London
12. Rastogi, S. C. Bioinformatics: Concepts Skills and Applications. CBS Publishers, 2004. New Delhi
13. Singh, Bimla. Biochemistry and Genomic Revolution. Vista International, 2006. New Delhi
14. Teesa Attwood, David Parry-Smith, Introduction to Bioinformatics (2001).
15. Voet, Donald. Fundamentals of Biochemistry: Life at the Molecular Level. 2nd Edition John Wiley and Sons, 2006. New York

BIOSTATISTICS AND MATHEMATICS

1. Ahmed B and Khan M, Mathematics for Pharmacists, Arsalan Paper Mart, Multan, 1993.
2. Burton, Richard F. Biomedical Calculations: Principles and Practice. John Wiley and Sons, 2008. London

3. Cacha, Charles A. Research Design and Statistics for the Safety and Health Professional. Van Nostrand Reinhold, 1997. New York
4. Chaudhry S A and Kamal S, Introduction to Statistical Theory, Part-I and Part-II, Ilmi Kitab Khana, Urdu Bazar, Lahore. 1996.
5. C H Edwards. Jr. and David E Penney, Calculus and Analytic Geometry, Prentice-Hall, Inc, A Division of Simon & Schuster Englewood Cliffs, New Jersey 07632, USA. 1995
6. Daniel W. W. Bio-Statistics, Foundation for Analysis in Health Science. 3rd Ed., 1983.
7. Nilton, J S and Tsokos, J D, Statistical Methods in Biological and Health Sciences, McGraw-Hill. 1983.
8. Samuels M, Statistics for the Life Sciences, Dellen Pub Co SF, USA. 1991.
9. Selvin, Steve. Biostatistics: How it Works. Pearson Education, 2005. New Delhi
10. Tanure, Jadith M. Statistics: A Guide to the Study of the Biological and Health. Holden-Day, 1977. London
11. Verma, B. L. Biostatistics: Perspectives in Health Care Research and Practice. CBS Publishers, 1994. New Delhi B. Jain Publishers, 1996. New Delhi
12. Walpole R E, Introduction to Statistics, Macmillam Pub Co, NY. 1982.
13. Zar J H, Bio-Statistical Analysis, Francis Hall, NJ, U.S.A.

CASE TAKING & REPERTORIZATION

1. Barthel, Horst. Synthetic Repertory. 3Vol set B. Jain Publishers, 2001. New Delhi
2. Bickley, Lynns. Bate's Guide to Physical Examination and History. 8th Edition Lippincott W. W, 2003. New York
3. Boger, C. M. Boenninghausen Characteristics Materia Medica and Repertory. B. Jain Publishers, 2006. New Delhi
4. Castro, J Benedict. What a Homoeopath Should Know Before Prescribing? B. Jain Publishers, 1998. New Delhi
5. Clarke, John H. Clinical Repertory to the Dictionary of Materia Medica. B. Jain Publishers, 1995. New Delhi
6. D'Castro, J. Benedict D. Commentary on Case Taking. B. Jain Publishers, 2005. New Delhi.
7. Hering, C. Analytical Repertory of the Symptoms of the Mind. B. Jain Publishers, 2004. New Delhi.
8. Jugal Kishore. Evolution of Homoeopathic Repertories and Repertorization. B. Jain Publishers, 2004. New Delhi
9. Kent, J. T. Kent's Comparative Repertory of the Homeopathic Materia Medica. B. Jain Publishers, 2003. New Delhi

10. Kent, J. T. Repertory of the Homoeopathic Materia Medica. 6th Edition. B. Jain Publishers, 2006. New Delhi.
11. Robin, Murphy. Homoeopathic Medical Repertory. 2nd Edition B. Jain Publishers, 2004. New Delhi
12. Schepper, Luc De. Achieving and Maintaining the Simillimum. B. Jain Publishers, 2006. New Delhi.
13. Sivaraman, P. Concise Repertory of Aggravations and Ameliorations. B. Jain Publishers, 1996. New Delhi
14. Tiwari, Sashi Kant. Essentials of Repertorization. 3rd Edition B. Jain Publishers, 2004. New Delhi

CLINICAL METHODS AND DIAGNOSTICS

1. Ali. Students Clinical Methods in Medicine, Ilmi Kitab Khana, 2002, Lahore
2. C.R.W. Edward, and I.A.D. Boucher Davidson's Practice of Medicine, BPC Publisher, London (1990).
3. Doherty, Gerard M. Current Surgical Diagnosis and Treatment. 12th Edition Lange Medical Books, 2003. New York
4. Henry, John Bernard. Clinical Diagnosis and Management. 17th Edition W. B. Saunders, 2003. New Delhi
5. Haroon, M. Clinical Examination: Interpretations, Differential Diagnosis Bed Side Medicines and Atlas of Medicine. Allied Books, 2006 Lahore
6. Lumley, John S. P. Clinical Examination of the Patient. Butterworth Heinemann, 1995. Oxford
7. Shabir Ahmad Nasir. Essential of Differential Diagnosis. 5th Edition Saira Publishing, 2003. Multan
8. Swash, Michael. Hutchison's Clinical Methods. 21st Edition. Saunders, 2002. London
9. Raghunath, Mahajan. Handbook of Laboratory Investigation B. Jain Publishers, 1998. New Delhi
10. Talley, Nicholas J. Clinical Examination: A Systematic Guide to Physical Diagnosis. 5th Edition Churchill Livingstone, 2006. New Delhi
11. Tierney, Lawrence M. Current Medical Diagnosis and Treatment. 45th Edition Lange Medical Books, 2006. New York
12. Toghil, Peter J. Examining Patients: Introduction to Clinical Medicine. 2nd Edition Edward Arnold, 1995. London

ENGLISH

1. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 1. Third edition. Oxford University Press. 1997. ISBN 0194313492

2. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press. 1997. ISBN 0194313506
3. 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.
4. Writing. Upper-Intermediate by Rob Nolasco. Oxford Supplementary Skills. Fourth Impression 1992. ISBN 0 19 435406 5 (particularly good for writing memos, introduction to presentations, descriptive and argumentative writing).
5. Reading. Advanced. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1991. ISBN 0194534030.
6. Reading. Upper Intermediate. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 453402 2

FORENSIC MEDICINE AND TOXICOLOGY

1. Ahmad, Shahbaz. Forensic Medicine and Toxicology. 3rd Edition Allied Book Company, 2005. Faisal Abad
2. Dogra, T. D. Lyon's Medical Jurisprudence and Toxicology. 11th Edition Delhi Law House, 2008. New Delhi
3. Duggus, John H. Fundamental Toxicology. RSC Publishing, 2006. London
4. Gall, John A. M Forensic Medicine. Churchill Livingstone, 2005. New York
5. Parikh, C. K. Parikh's Textbook of Medical Jurisprudence Forensic Medicine Toxicology. 6th Edition CBS Pub, 2004. Delhi
6. Saukko, Pekka. Knight's Forensic Pathology. 3rd Edition Arnold Publication, 2004. London
7. Sharma, R. K. Concise Textbook of Forensic Medicine and Toxicology. Elsevier Publication, 2005. New Del
8. Vij, Krishan. Textbook of Forensic Medicine and Toxicology. 3rd Edition Elsevier, 2005. New Delhi

GYNAECOLOGY AND OBSTETRICS

1. Baker, Philip N. Obstetrics by Ten Teachers. 18th Edition Book Power, 2006. London
2. Chohan, M. Arshad. Fundamentals of Obstetrics. MAR Publishers, 2005. Lahore
3. Compbell, Stuart. Gynaecology by Ten Teachers. 18th Edition Book Power, 2006. London

4. Dudek, Ronald W. Embryology. 3rd Edition Lippincott W. W, 2005. New York
5. Hacker, Neville F. Essentials of Obstetrics and Gynaecology. 4th Edition Elsevier, 2004. New Delhi
6. Jana, Balaram. Textbook of Gynaecology and Obstetrics. 2nd Edition B. Jain Publishers, 1998. New Delhi
7. Marsden, J. H. Handbook of Practical Midwifery. B. Jain Publishers, 1997. New Delhi
8. Moore, Keith L. Before, We are Born: Essentials of Embryology and Birth Defects. 6th. Edition Saunders, 2003. New York
9. Patil, J. D. Gems of Gynaecology and Obstetrics with Homoeopathic Therapeutics. B. Jain Publishers, 2004. Delhi
10. Rashid Latif Khan. Gynaecology. 3rd Edition Medical Publication, 2000. Lahore
11. Sadler, T. W. Longman's Medical Embryology. 9th Edition Lippincott W. W, 2004. New York.
12. Scott, James R. Danforth's Obstetrics and Gynecology. 9th Edition. Lippincott W. W, 2003. New York

ISLAMIC STUDIES

1. Ahmad Hasan, "Principles of Islamic Jurisprudence" Islamic Research Institute, International Islamic University, Islamabad (1993) ISBN 969-408-130-0
2. Dr. Muhammad Zia-ul-Haq, "Introduction to Al Sharia Al Islamia" Allama Iqbal Open University, Islamabad (2001)
3. Hameed ullah Muhammad, "Emergence of Islam" IRI, Islamabad
4. Hameed ullah Muhammad, "Muslim Conduct of State" IRI, Islamabad
5. Hameed ullah Muhammad, 'Introduction to Islam IRI, Islamabad
6. Hussain Hamid Hassan, "An Introduction to the Study of Islamic Law" leaf Publication Islamabad, Pakistan.
7. Imran Ahsan Khan Theories of Islamic Law Islamic Research Institute, International Islamic University, Islamabad ISBN 696-408-156-4
8. H.S. Bhatia, "Studies in Islamic Law, Religion and Society" Deep & Deep Publications New Delhi (1989)
9. Mir Waliullah, "Muslim Jrisprudence and the Quranic Law of Crimes" Islamic Book Service (1982)

HOMOEOPATHIC MATERIA MEDICA

1. Allen, Timothy F. Encyclopedia of Pure Materia Medica. 12vol set. B. Jain publishers, 2005. New Delhi
2. Burt, William H. Physiological Materia Medica. B. Jain Publishers, 2003. New Delhi.

3. Clarke, John Henry. Dictionary of Practical Materia Medica. 3 vol set. B. Jain Publishers, 2005.
4. Farrington E. A. Lesser Writings. B. Jain Publishers (P) Ltd. 1999 New Delhi , INDIA
5. George Vithoulkas, Materia Medica Viva, Homoeopathic Book Publishers, 1992, London
6. Hahnemann, Samuel. Materia Medica Pura. 2Vol set B. Jain Publishers, 2002. New Delhi
7. Hering, C. Guiding Symptoms of Our Materia Medica. (10 vol set) B. Jain Publishers, 1995. New Delhi
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9. Kent, James Tyler. Lectures on Homoeopathic Materia Medica. B. Jain Publishers, 2005. New Delhi.
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13. Patil, J. D. Gems of Homoeopathic Materia Medica. B. Jain Publishers, 2004. New Delhi
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16. Tyler M.L., Homoeopathic Drug Picture. B. Jain Publishers (P) Ltd. 2004 New Delhi, INDIA
17. Shinghal, J. N. Graphic Pictures of Selected Remedies. B. Jain publishers, 1999. New Delhi

HOMOEOPATHIC PHILOSOPHY

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2. Allen, J. Henry. Chronic Miasms: Psora and Pseudo-Psora. B. Jain Publishers, 2006. New Delhi
3. Anima Chakraborty. Homoeopathic Drug Personalities with Therapeutic Hint. B. Jain Publishers, 2004. New Delhi
4. Baldwin, C. A. Hahnemann's Organon of the Art of Healing Restated. B. Jain Publishers, 1994. New Delhi
5. Banerjee, D. D. Guide to Organon of Medicine and Homoeopathic Philosophy. B. Jain Publishers, 1995. New Delhi
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7. Boericke, William. Compend of the Principles of Homoeopathy. B. Jain Publishers, 2004. New Delhi
8. Carlston, Michael. Classical Homoeopathy. Churchill Livingstone, 2003. New York
9. Chaudhry, Hari Mohon. Indications of Miasm. B. Jain Publishers, 1999. New Delhi
10. Close, Stuart. Genius of Homoeopathy Lectures and Essays on Homoeopathic Philosophy. 2nd Edition. B. Jain Publishers, 2006. New Delhi
11. Drew, Peter D. Miasms: A Discussion and Summary with Emphasis on Carcininum and the Cancer Miasm. B. Jain Publishers, 2004. New Delhi
12. Gunavante, S. M. Amazing Power of Homoeopathy B. Jain Publishers, 2002. New Delhi
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19. Lis-Balchin, Maria. Aromatherapy Science: A Guide for Health Care Professionals. Pharmaceutical Press, 2006. London
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22. Master Farokh J. Tubercular Miasm. 2nd Edition B. Jain Publishers, 1999. New Delhi
23. Morrell, Peter. Hahnemann and Homoeopathy. B. Jain Publishers, 2003. New Delhi
24. Poonam, Jain. Magnetotherapy: All You Wanted to Know About. Sterling Publishers, 2003. New Dawn
25. Ranjit K, Roy. Cause, Diseases and Effect Phenomena: Fundamental Aspect of Homoeopathy. B. Jain Publishers, 2001. New Delhi
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31. Sydow, Helmut. Learning Classical Homoeopathy. B. Jain Publishers, 2003. New Delhi
32. Vithoukias, George. Science of Homoeopathy. B. Jain Publishers, 2004. New Delhi
33. Woodward, A. W. Constitutional Therapeutics: The Patient not the Diseases. B. Jain Publishers, 2003. New Delhi
34. Yuan, Chun-Su. Textbook of Complementary and Alternative Medicine 2nd Edition 2006. London

HOMOEOPATHIC PHARMACY

1. Ayub Ali, Syed. Fundamentals of Pharmacy. Faculty of Pharmacy, 1975. Karachi
2. Banerjee, D. D. Augmented Textbook of Homoeopathic Pharmacy. B. Jain Publishers, 2006. New Delhi
3. Banerjee, D. D. Textbook of Homoeopathic Pharmacy. B. Jain Publishers, 2005. New Delhi
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HOMOEOPATHIC THERAPEUTICS

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2. Bishambar Das. Select Your Remedy. 22nd Edition. Bishambar Free Homoeo dispensary, 2005. N. Delhi
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16. Shaikh, Altaf Hussain. Top Ten Homoeopathic for 499 Common Disorders. B. Jain Publishers, 2005. New Delhi
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CURRICULUM FOR BACHELOR OF HOMEOPATHIC MEDICAL SCIENCES

Part-I

1. The nomenclature of the degree will be Bachelor of Homeopathic Medical Sciences (BHMS).
2. The Degree course of BHMS shall comprise a course of study consisting of the Curriculum extended over duration of five years.
3. The academic studies will be followed by one year of compulsory internship in the Hospital attached to the Homoeopathic College or affiliated with College or in the recognized and experienced Clinics.
4. On the completion of internship for a specified period of time and on the recommendation of the Head of institution where internship was undertaken, the National Council for Homoeopathy shall issue the registration (RHMPM) to the successful candidates.

PART II

PREREQUISITES FOR ADMISSION

1. The minimum qualification for admission in BHMS Five Years Degree Program is Intermediate (F.Sc.) with pre-medical group of subjects with minimum 50% marks.
2. The candidates with B.Sc. degree (minimum 50% marks) will also be considered for admission provided they have passed the intermediate examination (minimum 50% marks) with pre-medical subjects.

OBJECTIVES OF THE COURSE

Pakistan is a developing country and majority of its population is devoid of sufficient health facilities. For this reason, there is need for a system of Alternative Medicine which can provide treatment services for different ailments and complications. Homoeopathy is already taught (up to Diploma Level) and practiced under the supervision of National Council for Homoeopathy and Federal Ministry of Health. Bachelor of Homoeopathic Medical Sciences (BHMS) Degree Course will produce highly skilled professionals to this alternative system of medicine for the needs and requirements in healthcare of our masses. Following are the objectives of teaching Homoeopathy at Graduation level.

- Main objective of this course is to produce graduates with knowledge of classical homeopathy with latest technologies and modern methods to approach diseases.
- To deliver the graduates adequate theoretical knowledge, practical skills and clinical understanding to make them able to diagnose various health problems and design the plan of treatment according to Homoeopathic System of Medicine.
- To make the BHMS graduates able to plan and execute research programs aimed at solving the health problems of our country.
- To make the graduates able to demonstrate their professional responsibilities in the best interest of patients, implementing preventive and curative medicine.
- To determine how certain Homoeopathic medicines may fit into current wellness and treatment strategies.
- To give the Homoeopathic professionals sufficient understanding of ethical, legal and regulatory challenges related to Homoeopathy.
- The graduate Homoeopathic professionals will be able to provide treatment facilities to the population in a very economical way as Homeopathic medicines are cost effective as compared to other systems of Medicine.
- This course also aims to educate and train the professionals so that they will be competent enough to be capable of functioning independently and effectively.

PART III

SCHEME OF STUDIES FOR ANNUAL SYSTEM

BHMS FIRST PROFESSIONAL YEAR

THEORY:	SUBJECTS	MARKS
Paper-I:	Anatomy-I	100
Paper-II:	Physiology-I	100
Paper-III:	Biochemistry	100
Paper-IV:	Philosophy of Homoeopathy-I	100
Paper-V:	English	100
Paper-VI	Islamiat/Pak Studies (60+40)	100

PRACTICAL:

Paper-VII:	Anatomy-I (Practical)	100
Paper-VIII:	Physiology-I (Practical)	100
Paper-IX:	Biochemistry (Practical)	100

TOTAL: 900

BHMS SECOND PROFESSIONAL YEAR

THEORY:	SUBJECTS	MARKS
Paper-I:	Anatomy-II	100
Paper-II:	Physiology-II	100
Paper-III:	Biostatistics and Mathematics (50+50)	100
Paper-IV:	Philosophy of Homoeopathy-II	100

Paper-V:	Materia Medica-I	100
Paper-VI:	Bioinformatics	50

PRACTICAL:

Paper-VII:	Anatomy-II (Practical)	100
Paper-XIII:	Physiology-II: (Practical)	100
Paper-IX:	Materia Medica-I (Practical/Viva)	50
Paper-X:	Bioinformatics (Practical)	50

TOTAL:		850
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BHMS THIRD PROFESSIONAL YEAR

THEORY:	SUBJECTS	MARKS
Paper-I:	Pathology	100
Paper-II:	Microbiology and Parasitology	100
Paper-III:	Pharmacognosy	100
Paper-IV:	Homoeopathic Pharmacy	100
Paper-V:	Philosophy of Homoeopathy-III	100
Paper-VI:	Materia Medica-II	100

PRACTICAL:

Paper-VII:	Pathology (Practical)	100
Paper-VIII:	Microbiology and Parasitology (Practical)	100
Paper-IX:	Pharmacognosy (Practical)	100
Paper-X:	Homoeopathic Pharmacy (Practical)	100

Paper-XI:	Materia Medica-II (Practical/Viva)	50
TOTAL:		1050

BHMS FOURTH PROFESSIONAL YEAR

THEORY:	SUBJECTS	MARKS
Paper-I:	Gynecology and Obstetrics	100
Paper-II:	Materia Medica-III	100
Paper-III:	Ophthalmology and E.N.T.	100
Paper-IV:	Psychology and Psychiatry	100
Paper-V:	Forensic Medicine and Toxicology	100
Paper-VI:	Pediatrics	100
Paper-VII:	Homoeopathic Therapeutics-I	100

PRACTICAL AND CLINICAL:

Paper-VIII:	Gynecology and Obstetrics (Practical/Clinical)	100
Paper-IX:	Materia Medica-III (Practical/Viva)	50
Paper-X:	Ophthalmology and E.N.T (Clinical)	50
Paper-XI:	Pediatrics (Clinical)	50
Paper-XII:	Homeopathic Therapeutics-I (Practical/Viva)	50
TOTAL:		1000

BHMS FINAL PROFESSIONAL YEAR

THEORY:	SUBJECTS	MARKS
Paper-I:	Clinical Methods and Diagnostics	100
Paper-II:	Case Taking & Repertorization	100
Paper-III:	Materia Medica-IV	100
Paper-IV:	Homoeopathic Therapeutics-II	100
Paper-V:	Surgery	60
Paper-VI:	Preventive and Community Medicine	100

PRACTICAL AND CLINICAL:

Paper-VII:	Clinical Methods & Diagnostics (Clinical)	50
Paper-VIII:	Case Taking & Repertorization (Practical)	50
Paper-IX:	Materia Medica-IV (Practical/Viva)	50
Paper-X:	Homoeopathic Therapeutics-II (Practical/Viva)	50
Paper-XI:	Surgery (Practical)	40
Paper-XII:	Practical and Community Based Training	100
TOTAL:		900

TOTAL MARKS OF STUDY COURSE 4700 + 50 = 4750

NOTE: The students taking the projects (compulsory) will be evaluated in the relevant practical Homoeopathic Materia Medica, Homoeopathic Therapeutics or Case Taking and Repertorization by the external examiner. The total marks of each of the project will be 50.

TEACHING METHODOLOGY:

The teachers will have to deliver lecture on each of the topic according to course outline given to the students at the start of the session. At the same time, the teacher of each subject will assign a topic to the students

every week. The students will get the information from library/internet etc. and an interactive session of the students will be conducted in the presence of teacher.

BHMS FIRST PROFESSIONAL YEAR

PAPER-I

COURSE NAME: **ANATOMY-I**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES:

- To learn detailed concepts in general Anatomy, Histology and Embryology
- To learn Anatomy of upper and lower extremities
- To learn the Anatomy of thorax and its viscera

COURSE OUTLINE:

GENERAL ANATOMY

1. Brief history of Anatomy. Different disciplines of the subject
2. Anatomical nomenclature-descriptive terms
3. Skeletal system
 - a) Bones
 - Axial skeleton
 - Appendicular skeleton
 - Functions of bone
 - Classification on the basis of shape, development, region and structure
 - General concepts of development & ossification of bones
 - Parts of young bone
 - Blood supply
 - Properties of bones and cartilages
 - Applied aspects
 - b) Joints
 - Structural classification
 - Regional classification
 - Functional classification
 - Characteristics and classification of Synovial joints
 - Movements of Synovial joints

- Anatomy of joints with reference to dislocation, sprain and inflammation

c) Muscle

- Parts of a muscle
- Classification
- Blood supply and nerve supply of muscle
- Neuromuscular junction
- Applied anatomy of muscle with reference to spasm, paralysis, atrophy and regeneration

4. Cardiovascular system

- Heart & Blood vessels
- Types of circulation
- Anastomoses

5. Lymphatic system

- Introduction
- Lymph capillaries
- Lymph Vessels
- Lymph nodes
- Main channels

6. Somatic Nervous system

- Introduction
- Different parts of Central Nervous System (CNS) with their brief functions
- Peripheral nervous system (cranial and spinal nerves)- introduction

7. Autonomic nervous system

- Introduction to parasympathetic and sympathetic nervous system

8. Skin and fasciae

- Parts & Appendages of skin
- Types of fasciae

9. Embalming & museum keeping

GENERAL HISTOLOGY

Histology will be taught concurrently with Anatomy throughout the course. Underlying principles of histological techniques and staining should be given due consideration. Most of teaching will be done on stained and mounted sections and every type of normal tissue will be covered.

1. Cell
Cell as a whole, Cell Membrane, Interior of cell, Nucleus
2. Microscopy
3. Epithelial tissues
4. Connective tissue proper
5. Cartilage
6. Bone
7. Muscular tissue
8. Nervous System
Nervous tissue, Cerebral cortex, Cerebellar cortex, Spinal cord
9. Lymphoid organs
10. Circulatory system
11. Integumentary system
12. Routine histological techniques

GENERAL EMBRYOLOGY

Embryology should be taught with the object of making students understand and grasp those fundamental principles which result in better comprehension of structural organization in the body. Stress should be laid on those developmental processes such as growth and differentiation, which have a direct bearing on clinical subjects. The genesis of congenital malformations should be one of the chief aims. All details should be kept on the essential outlines.

1. Male & female reproductive systems
2. Cell Division and Gametogenesis
3. Fertilization, cleavage, blastocyst formation and implantation
4. Development during second week
5. Development during third week
6. Embryonic period
7. Foetal period
8. Foetal membranes and Placenta
9. Introduction to genetics.
10. Teratogenesis

GROSS ANATOMY

1. Upper limb
2. Lower limb
3. Thorax

NOTE: During study of Gross Anatomy, emphasis should be given on applied aspect, radiological anatomy, surface anatomy and cross-sectional anatomy.

PAPER-VII:

COURSE NAME: **ANATOMY-I (PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

- Upper Limb Dissection: Pectoral and scapular, auxiliary and shoulder region, arm, forearm.
- Prosected parts: Joints, Palm and dorsum of hand.
- Thorax Dissection: Chest wall, mediastinum, pleura, lungs, heart.
- Lower Limb Dissection: Gluteal region, front and back of thigh popliteal fossa, front back and lateral side of leg and dorsum of foot.
- Prosected Parts: Sole of the foot and joints

PAPER-II:

COURSE NAME: **PHYSIOLOGY-I**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To make students able to:

- Understand the fundamental concepts related to structure and function of cell.
- Present a comprehensive account of the chemistry and functions of blood.
- Understand the functions and role of nerve and muscle
- Understand the fundamental concepts related to functions of organs and tissues of gastrointestinal tract, cardiovascular and respiratory system

COURSE OUTLINE:

Basic concepts, Clinical/Applied Concepts, General Physiology/Cell, Functional organization of human body, Abnormalities of cell and its organelles, Homeostasis, Control system in the body, Cell membrane and its functions, Intracellular connections, Cell organelles, Transport through cell membrane, Genetics

BLOOD

- Composition and general functions
- Plasma proteins
- Red blood cells (erythrocytes) Anemia

- Hemoglobin and blood Indices, Iron Blood indices in various disorders
- Metabolism, Fate of Hb.
- White blood cells, Leucopoiesis, functions of Leucocytes, Leucopenia
- Platelets Thrombocytopenia
- Homeostasis Clotting disorders (Hemophilia etc.)
- Blood Groups, Blood transfusion and Complication Blood grouping/cross matching and significance
- Reticuloendothelial system- Spleen Immunity

NERVE AND MUSCLE

- The neuron – structure and functions
- Properties of nerve fibers Nerve conduction studies
- Physiology of action potential including EMG
- Compound action potential
- Conduction of nerve impulse, Nerve injury
- Degeneration and regeneration
- Synapses
- Structure of Muscle
- Skeletal muscle contraction Rigor mortis and contractures
- Isometric and isotonic contraction
- Smooth muscle contraction
- Neuromuscular transmission Myasthenia gravis
- Excitation contraction coupling Myopathies/ Neuropathies
- Motor unit
- Neuromuscular blockers

GASTROINTESTINAL TRACT

- Structure and general functions
- Enteric nervous system (GUT Brain)
- Mastication, swallowing and their control
- Dysphagia, achalasia of esophagus
- Function and movement of stomach
- Examination of abdomen,
- Peptic Ulcer
- Pancreatitis
- Function and movements of small intestine
- Gastric function test
- Function and movements of large intestine
- Hormones of GIT
- Vomiting and its pathway Vomiting and effects
- Defecation and its pathway Diarrhea,
- Constipation

- Functions of liver Jaundice,
- Liver functions test

CARDIOVASCULAR SYSTEM

- Introduction to heart and circulation
- Correlation of cardiac cycle with ECG and heart sound
- Physiology of cardiac muscle
- Action potential in atrial and ventricular
- Muscle and pace maker potential
- Regulation of cardiac muscle
- Cardiac impulse –origin and propagation Significance of Apex beat/ Abnormalities
- Cardiac cycle various events
- ECG- Recording and interpretation
- Arrhythmias- mechanism of development
- Flutter fibrillation – ectopics
- Functional types of blood vessels
- Hemodynamic of blood flow
- Local Control of Blood flow
- Conduction defects
- Systemic circulation, Characteristics and control
- Regulation of peripheral resistance
- Arterial pulse
- Jugular venous pulse
- Arterial blood pressure (short / long term Regulation)
- Radial/other pulses
- Cardiac output (regulation/measurement)
- Hypertension types and effects
- Heart sound/murmurs
- Venous return and its regulation
- Clinical evaluation of heart sound and Murmurs.
- Coronary circulation Ischemic heart disease
- Splanchnic circulation
- Heart failure
- Pulmonary circulation
- Echocardiogram
- Cerebral circulation
- Coetaneous circulation-triple response
- Types of shock
- Fetal circulation and readjustments at birth
- Cardiovascular changes during exercise

RESPIRATORY SYSTEM

- Organization/functions of respiratory tract Examination of chest
- Function of lungs (respiratory and non-respiratory)
- Types of respiration
- Mechanism of breathing
- Surfactant and compliance Lungs function test (Spirometry)
- Protective reflex
- Lung volumes and capacities Obstructive /restrictive lung disease (FEV1/FVC)
- Dead space
- Diffusion of gases (gas law, composition)
- Ventilation/perfusion
- Abnormal ventilation/ perfusion
- Transport of oxygen in blood
- Transport of Co₂ in blood
- Regulation of respiration (Nervous/chemical)
- Respiratory failure
- Abnormal breathing
- Asphyxia
- Hypoxia-types and effects
- Hypoxia cyanosis
- Dyspnea
- Physiology of cyanosis
- Artificial respiration
- Physiology of high altitude, space, deep sea diving
- Oxygen therapy
- Oxygen debt Caisson's disease
- Respiratory changes during exercise

PAPER-VIII:

COURSE NAME: **PHYSIOLOGY-I (PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

STUDY OF THE MICROSCOPE

HEMATOLOGY:

Hemoglobin Percentage Estimation, Erythrocyte sedimentation rate (ESR), Packed cell volume (PCV) / Hematocrit, Bleeding time (BT), Clotting time (CT), Blood Groups, Study of Neubauer Chamber, RBCs Count, Red cell indices, Differential leucocytes Count (DLC), Osmotic fragility of RBCs, Demonstration of prothrombin time and thrombin time.

CARDIOVASCULAR SYSTEM:

Triple Response, Examination of Arterial Pulse, Measurement of Arterial Blood Pressure, Effect of Exercise and Posture on Blood Pressure, Examination of Apex Beat, Heart Sounds

RESPIRATORY SYSTEM:

Clinical examination of chest, Measurement of pulmonary volume and capacities (Spirometry), Stethography sounds; S1, S2, S3

MISCELLANEOUS:

Recording of Body Temperature and Pregnancy Test

PAPER-III:

COURSE NAME: BIOCHEMISTRY

TOTAL MARKS: 100

SPECIFIC OBJECTIVES OF COURSE:

- This course provides fundamental concepts in biochemistry, which focuses upon the major macromolecules and chemical properties of living systems.
- Primary topics include the structure, properties and functions of amino acids, proteins, carbohydrates, lipids and nucleic acids.
- It also focuses on biochemical role of enzymes, minerals, vitamins and biochemistry of gastrointestinal tract
- The fundamental concepts about the energy production.
- Mechanism of degradation and synthesis of bio-molecules.
- Regulation and inhibition of the metabolic pathways.
- Biochemical role of different endocrine hormones

COURSE OUTLINE:

INTRODUCTION TO BIOCHEMISTRY

BIOCHEMISTRY OF THE CELL AND BODY FLUIDS:

Ionization of water and weak acids, bases, Concept of pH, and pH scale, Buffers, their mechanism of action, Importance of selectively permeable membranes, osmosis, osmotic pressure, surface tension, viscosity and their importance related to body fluids

CARBOHYDRATES:

Definitions, biochemical functions and classification, Structure and function of Monosaccharide, and their derivatives, Disaccharides, their important examples, Oligosaccharides, their combination with other macromolecules, Polysaccharides, their important examples and biochemical role, The biomedical importance of carbohydrates

PROTEINS:

Definitions Biomedical importance and classification of proteins based on Physiochemical properties, Functional, Nutritional, Structural, Amino acids their structure, properties and functions, Classification and nutritional significance of amino acids.

NUCLEOTIDES AND NUCLEIC ACID:

Chemistry and structure of nucleotides and their biomedical role, Nucleotides, structure, their derivatives and their biomedical role, Nucleic acids, their types, structure and function.

LIPIDS:

Definition, biomedical function, Classification of lipids, Phospholipids, Glycolipids, Sphingolipid and their biomedical significance, Fatty acids, chemistry, classification and biomedical functions, Essential fatty acids, Eicosanoids, their classification and functions in health and disease, Steroid, sterol e.g. Cholesterol, their chemistry, functions and clinical significance.

ENZYMES:

Introduction definition mechanism of catalysis, Coenzymes, Co factors, Iso enzymes their clinical significance, Factors affecting enzyme activity Enzymes inhibitor their classification and biomedical importance, Application of enzymes in clinical diagnosis and therapeutic use.

BIOCHEMISTRY OF DIGESTIVE TRACT:

Introduction of digestion and absorption, Introduction and composition functions daily secretion stimulants and depressant of: saliva; i) Gastric juice and HCl. ii) Pancreatic juice, iii) Bile juice, Digestion and absorption of carbohydrates, proteins, nucleic acid and lipids, Biochemical disorders of GIT e.g. achlorhydria, peptic ulcers lactose intolerance, cholelithiasis and related disorders.

VITAMINS:

Introduction classification, Chemistry biochemical functions deficiency manifestations daily allowances and source of water soluble and fat soluble vitamins, Hypervitaminosis.

MINERAL AND TRACE ELEMENTS:

Classification and biochemical role;

Macro minerals (Na, K, Ca, Cl, PO₄), Micro minerals (Fe, Zn, Mg, Se, I, Cu, Cd, Mn)

METABOLISM OF CARBOHYDRATES:

GLYCOLYSIS;

- Phases and reactions of Glycolysis,
- Energetics of aerobic and anaerobic glycolysis and their importance,

- Regulation of glycolysis,
- The fate of pyruvate.

THE CITRIC ACID CYCLE;

- Reactions,
- Energetics and regulation and importance of Citric acid cycle,
- Amphibolic nature of citric acid cycle.

GLUCONEOGENESIS;

- Important three by-pass reactions of Gluconeogenesis,
- Entrance of amino acids and intermediates of TCA cycle and other nutrients as gluconeogenic substrates,
- Significance of Gluconeogenesis.

GLYCOGEN METABOLISM;

- Reactions of Glycogenesis and Glycogenolysis,
- Disorders of glycogen metabolism (Glycogen storage diseases).

METABOLISM OF FRUCTOSE,

- Galactose and Lactose,
- Regulation of blood glucose level;
- Hyperglycemia,
- Hypoglycemia and their regulating factors,
- Biochemistry of Diabetes Mellitus; its Laboratory findings and Diagnosis.

METABOLISM OF LIPIDS:

- Mobilization and transport of fatty acids, triacylglycerol, and sterols,
- Oxidation of fatty acids;
- Activation and transport of fatty acid in the mitochondria,
- β -oxidation,
- Fate of Acetyl CoA,
- Oxidation of odd number carbon containing fatty acids and unsaturated fatty acids
- Ketogenesis;
- Mechanism and utilization of ketone bodies and significance,
- Ketosis and its mechanism,

BIOSYNTHESIS OF FATTY ACIDS,

- Eicosanoids; Synthesis from Arachidonic acid, their mechanism and biochemical functions,
- Triacylglycerol; synthesis and regulation,
- Synthesis and degradation of phospholipids and their Metabolic Disorders,

CHOLESTEROL SYNTHESIS;

- Regulation, Functions,
- Fate of intermediates of Cholesterol synthesis,
- Hypercholesterolemia,
- Atherosclerosis,

PLASMA LIPOPROTEINS;

- VLDL, LDL, HDL, and Chylomicrons, their transport, functions and importance in health and disease,
- Glycolipid metabolism; abnormalities

METABOLISM OF PROTEINS AND AMINO ACIDS: AMINO ACID

- Oxidation,
- Nitrogen excretion and Urea formation,
- Urea cycle and its regulation,
- Genetic defects of Urea cycle, Functions,
- Pathways of amino acid degradation and genetic disorders of individual amino acids.

METABOLISM OF NUCLEOTIDES:

- De Novo Purine synthesis,
- Synthesis of Pyrimidine,
- Recycling of purine and pyrimidine bases (The salvage pathway),
- Degradation of purine,
- Formation of Uric acid,
- Disorders of purine nucleotide metabolism

BIOCHEMISTRY OF ENDOCRINE SYSTEM:

- Chemistry, Secretion,
- Mechanism of action, regulation and effect on Carbohydrates, Lipids, Proteins, Mineral and Water metabolism and disorders of various endocrine glands

PAPER-IX:

COURSE NAME: **BIOCHEMISTRY (PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

- Introduction to use of Laboratory facilities/equipments
- Basic techniques and fundamental information.
- Preparation of solutions – Normal solution and Normal saline
- Experiments on Carbohydrate – Qualitative Analysis
- Experiments on Proteins – Qualitative Analysis
- Experiments on Fats – Qualitative Analysis

- Chemical Analysis of Urine – Normal and Abnormal Specimens
- The techniques and instrumentation of clinical biochemistry: Spectrophotometry, Flame photometry, UV Spectrophotometry, pH metry, Collection and preservations of clinical specimens.
- Estimation and clinical interpretation of: Blood glucose, Glucose Tolerance Test (Demonstration).
- Determination of Amino acids in Urine by Paper Chromatography (Demonstration).

PAPER-IV:

COURSE NAME: **PHILOSOPHY OF HOMOEOPATHY-I**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

A student of first year, as a new comer in field of Homoeopathy will have a lot of questions about the history and scope of Homoeopathy. This course aims to give the students awareness of past, present and future of Homoeopathy, so that their minds should be clear and have no confusions regarding Homoeopathy as a field of Medicine before taking the advanced courses.

This course also aims to understand the theoretical part of Hahnemann's Organon of Medicine

COURSE OUTLINE:

- Sketch of Dr. Heinemann's life and his search of principle in medicine and Art of healing.
- Life sketch of other renowned Homeopaths and their contribution J.T. Kent, C. Herring, T.F. Allen, C. Dunham, J.H. Clarke, Boenninghausen, Adolf Lippe, C.M. Boger, Knerr, G. Vithoukas, W. Boericke, Stuart Close, Herbert Roberts, Kashi Ram
- History of development of Homeopathy throughout world
- Current status of acceptance and research in Homeopathy
- General introduction to Homoeopathy and its principles.
- Homeopathy compared to Orthodox system of medicine
- Scope and limitations of Homeopathy
- The concept of disease and cure in Homoeopathy.
- Logic, Deductive and Inductive logic
- Materialism versus Spiritualism
- Introduction to various editions of Organon of medicine

TEXTUAL STUDY OF ORGANON OF MEDICINE (APHORISM NO.1-70)

1. Highest aim of the physician
2. Highest aim of the cure.

3. Causes and Kinds of the diseases.
 - Acute and chronic diseases
 - Similar and dissimilar diseases
4. Classification of the Symptoms.
5. Totality of the symptoms.
6. Vital Force, its role in health, disease, and cure.
7. Dynamic of autocracy.
8. Knowledge of the remedies.
 - How medicines cure?
 - Proving of Homoeopathic Medicines
9. Homoeopathic action.
10. Antipathic action.
11. Allopathic action.
12. Homoeopathic Principle.
13. Law of dissimilar.
14. Different Systems of Medicine.
15. Primary and Secondary Action of the medicine

PAPER-V:

COURSE NAME: **ENGLISH**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

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

COURSE OUTLINE:

Basics of Grammar
 Parts of speech and use of articles
 Sentence structure, active and passive voice
 Practice in unified sentence
 Analysis of phrase, clause and sentence structure
 Transitive and intransitive verbs
 Punctuation and spelling

Comprehension

Answers to questions on a given text

Discussion

General topics and every-day conversation (topics for discussion to be at the discretion of the teacher keeping in view the level of students)

Listening

To be improved by showing documentaries/films carefully selected by subject teachers

Translation skills

Urdu to English

Paragraph writing

Topics to be chosen at the discretion of the teacher

Presentation skills

Introduction

Note: Extensive reading is required for vocabulary building

Paragraph writing

Practice in writing a good, unified and coherent paragraph

Essay writing

Introduction

CV and job application

Translation skills

Urdu to English

Study skills

Skimming and scanning, intensive and extensive, and speed reading, summary and précis writing and comprehension

Academic skills

Letter/memo writing, minutes of meetings, use of library and internet

Presentation skills

Personality development (emphasis on content, style and pronunciation)

Note: Documentaries to be shown for discussion and review

PAPER-VI:

COURSE NAME: **ISLAMIC STUDIES AND PAK STUDIES**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

This course is aimed at:

- 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.
- Develop vision of historical perspective, government, politics, contemporary Pakistan, ideological background of Pakistan.
- Study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

COURSE OUTLINE:

ISLAMIC STUDIES (60 marks)

Introduction to Quranic Studies

- Basic Concepts of Quran
- History of Quran
- Uloom-ul -Quran

Study of Selected Text of Holly Quran

- Verses of Surah Al-Baqra Related to Faith (284-286)
- Verses of Surah Al-Hujrat Related to Adab Al-Nabi (1-18)
- Verses of Surah Al-Mumanoon Related to Characteristics of faithful (1-11)
- Verses of Surah al-Furqan Related to Social Ethics (63-77)
- Verses of Surah Al-Inam Related to Ihkam (152-154)

Study of Selected Text of Holly Quran

- Verses of Surah Al-Ihzab Related to Adab al-Nabi (6, 21, 40, 56, 57, 58.)
- Verses of Surah Al-Hashar (18, 19, 20) Related to thinking, Day of Judgment
- Verses of Surah Al-Saf Related to Tafakar,Tadabar (1,14)

Seerat of Holy Prophet (S.A.W) I

- Life of Muhammad Bin Abdullah (Before Prophet Hood)
- Life of Holy Prophet (S.A.W) in Makkah
- Important Lessons derived from the life of Holy Prophet in Makkah

Seerat of Holy Prophet (S.A.W) II

- Life of Holy Prophet (S.A.W) in Madina
- Important Events of Life Holy Prophet in Madina
- Important Lessons derived from the life of Holy Prophet in Madina

Introduction to Sunnah

- Basic Concepts of Hadith
- History of Hadith

- Kinds of Hadith
- Uloom –ul-Hadith
- Sunnah & Hadith
- Legal Position of Sunnah

Selected Study from Text of Hadith

- Introduction to Islamic Law & Jurisprudence
- Basic Concepts of Islamic Law & Jurisprudence
- History & Importance of Islamic Law & Jurisprudence
- Sources of Islamic Law & Jurisprudence
- Nature of Differences in Islamic Law
- Islam and Sectarianism

Islamic Culture & Civilization

- Basic Concepts of Islamic Culture & Civilization
- Historical Development of Islamic Culture & Civilization
- Characteristics of Islamic Culture & Civilization
- Islamic Culture & Civilization and Contemporary Issues

Islam & Science

- Basic Concepts of Islam & Science
- Contributions of Muslims in the Development of Science
- Quranic & Science

Islamic Economic System

- Basic Concepts of Islamic Economic System
- Means of Distribution of wealth in Islamic Economics
- Islamic Concept of Riba
- Islamic Ways of Trade & Commerce

Political System of Islam

- Basic Concepts of Islamic Political System
- Islamic Concept of Sovereignty
- Basic Institutions of Govt. in Islam

Islamic History

- Period of Khlaft-E-Rashida
- Period of Umayyads
- Period of Abbasids

Social System of Islam

- Basic Concepts of Social System of Islam
- Elements of Family
- Ethical Values of Islam

PAK STUDIES (40 marks)

4. 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
 - i. Indus Civilization
 - ii. Muslim advent
 - iii. Location and geo-physical features.

5. Government and Politics in Pakistan

Political and constitutional phases:

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

6. Contemporary Pakistan

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

BHMS SECOND PROFESSIONAL YEAR

PAPER-I:

COURSE NAME: **ANATOMY-II**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

- To learn special histology, and Embryology
- To learn the anatomy of head, Neck, Brain, Abdomen, Pelvis and nervous system

COURSE OUTLINE:

SPECIAL EMBRYOLOGY

1. Head and Neck

- Pharyngeal apparatus (including pharyngeal arches, pharyngeal pouches and pharyngeal clefts)
 - Tongue
 - Thyroid
 - Parathyroid
 - Thymus
 - Pituitary
 - Upper respiratory system
 - Face and palate
2. Body cavities
 - Development of body cavities
 - Formation of diaphragm
 3. The respiratory system
 4. The cardiovascular system
 - Heart
 - Great vessels
 - Foetal circulation and changes at birth
 5. The urinary system
 - Development of Kidney
 - Urinary bladder
 - Urethra
 - Development of adrenal glands
 6. The male reproductive system
 - Testis
 - Genital ducts
 - External genitalia
 7. The female reproductive system
 - Ovaries
 - Oviducts
 - Uterus
 - Vagina
 - External genitalia
 8. The Musculo- skeletal system
 - Development of skeleton
 - Development of muscles
 9. Development of Limbs
 10. Development of Integumentary System (consisting of development of skin and its appendages and development of mammary glands)
 11. Special Senses (eye and ear)

12. Nervous system
13. Digestive system
 - Division of Gut tube
 - Mesenteries
 - Liver, Gall bladder, Pancreas, Spleen

SPECIAL HISTOLOGY

Digestive System, Respiratory System, Urinary System, Male Reproductive System, Female Reproductive System, Endocrine Glands, Organs of Special Senses

GROSS ANATOMY

1. Head & neck
2. Brain and spinal cord
3. Abdomen and pelvis

NEURO-ANATOMY

- Spinal Cord
- Medulla Oblongata
- Pons
- Mid Brain
- Cerebellum
- Thalamus
- Hypothalamus
- Basal Ganglia
- Cerebral Cortex
- Autonomic Nervous System

NOTE

During the study of Gross Anatomy, emphasis should be on the applied aspects, radiological anatomy, surface anatomy and cross-sectional anatomy

PAPER-VII:

COURSE NAME: **ANATOMY-II (PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

GROSS ANATOMY

- Abdomen Dissection: Anterior abdominal wall and inguinal region, external genitalia. Viscera and Posterior Abdominal wall and nerve plexus
- Pelvis Dissection: Pelvic viscera, blood vessels and nerves.

- Prosected Parts: Perineum including ischio-rectal fossa.

HEAD & NECK

Superficial and deep dissection of

- Face and neck
- Orbit and eye ball
- Submandibular region
- Temporal and infratemporal fossa
- Cranial cavity
- Naso and Oropharyngeal regions.
- Ear
- Larynx and pharynx

NEURO -ANATOMY

- Cross specimen of full brain, meninges, spinal cord; prosected specimens to demonstrate visual system, auditory and vestibular pathways and major functional areas.
- Stained sections of brain and spinal cord at various levels to demonstrate cranial nerve nuclei, ascending and descending tracts, thalamic nuclei and important functional areas

DEMONSTRATIONS

- Bones of skull and vertebral column
- Brain and spinal cord
- Cross- sectional anatomy
- Radiological anatomy
- CT and MRI scan

MICROSCOPIC ANATOMY

- Routine and special stained slides of all the tissues and organs of body.
- Electron-micrographs to demonstrate filtration barrier of kidney, alveolar septum, tight junctions of capillaries and such relevant areas.

DEVELOPMENTAL ANATOMY

- Models to demonstrate various stages of early foetus and different organ development.
- Slides of ovary and testis to show follicles and stages of maturation of spermatozoa; early chick embryos to understand the development of tissues and organs from conception till term.

PAPER-II:

COURSE NAME: **PHYSIOLOGY-II**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

- To understand the basic physiology of organs and tissues of nervous system and special senses
- To acquaint the students with functions of body fluids, kidneys and endocrine hormones
- To understand the basic physiology of Endocrine Hormones

COURSE OUTLINE:

NERVOUS SYSTEM

- Organization of CNS
- Significance of Dermatomes
- Classification of nerve fibers
- Properties of Synaptic transmission
- Neurotransmitters and neuropeptides
- Types and functions of Sensory receptors and Neurotransmitters (applied aspect)
- Functions of spinal cord ascending tracts
- Reflex action/Reflexes
- Interpretations of reflexes
- Muscle spindles/muscle tone
- UMN/LMN lesion features and localization
- Tactile, temperature and pain sensations
- Injuries and diseases of spinal cord
- Structure of cerebral cortex Analgesia system
- Sensory cortex Disorders of cranial nerves
- Motor cortex
- Motor pathways, Pyramidal and Extra pyramidal Hemiplegia/Paraplegia
- Basal ganglia, connections and functions
- Parkinsonism and other lesions of basal ganglia
- Cerebellum, connections and functions Cerebellar Disorders
- Vestibular Apparatus/Regulation of Posture and equilibrium
- Sleep Disorders
- Reticular formation
- Physiology of sleep
- EEG
- Physiology of memory
- Higher mental function assessment

- Physiology of speech
- Abnormalities of speech
- Thalamus-nuclei and functions
- Thalamic syndrome
- Hypothalamus limbic system
- Lesions of Hypothalamus
- Cerebrospinal fluid
- Regulation of body temperature
- Functions of skin
- Hydrocephalus
- Autonomic nervous system
- Physiology of aging

SPECIAL SENSES:

- Structure and function of eye-ball
- Intra ocular pressure and Glaucoma
- Optical principles
- Accommodation of eye
- Errors of refraction
- Visual acuity
- Photochemistry of vision
- Color vision/night blindness
- Color blindness funduscopy
- Dark and light adaptation
- Neural function of Retina
- Visual pathway light reflex and pathway
- Field of vision and lesions of visual pathway
- Visual cortex
- Intra ocular fluids
- Visual evoked potentials and electro retinogram
- Eye movements and control
- Physiological anatomy of cochlea
- Functions of external and middle Ear
- Functions of inner Ear
- Organ of Corti
- Hearing test audiometry
- Auditory pathway
- Types of deafness
- Auditory evoked potentials
- Physiology of smell-receptors and pathway
- Olfaction/Taste abnormalities
- Physiology of taste

BODY FLUIDS AND KIDNEYS

- Clinical/Applied Concepts
- Compartments of body fluids and measurement of Renal function test
- Tissue and lymph fluids Fluid Excess/depletion
- Structure of kidney/Nephron
- General functions of kidney
- GFR factors regulating
- Formation of urine, filtration, re-absorption, secretion, Plasma Clearance
- Concentration and dilution of urine
- Renal failure/uremia
- Electrolyte balance
- Water balance
- Regulation of blood pressure by kidneys
- Nephritic syndrome
- Hormones of kidney
- Acidification of urine
- Artificial kidney/Hem dialysis
- Acid base balance
- Metabolic acidosis/Alkalosis
- Micturition
- Abnormalities of Micturition including Incontinence

ENDOCRINOLOGY

- General principles (classification, mechanism of action, feed back control)
- Acromegaly
- Gigantism
- Biosynthesis, transport, metabolism, actions and control of secretion of hormones Hormonal assay
- Hypothalamus Dwarfism
- Anterior pituitary Panhypopituitarism, Sheehan's syndrome
- Posterior pituitary Diabetes insipidus
- Thyroid gland, Parathyroid gland Myxedema, Cretinism, Thyrotoxicosis, Pheochromocytoma
- Adrenal medulla, Adrenal cortex Syndrome of inappropriate ADH secretion, Cushing's syndrome, Addison's disease
- Pancreas Diabetes Mellitus and Hypoglycemia
- Pineal gland
- Thymus
- Kidney Adrenogenital syndrome
- Physiology of growth Zollinger Allison's Syndrome
- Reproduction

- Functional anatomy of Male reproductive system
- Chromosomal abnormalities
- Spermatogenesis
- Semen analysis Male infertility
- Erection and ejaculation
- Testosterone
- Male puberty
- Oogenesis and functional anatomy of
- Female gonads
- Oestrogen and progesterone
- Female infertility
- Menstrual cycle
- Contraception
- Puberty and menopause
- Pregnancy- Physiological changes In mother during pregnancy
- Pregnancy Tests
- Placenta
- Parturition
- Lactation
- Neonatal Physiology

PAPER-VIII:

COURSE NAME: PHYSIOLOGY-II: PRACTICAL

TOTAL MARKS: 100

COURSE OUTLINE:

NERVOUS SYSTEM

- Simple muscle twitch (SMT) in frog and effect of temperature.
- Effect of fatigue on muscle contraction.
- Tetanization in frog's muscle (Demonstration)+
- Effect of two successive stimuli on SMT (Demonstration)
- Effect of preload and after load on SMT (Demonstration)
- Determination of velocity of conduction in sciatic nerve (Demonstration)
- Use of physiograph (poly graph)
- Elicit fatigue in human index finger

SPECIAL SENSES:

- Field of vision by confrontation method
- Field of vision by Perimetry
- Light reflex
- Ophthalmoscopy

- Visual acuity
- Color vision
- Hearing tests
- Audiometry
- Taste Sensation
- Olfaction sensation

BODY FLUIDS:

- Urine Complete Examination
- Stool Examination
- Blood Complete Examination
- Semen Examination
- Cerebrospinal Fluid Examination
- Pericardial fluid examination
- Pleural Fluid Examination
- Ascitic Fluid Examination
- Blood Sugar
- Blood Urea
- Blood Cholesterol etc.
- Tests for endocrine abnormalities
- Biopsies and cytologic techniques

PAPER-III:

COURSE NAME: **BIostatistics AND MATHEMATICS**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

After completion of this course the student should be able to:

- Understand the use of the essential tools of basic mathematics;
- Apply the concepts and the techniques in their respective disciplines;
- Model the effects non-isothermal problems through different domains;
- Able to organize data in useful and meaningful form

COURSE OUTLINE:

MATHEMATICS:

1. ALGEBRA:

SETS AND FUNCTIONS:

- Elementary concepts of sets
- Concept of functions
- Domain and Range of a Function
- Different types of Functions
- Graphical representation of a function
- Some applications of functions

SOLUTION OF LINEAR AND QUADRATIC EQUATIONS

- Equations reducible to Quadratic Form.
- Solution of simultaneous Equations.

ARITHMETIC, GEOMETRIC AND HARMONIC PROGRESSIONS

ARITHMETIC, GEOMETRIC AND HARMONIC MEANS.

PERMUTATIONS AND COMBINATIONS

BINOMIAL THEOREM: SIMPLE APPLICATION.

TRIGONOMETRY:

- Measurement of Angles in Radian and degrees.
- Definitions of circular functions.
- Derivation of circular function for simple cases.

ANALYTICAL GEOMETRY:

- Coordinates of point in a plane.
- Distance between two points in a plane.
- Locus,
- Equations of straight line,
- Equation of Parabola,
- Circle and Ellipses.

DIFFERENTIAL CALCULUS:

- Concept of Derivations.
- Rules of Differentiation.
- Examples on the evaluation of Derivations.
- Derivatives of Exponential and Logarithmic Functions,
- Partial Derivations.
- Higher Order Derivatives.
- Maxima & Minima points of Inflections.

INTEGRAL CALCULUS:

- Concept of Integration.
- Rules of Integrations.

- Integrations of Algebraic and Trigonometric functions by using different techniques.

BIOSTATISTICS:

DESCRIPTION OF STATISTICS:

- Descriptive Statistics
- What is Statistics?
- Importance of Statistics
- What is Biostatistics?
- Application of Statistics in Biological and Pharmaceutical Sciences
- How samples are selected?

ORGANIZING and DISPLAYING DATA:

- Variables
- Quantitative and Qualitative Variables
- Univariate Data
- Bivariate Data
- Random Variables
- Frequency Table
- Diagrams
- Pictograms
- Simple Bar Charts
- Multiple Bar Charts
- Histograms

SUMMARIZING DATA and VARIATION:

- The Mean
- The Median
- The Mode
- The Mean Deviation
- The Variance and Standard Deviation
- Coefficient of Variation

CURVE FITTING:

- Fitting a Straight Line
- Fitting of Parabolic or High Degree Curve

PROBABILITY:

- Definitions
- Probability Rules
- Probability Distributions (Binomial & Normal Distributions)

SIMPLE REGRESSION AND CORRELATION:

- Introduction
- Simple Linear Regression Model
- Correlation co-efficient

TEST OF HYPOTHESIS AND SIGNIFICANCE:

- Statistical Hypothesis
- Level of Significance
- Test of Significance
- Confidence Intervals
- Test involving Binomial and Normal Distributions

STUDENT “t”, “F” and Chi-Square Distributions:

- Test of Significance based on “t”, “F” and Chi-Square Distributions

ANALYSIS OF VARIANCE:

- One-way Classification
- Two-way
- Classification
- Partitioning of Sum of Squares and Degrees of Freedom
- Multiple Comparison Tests such as LSD
- The analysis of Variance Models

PAPER-IV:

COURSE NAME: PHILOSOPHY OF HOMOEOPATHY-II

TOTAL MARKS: 100

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with philosophy of various Complementary and Alternative therapies

To impart the philosophical concepts from a practical perspective related to

- Classification of disease
- Individualization
- Case taking
- Drug proving
- Selection of remedies
- Aggravation

COURSE OUTLINE:

TEXTUAL STUDY OF ORGANON OF MEDICINE (APHORISM NO.71-159)

Knowledge and Classification of Disease (Aphorism No.71-81)

Individualization (Aphorism No.82)

Case taking (Aphorism No.83-104)

- Physician free from prejudice.
- Recording of the symptoms.
- Physician's observation.
- Past treatment.
- Investigation of the Maintaining causes. etc

Knowledge of applying the drug for cure

Drug proving (Aphorism No.105-145)

- Investigation of the pathogenetic action of the drug.
- Knowledge of the many drugs.
- Primary, secondary, and alternating effect of the drug.
- Method of preparation of the drug for proving.
- Proving on healthy and sick persons.
- Confirmatory re-proving.
- Building of Materia Medica. etc

Methods of selection of the remedies (Aphorism No.146-154)

Appropriate dose, Homoeopathic Aggravation, removal of the symptoms (Aphorism No.155-159)

INTRODUCTION TO PHILOSOPHY AND SCOPE OF FOLLOWING ALTERNATIVE THERAPIES

1. Herbalism
2. Aroma-therapy
3. Electro-Homoeopathy
4. Flower remedies
5. Mud therapy
6. Naturopathy
7. Colour Therapy
8. Magnetotherapy
9. Radiotherapy

10. Hydropathy
11. Allopathy
12. Unani and Ayurvedic
13. Osteopathy
14. Chiropractic
15. Massage
16. Applied Kinesiology
17. Reflexology
18. Acupuncture
19. Acupressure
20. Shiatsu
21. Yoga
22. Alexander Technique
23. Spiritual treatment
24. Therapeutic Touch
25. Hypnotherapy
26. Holistic Medicine Therapy

PAPER-V:

COURSE NAME: MATERIA MEDICA-I

TOTAL MARKS: 100

SPECIFIC OBJECTIVES OF COURSE:

- To introduce the students with basic concepts related to Homoeopathic Materia Medica, so that they may be able to study Homoeopathic Medicines in further courses
- Study of Homoeopathic remedies enlisted in course outlines of this course

COURSE OUTLINE:

Definition of Homoeopathic Materia Medica

Origin and history of Homoeopathic Materia Medica

Brief history of first Materia Medica Pura of Dr. Hahnemann

Sources of Homoeopathic Materia Medica

- Empirical knowledge.
- Homoeopathic drug proving
- Toxicological report and Data collection in respect of certain drugs.
- Therapeutic drug proving

- Clinical experience and drug trails.
- Homoeopathic Drug Proving.

The development of the methods of proving since Dr. Hahnemann

- Necessity of proving.
- Drug reactions
- Homoeopathic Proving OF medicines, Planning and Protocol

Dose:

- Lethal dose
- Patho-pharmacological dose.
- Physiological dose.
- Micro dose.

Proving format or Techniques:

- Single Blind technique
- Double Blind Technique.
- Crossover trail.

Prover's Society, Role and qualities of the;

- Committee
- Master prover/ Coordinator
- Supervisors.
- Subject (Prover)

STUDY OF HOMOEOPATHIC REMEDIES, EMPHASIZING THE FOLLOWING ASPECTS:

- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and Comparative Studies with Other Homoeopathic Remedies

LIST OF REMEDIES (ANIMAL KINGDOM)

PHYLUM MOLLUSCA

- Sepia: Cuttle fish (Juice)
- Murex purpurea: Purple-fish

PHYLUM PORIFERA

- Badiaga: Fresh water sponge
- Spongia tosta: Common sponge

PHYLUM ARTHROPODA

- Aranea diadema: The Cross spider
- Latrodectus mactans: Black widow spider
- Mygale lasiodora: Black Cuban spider
- Tarentula cubensis: Cuban spider
- Tarentula hispanica: Spanish spider
- Theridion curassavicum: Orange spider
- Apis mellifica: Honeybee
- Vespa: Wasp
- Blatta orientalis: Indian cockroach
- Cantharis: Spanish fly
- Cimex acanthia: Bedbug
- Coccus cacti: Cochineal insect
- Formica rufa: The Ant

PISCES

- Serum anguillar ichthotoxin: Eel serum
- Oleum jecoris aselli: Cod-liver oil
- Pyrarara: River fish

AMPHIBIA

- Bufo rana: Toad

LIZARDS

- Heloderma: Gila monster

OPHIDIA (SNAKE POISONS)

- Crotalus horridus: North American Rattlesnake
- Elaps corallinus: Brazilian Coral snake
- Lachesis trigonocephalus: Surukuku
- Naja tripudians: Indian hooded snake
- Vipera: Common Viper

MAMMALIA

- Pulmo vulpis: fresh lung of wolf or fox.
- Carbo animalis: charred ox hide.
- Moschus: inspissated secretion contained in preputial follicles of Musk deer

PAPER-IX:

COURSE NAME: **MATERIA MEDICA-I
(PRACTICAL/VIVA-VOCE)**

TOTAL MARKS: **50**

COURSE OUTLINE: Viva-Voce and practical emphasizing chiefly upon the comparative study of the remedies included in this year.

PAPER-VI:

COURSE NAME: **BIOINFORMATICS**

TOTAL MARKS: **50**

SPECIFIC OBJECTIVES OF COURSE:

- To acquaint the students with fundamental concepts in Molecular Biology
- To acquaint the students with bioinformatics tools, databases, algorithms and applications.

COURSE OUTLINE:

- Introduction to Bioinformatics
- Applications of Bioinformatics
- Genomics
- Transcriptomics
- Proteomics
- Metabolomics
- Biochemical Genetics (Informational Flow in the Cell)
- The structural basis of cellular information
- DNA, Chromosomes
- Discovery and organization of DNA in Genomes
- A, B, Z, and H, DNA
- Super coiling of DNA
- The replication of DNA (DNA dependent DNA synthesis)
- DNA polymerase, its components and functions

- Initiation, elongation and termination of Replication
- DNA Repair, and Recombination, Transposition
- Mutation and Cancers
- The Transcription (DNA dependent DNA synthesis)
- RNA polymerase, its components and functions
- Initiation, Elongation and termination of transcription
- RNA processing, and editing
- RNA dependents synthesis of RNA and DNA
- Reverse transcription-DNA synthesis from viral RNA
- Retroviruses in relation to cancer and AIDS
- Translation (Protein Synthesis)
- The genetic codes and their characteristics
- Initiation, Elongation, and termination of protein synthesis
- Post-translational modification
- Regulation of Gene-Expression
- Molecular biology technology
- DNA isolation
- DNA-recombinant technology
- Hybridization, blotting techniques
- Genetic Disorders
- Physical Map of genome
- Genome mapping
- Multiple sequence alignment
- Gene and protein relationships
- Neuroinformatics in biology, application of genome analysis and genomics
- Introduction to principle of gene therapy and gene delivery system
- Micro-array development
- Computer programming for bioinformatics
- Software development for bioinformatics
- Molecular programming
- Perl Programming for Bioinformatics
- Operating System (Windows, Linux)
- Biological Databank
- Database Management System
- Molecular Imaging & Drug Designing
- Pharmacogenomics & Pharmacogenetics
- BLAST
- PubMed
- EMBL
- GenBank
- PDB

- Swiss-Port
- Medical records
- Clinical Database and Database models
- Medical Imaging and Digital imaging
- Data acquisition
- Patient machine interface
- Networks
- Data-exchange
- Automated Diagnostic systems

PAPER-X:

COURSE NAME: **BIOINFORMATICS (PRACTICAL)**

TOTAL MARKS: **50**

COURSE OUTLINE:

Basic principle of computing in bioinformatics, Web retrieving for genomic and proteomic data, Basic molecular techniques.

BHMS THIRD PROFESSIONAL YEAR

PAPER-I:

COURSE NAME: **PATHOLOGY**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To understand comprehensively the concepts in General Pathology

To introduce the students with Special Pathology of different organs, systems and tissues

COURSE OUTLINE:

INTRODUCTION, NEED, IMPORTANCE AND DIVISION OF PATHOLOGY

TERMINOLOGY

GENERAL PATHOLOGY

CELL INJURY

- Definition, Causes of cell Injury
- Mech. of cell injury
- Morphology of cell Injury

- Intracellular accumulation
- Cellular Adaptation of growth and differentiation
- Atrophy
- Hypertrophy
- Hyperplasia
- Metaphase
- Dysplasia

ACUTE AND CHRONIC INFLAMMATION

- Acute Inflammation
- Vascular changes
- Vascular Permeability
- Changes in vascular flow and Caliber
- Cellular Events
- Chemical Mediators
- Chronic Inflammation
- Definition and cause

REPAIR

- Cell Growth
- Regeneration
- Wound healing
- Pathological aspect of repair
- Disorder of Fluid
- Vascular Flow and Shock
- Edema
- Hyperemia and Congestion
- Hemorrhage
- Thrombosis
- Embolism
- Infarction
- Shock

NEOPLASIA

- Definition
- Nomenclature
- Characteristic of benign and malignant neoplasm
- Differentiation and anaplasia
- Rate of growth
- Local Invasion
- Metastasis, Spread of Tumor
- Etiology of cancer

- Carcinogenic Agent, Chemical Carcinogen, Radiation Carcinogen, Viral Carcinogen
- Clinical features of neoplasm
- Effects of tumor on host
- Grading and Staging of Cancer
- Laboratory diagnosis of Cancer

ENVIRONMENTAL AND OCCUPATIONAL DISORDERS

- Smoking
- Pneumoconiosis
- Coal mine worker's disease
- Silicosis
- Asbestosis
- Aspirin Abuse
- Exogenous estrogen and oral Contraceptives
- Acetaminophen
- Lead
- Carbon Monoxide
- Alcohol and Ethanol
- Heroine, Hashish
- Thermal Burns
- Hyperthermia
- Electrical Injury
- Injury by Ionizing agents or Radiation

SPECIAL PATHOLOGY:

DISORDERS OF HEART

- Hypertension,
- Congestive Cardiac Failure (CCF)
- Right sided heart failure
- Left sided heart failure
- Ischemic Heart Disease
- Angina Pectoris
- Myocardial Infarction
- Congenital heart disease
- Rheumatic fever and rheumatic heart disease
- Infective Endocarditis
- Myocarditis
- Cardiomyopathy; Dilated, Hypertrophic, Restrictive

DISORDERS OF BLOOD VESSEL

- Atherosclerosis

- Varicose Vein
- Phlebothrombosis and Thrombophlebitis
- Obstruction of Superior and Inferior Vena Cava (cause)

DISORDERS OF BLOOD AND LYMPHOID SYSTEM

- Hereditary spherocytosis
- Sickle cell Anemia
- Thalasemia
- Aplastic anemia
- Poly erythemia
- Leucopenia
- Lymphoma
- Non-Hodgkin Lymphoma
- Hodgkin lymphoma
- Acute leukemia
- Acute myeloid leukemia
- Acute Lymphoblastic leukemia
- Chronic leukemia
- Chronic myeloid leukemia
- Chronic lymphoblastic leukemia
- Thrombocytopenia (Brief)

DISORDERS OF RESPIRATORY SYSTEM

- Obstructive lung disease (cold)
- Asthma
- Emphysema
- Chronic Bronchitis
- Bronchiectasis
- Adult Respiratory Distress Syndrome
- Pulmonary thromboembolism
- Hemorrhage and Infarction
- Acute Bacterial pneumonia
- Primary atypical pneumonia
- Tuberculosis, Primary T.B, Secondary T.B
- Lung Abscess
- Bronchogenic Carcinoma
- Definitions of Pleural Effusion
- Pleumitis Pleutitis
- Pneumothorax
- Hemothorax
- Chylothorax

DISORDERS OF ORAL CAVITY

- Infections
- Benign Tumors
- Peripheral giant cell granuloma (Brief)
- Oral hairy leukoplakia (Brief)
- Leukoplakia
- Squamous Cell Carcinoma (Brief)
- Dental Carries
- Periodontal Disease

DISORDERS OF GASTRO INTESTINAL TRACT

- Esophagitis
- Reflux Esophagitis
- Gastritis, Acute and Chronic
- Stress Ulcer
- Peptic Ulcer, Duodenal, Gastric
- Gastric Carcinoma (Brief)
- Inflammatory Bowel Disease
- Crohn's disease
- Ulcerative Colitis
- Infective Enterocolitis (Only causes)
- Malabsorption syndrome
- Disaccharide Deficiency
- Tropical sprue
- Celiac sprue
- Appendicitis
- Hemorrhoids

DISORDERS OF LIVER AND BILIARY TRACT

- Jaundice (Causes and Normal physiology)
- Hyperbilirubinemia, Conjugated, Unconjugated
- Viral Hepatitis, Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis D, Hepatitis E,
- Cirrhosis, Causes, Types,
- Post necrotic cirrhosis
- Biliary Cirrhosis (Primary and Secondary)
- Pigment Cirrhosis (hemochromatosis)
- Cirrhosis associated with Wilson's disease
- Cirrhosis associated with antitrypsin deficiency
- Carcinoma of Liver
- Cholangitis and Liver abscess
- Cholelithiasis, Acute and Chronic

DISORDERS OF PANCREAS;

- Diabetes Mellitus
- Acute and Chronic pancreatitis

DISORDERS OF KIDNEY

- Nephrotic Syndrome
- Nephritic Syndrome
- Tubulo Interstitial Nephritis
- Acute Pylonephritis
- Acute drug induced interstitial nephritis
- Chronic analgesic Nephritis
- Acute tubular Necrosis
- Hypertension due to kidney
- Renal Stones
- Renal Cell Carcinoma (Brief)
- Wilm's Tumor (Brief)
- Acute and Chronic Cystitis
- Polycystic disease

DISORDERS OF MALE GENITAL SYSTEM

- Epididymitis
- Orchitis
- Urethritis and Prostatitis
- Benign Prostate Hyperplasia
- Carcinoma of Prostate
- Sq. cell Ca. of penis (brief)

DISORDERS OF ENDOCRINE SYSTEM

- Pituitary Gland
- Hypopituitarism
- Hyperpituitarism
- Hypothyroidism
- Congenital hypothyroidism
- Primary hypothyroidism
- Hyperthyroidism
- Simple and diffuse goiter
- Multinodular goiter
- Thyroiditis
- Hashimoto's Thyroiditis
- Sub-Acute Thyroiditis
- Chronic Thyroiditis
- Adenoma
- Carcinoma, Papillary

- Follicular, Anaplastic
- Primary hyper parathyroidism
- Secondary hyperparathyroidism
- Hypoparathyroidism
- Cushing Syndrome
- Hyperaldosteronism
- Addison Disease

PAPER-VII:

COURSE NAME: **PATHOLOGY (PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

STUDY OF PATHOLOGICAL SLIDES OF VARIOUS PATHOLOGICAL CONDITIONS

- Acute inflammation
- Chronic inflammation
- Chronic specific inflammation
- Different types of Degeneration
- Thrombosis
- Embolism
- Infarction
- Necrosis
- Gangrene
- Hyperplasia
- Pigmentation
- Calcification
- Papilloma
- Adenoma
- Chondroma
- Fibroma,
- Leiomyoma,
- Neurofibroma
- Sq. Cell Carcinoma
- Basal Cell Carcinoma
- Transitional Cell Carcinoma
- Adenocarcinoma
- Fibrocarcinoma
- Rhabdomyosarcoma,
- Leiomyosarcoma
- Lymphosarcoma

- Liposarcoma
- Reticular Cell Sarcoma
- Hodgkin's disease
- Breast Carcinoma
- Osteogenic Sarcoma
- Osteoclastoma

LABORATORY EXAMINATIONS

- Urine complete Examination
- Stool Examination
- Blood Complete Examination
- Semen Examination
- Cerebrospinal Fluid Examination
- Pericardial fluid examination
- Pleural Fluid Examination
- Ascitic Fluid Examination
- Blood Sugar
- Blood Urea
- Blood Cholesterol etc
- Techniques of Clinical Blood Examination for various diseases
- Gastric Analysis
- Tests for liver function test
- Renal function test
- Tests for endocrine abnormalities
- Biopsies and cytologic techniques

PAPER-II:

TITLE OF THE COURSE: **MICROBIOLOGY AND PARASITOLOGY**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with viruses, bacteria, fungi and diseases caused by these organisms.

To acquaint the students with concepts of immunology, parasitology, protozoology, sterilization and biotechnology.

COURSE OUTLINE:

Historical Status and Evolution of Microbiology and Parasitology

Nomenclature and Classification of Micro-Organisms

VIROLOGY

- General characteristics of virus
- Classification of viruses and detail of at least one species from every group
- DNA and RNA viruses
- Main viruses, their pathogenicity, transmission and diseases
- Bacteriophages
- Diagnostic Techniques

GENERAL BACTERIOLOGY

- Historical Background
- General and Cellular Morphology
- Structures and Functions
- Nutritional requirements of Bacteria and nutrition factors affecting growth
- Growth of Bacteria and Normal flora
- Growth curve
- Growth factors and Growth characteristics
- Pathogenesis and spread of Bacteria
- Classification of Bacteria
- Culture media
- Bacterial cultures and staining methods

SPECIAL BACTERIOLOGY;

- Organisms and diseases caused by them
- Gram positive Cocci
- Streptococci
- Pneumococci
- Staphylococci
- Gram -ve Cocci
- Neisseriaceae
- Meningococci
- Gonococci
- Gram-ve Bacilli
- E.coli, Salmonella
- Shigella
- Vibrio cholera
- Pseudomonas
- Helicobacter Pylori
- Spore forming Bacilli
- Clostridium tetani
- Gas Gangrene Clostridia, Perfringens
- Difficile botulinum
- Brucella (Plague)

- Bordetella pertussus
- Haemophilus influenza
- Corynebacterium, diphtheria
- Mycobacterium tuberculosis
- Treponema (Spirochetes)
- Rickettsiae

FUNGI:

- Properties of Fungi
- Classification of Fungi and their name
- Pathogenic potentials and superficial Mycosis
- Systematic fungi
- Actinomyces
- Candidiasis
- Aspergillosis
- Diagnostic Techniques in Mycology

IMMUNOLOGY:

- Introduction and overview
- Elements of innate and acquired immunity
- Immunogens and antigens
- Antibody structure and function
- Antigen antibody interactions
- Immune assays
- Monoclonal and polyclonal antibodies
- Biology of B lymphocytes
- Biology of T lymphocytes
- Role of MHC
- Activation and function of T and B lymphocytes
- Cytokines
- Tolerance and autoimmunity
- Complement
- Hypersensitivity reactions Type I, II, III, IV and V
- Immunodeficiency disorders and neoplasias of lymphoid system
- Transplantation
- Tumor immunology
- Resistance and immunization to infectious diseases

PARASITOLOGY:

- The Normal Flora
- Microbiology of Air, Water and Soil
- Historical Introduction
- Life Cycle
- Pathogenecity

- Laboratory Diagnosis and Prognosis with therapy
- Classification
- Entamoeba histolitica
- Giardia lamblia
- Trichomonas vaginalis
- Leishmania
- kalazar
- Malaria
- Helminthology
- Cestodes
- Tania saginata
- Diphylobotulinum latius
- Echino coccus
- Granulosus, Nematodes
- Trichuris tricura
- Ascaris lumbricoides
- Enterobius vermicularis
- Encylostoma duodenale
- Wuchereria bancroftis (Fliriasis)

STERILIZATION AND DISINFECTIONS:

FERMENTATION: Introduction to fermentation and important products produced by the fermentation.

BIOTECHNOLOGY: Background of recombinant technology and applications in this field.

PAPER-VIII:

COURSE NAME: **MICROBIOLOGY AND PARASITOLOGY
(PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

- Study of Microscope and use of oil Immersion Lenses
- Sterilization of Glass ware and products by various methods.
- Staining: Simple staining, Gram staining, Acid fast staining, Capsule and spore staining, Geimasas staining — flagella staining
- Culture Media: Preparation of General Media, Preparation of Selective Media, Culturing of Micro Organisms

- Total viable counts of Micro Organisms, Morphological and selective Bio-chemical characterization of some specimen.
- Microbiological analysis of Air, Water and soil.
- Biochemical reactions. Inoculation and sensitivity
- Tests of different bacterias: Staphylococci, Streptococci, Pneumococci, Gonococci, Gram –ve and Gram +ve Bacilli, Acid Fast Bacilli (Mycobacterium Tuberculosis)
- Tests of Parasites and Helminthes

PAPER-III:

COURSE NAME: **PHARMACOGNOSY**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with Pharmacognosy of Carbohydrates, Glycosides, Tannins, Volatile oils, Resins, Alkaloids, Lipids.

To give the knowledge of Methods of preparation of mother tinctures, Allergens and allergenic preparations, Enzymes, Poisonous plants and Antioxidants

COURSE OUTLINE:

INTRODUCTION: Historical development and scope of Pharmacognosy in Pakistan

Terminology

SEPARATION AND ISOLATION OF PLANT CONSTITUENTS:

- Latest techniques used in isolation and separation of plant constituents
- An introduction and basic principle of chromatography and chromatographic techniques; Column chromatography
- Paper chromatography
- Thin Layer chromatography
- Gas chromatography
- High Performance Liquid chromatography
- Ion Exchange chromatography
- Droplet Counter Current chromatography
- Electrophoresis

CARBOHYDRATES:

Introduction, Sucrose and Sucrose containing drugs, Dextrose, Liquid glucose, Fructose, Lactose, Starch, Dextrin, Cellulose and Cellulose Derivatives, Gums and Mucilages

GLYCOSIDES:

Introduction, Classification, Cardioactive glycosides, Anthroquinone glycosides, Saponin glycosides, Isothiocyanate glycosides, Lactone glycosides, Aldehyde glycosides

TANNINS:

Introduction, Classification, Properties and chemical identity tests including detailed study of Hamamelis

VOLATILE OILS (ESSENTIAL OILS):

Introduction, significance, Methods of obtaining volatile oils, Chemistry and classification, Hydrocarbon volatile oils, Alcoholic volatile oils, Aldehydic volatile oils, Ketonic volatile oils, Phenolic volatile oils, Phenolic ether volatile oils, Oxide volatile oils, Ester volatile oils:

RESINS AND RESIN COMBINATION:

Introduction, Resins, Oleoresins, Balsams

ALKALOIDS:

Introduction, Properties, Classification, Function of alkaloids in plants, Methods of extraction of identification tests, Piperidine Alkaloids, Tropane Alkaloids, Quinoline Alkaloids, Isoquinoline Alkaloids, Indole alkaloids, Imidazole alkaloids, Alkaloidal amines,

LIPIDS:

Introduction, study of Fixed Oils, Fats and Related Compounds, Waxes

ENZYMES:

Enzymes obtained from plant source. (phyto-enzymes), Papain Bromelain and Malt Extract, Enzymes obtained from Animal source, Rennin pepsin, Pancreatin and pancrealipase

POISONOUS PLANTS: General introduction of poisonous plants with special reference to Pakistan.

ANTIOXIDANTS:

Cucumber, Amla, Orange, Lemon etc

PREPARATION OF MOTHER TINCTURES from crude drugs for commercial market,

Methods of cultivation, Drying, Storage, Preservation, Packing, Deterioration and adulteration of crude medicine, Evaluation of crude medicine i.e. organoleptic, microscopic, physical, chemical and biological

PAPER-IX:

COURSE NAME: **PHARMACOGNOSY (PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

- Introduction of the entire and broken parts of the plant drugs (Macro and organoleptic characters)
- Microscopic examination of powders and sections of plant drugs.
- Extraction of the active constituents of crude drugs and chemical tests for their identification.
- Isolation and separation of active constituents of crude drugs by paper and thin layer chromatography and column chromatography.
- Study Tour for collection of medicinal plants from various areas of country.

PAPER-IV:

COURSE NAME: **HOMOEOPATHIC PHARMACY**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

- Learning the identification and preparation of Homoeopathic medicines,
- Learning various laboratory methods
- Introduction to vehicles
- The preparation of Homoeopathic medicines,
- Different homoeopathic scales of potentisation and trituration
- Drug administration methods
- Concept of prescription

COURSE OUTLINE:

Introduction,
Homoeopathic Pharmacy its specialty and originality with Homoeopathic Pharmacopoeia

Definitions of some important terms
Scope of Homoeopathic Pharmacy with relation to Organon of Medicine (Aph 264 to 285 Organon of medicine), Materia Medica, National Economy

Synthetic drugs used in potentized form

Weights and Measures including Home Scale (Deci, Centi, Milli)

Homoeopathic Pharmaceutical instruments and appliances

HOMOEOPATHIC REMEDIES:

- Sources of Homoeopathic Remedies
 - Vegetable
 - Animal
 - Mineral
 - Nosodes
 - Sarcodes
- Process of collection
- Identification
- Purification
- Preservation and
- Preservation of Potentised remedies

HOMOEOPATHIC LABORATORY

- Ideal laboratory
- Building, Cleanliness, Sections, Apparatus

VEHICLES:

- Types
- Preparation and uses of vehicles
- Purification of vehicles
- Determination of Proof strength of Alcohol

GENERAL LABORATORY METHODS

- Solutions
- Dilutions
- Decantation
- Precipitation
- Filtration
- Distillation
- Crystallization
- Sublimation
- Percolation
- Decoction

MISCELLANEOUS PROCESSES:

- Efflorescence
- Deliquescence
- Lyophilization

- Elutriation
- Exsiccation
- Ignition, Fusion
- Calcination
- Adsorption
- Evaporation
- Vaporization
- Centrifugation
- Desiccation
- Levigation
- Trituration

METHODS OF PREPARATION OF REMEDIES:

- From Organic and Inorganic Chemicals
- Vegetables
- Animals and animal products
- Disease products
- Hahnemann's classical and modern methods of preparation of remedies including their merits and demerits.

METHODS OF PREPARATION OF

- Mother Tinctures
 - Definition
 - 9 Formulas of Dr. Hahnemann
 - Modern Methods of Preparation of Mother Tinctures
- Solutions
- Potencies and Trituration

ATTENUATION:

- Decimal Scale
- Centesimal Scale
- 50 Millicimal Scale

RADIONIC THEORY and Radionic methods of Homoeopathic remedy preparation

FLEXION POTENCY-METHOD of conversion of trituration into liquid from straight potency

TOPICAL AND TRANSDERMAL DRUG DELIVERY SYSTEM

- Scope
- Lotion
- Liniment
- Glycerol

- Ointment
- Topical gels
- Pastes
- Creams
- Poultice
- Topical tinctures
- Topical powder

ORAL SOLUTIONS

- Syrups
- Elixirs
- Solutions and their preparation
- Dry mixtures for solutions
- Oral rehydrate solutions
- Oral colonic leverage solution
- Syrup Components and preparation
- Elixir, Preparation, medicated and non-medicated
- Powders, Capsules, Tablet Dosage Forms

PRESCRIPTION

- Study of prescription including abbreviations
- Principles and mode of prescription writing and its validity
- Dispensing of Homoeopathic medicines

PHARMACOLOGY:

- Drug Strength
- Homoeopathic Pharmacodynamics
- Dynamic Power
- Medicine
- Posology
- Remedy

BRIEF STUDY OF STANDARDIZATION OF REMIDIES AND VEHICLES

General Knowledge of legislation in relation to Homoeopathic Pharmacy
 Study of Biological/mechanical and/or chemical characteristics of some important drugs substances

QUALITY CONTROL AND ASSURANCE:

PAPER-X:

COURSE NAME: **HOMOEOPATHIC PHARMACY (PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

ESTIMATIONS:

- Estimation of Moisture contents of one drug substance with water bath and by using moisture meter.
- Estimation of purity of ethyl alcohol, distilled water, sugar of milk.
- Estimation of size of globule, its medication, medication of milk sugar and distilled water, Making of doses.

IDENTIFICATION:

- Identification of important Homoeopathic drugs including the brief outline of the methods used for their identification (List attached)
- At least 30 drug substances including 20 from vegetable kingdom and 10 from mineral and chemicals
- Collection of 30 drug substances for herbarium
- Microscopic study of two trituration up to 3x potency

MANUFACTURING:

- Preparation of dispensing and dilute alcohol solutions and dilutions.
- Preparation of mother tinctures of 3 polychrests
- Preparation of Globules
- Preparation of tablets (Micro & Macro)
- Preparation of trituration of 3 crude drugs up to 3x
- Preparation of mother tincture of drugs which do not conform to the D.S.I.
- Preparation of external applications (at least one each)

POTENTISATION:

- Potentisation of 3 mother tinctures up to 3 decimal scale and 3 centesimal scale and 3 fifty millicimal scale

TRITURATIONS:

- Triturations of 3 drugs 6X and their conversion into liquid potencies.

DISPENSING:

- Writing and understanding of prescription
- Dispensing of various homoeopathic drugs including their procedures

LABORATORY METHODS:

Sublimation, Distillation, Decantation, Filtration, Crystallization, Percolation

STUDY TOUR: visit to homoeopathic laboratories to study the manufacturing of remedies at large scale

PAPER-V:

COURSE NAME: **PHILOSOPHY OF HOMOEOPATHY-III**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To understand Homoeopathic concepts compared to different concepts in Medicine

To understand and learn the theory and practice of chronic miasms

To understand theory and practice of different Constitutions, Temperaments, Diathesis, Miasmatic diagnosis, Facial analysis

COURSE OUTLINE:

1. TEXTUAL STUDY OF ORGANON (APHORISM 160-292.)

- Application of Anti-miasmatic remedies
- Re-examination and re-prescribing
- Pathology
- Derangement of Vital force
- General and individual cases of disease
- General and individual properties of drugs
- Subjective symptoms more important
- Topical treatment
- History of disease in human race
- Hahnemann's Doctrine of Chronic Disease

2. SYSTEMATIC STUDY OF MIASMS

PSORA

- Manifestations
- Diseases related to and based on psora
- Anti-Psoric remedies

SYPHILIS

- Manifestations
- Diseases related to syphilis
- Antisyphilitic remedies

SYCOSIS

- Manifestation

- Diseases of Psychosis
- Antisycotic remedies

TUBERCULAR MIASM

- Manifestation
- Diseases of Psychosis
- Antisycotic remedies

3. MIASMATIC COMPLEXES

- Union of Psora and Syphilis (Pseudospora tubercular diathesis) - group of diseases
- Union of Syphilis and Psychosis - group of diseases
- Union of all the three Miasms - group of diseases
- Principles of miasmatic treatment
- Anti-miasmatic remedies

4. OTHER MIASMS:

- Cancer
- AIDS
- Vaccinosus

5. DIFFERENT TYPES OF CONSTITUTIONS:

ERNST KRETSCHNER

- Athletic
- Astheniac
- Dysplastic
- Picnic

VON GRAUVOGL

- Hydrogenoid
- Oxygenoid
- Carbo-nitrogenoid

VANNIER'S & ZISSUS,

- Phosphoric constitution
- Carbonic constitution
- Fluoric constitution

BAZIN:

- Scrofulous
- Gouty
- Syphilitic

6. DIFFERENT TYPES OF TEMPERAMENTS:

- Nervous
- Bilious
- Sanguineous
- Phlegmatic
- Choleric
- Tubercular, etc

7. Different types of diathesis
8. Importance of miasmatic diagnosis
9. In depth study of Homeopathic facial analysis technique
10. Miasmatic and constitutional prescription
11. Miasmatic study from practical and clinical point of view
12. Miasms compared to modern pathology
13. Concept of susceptibility from immunological point of view
14. Concept of idiosyncrasy compared to hypersensitivity

PAPER-VI:

COURSE NAME: **MATERIA MEDICA-II**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines enlisted in course outlines of this course

COURSE OUTLINE:

Study of Homoeopathic remedies, emphasizing the following aspects:

- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (VEGETABLE KINGDOM)

1. Abrotanum
2. Aconitum napellus
3. Aesculus hippocastanum
4. Aethusa cynapium
5. Agaricus muscarius
6. Allium cepa
7. Aloe socotrina
8. Anacardium
9. Arnica Montana
10. Baptisia tinctoria
11. Belladonna
12. Berberis vulgaris
13. Bryonia alba
14. Cactus grandiflorus
15. Calendula officinalis
16. Cannabis indica
17. Capsicum annum
18. Carbo vegetabilis
19. Carduus marianus
20. Chamomilla
21. Cicuta virosa
22. Cimicifuga racemosa
23. Cina
24. Cinchona officinalis
25. Cocculus indicus
26. Coffea cruda
27. Colchicum autumnale
28. Colocynthis
29. Conium
30. Crataegus oxyacantha
31. Digitalis purpurea
32. Dioscorea villosa
33. Drosera
34. Dulcamara
35. Euphrasia officinalis
36. Gelsemium sempervirens
37. Helleborus nigra
38. Hydrastis
39. Hyoscyamus
40. Hypericum
41. Ignatia
42. Ipecacuanha
43. Kalmia latifolia
44. Ledum palustre
45. Lilium tigrinum
46. Lycopodium clavatum
47. Mezerium
48. Nux vomica
49. Opium (papaver somniferum)
50. Phytolacca decandra
51. Podophyllum
52. Pulsatilla
53. Rhus tox
54. Ruta graveolens
55. Sanguinaria canadensis
56. Spigelia anthelmia
57. Staphysagria
58. Stramonium
59. Thuja occidentalis
60. Veratrum album

PAPER-XI:

COURSE NAME: **MATERIA MEDICA-II
(PRACTICAL/VIVA-VOCE)**

TOTAL MARKS: **100**

COURSE OUTLINE:

Viva-Voce and practical emphasizing chiefly upon the comparative study of the remedies included in this year.

BHMS FOURTH PROFESSIONAL YEAR

NOTE:

A group of students (Comprised of five to six) will be given a research project in the beginning of Fourth or Final Professional years comprising on any one of the subjects of Homeopathic Philosophy, Homeopathic Materia Medica, Homeopathic Therapeutics and Case Taking & Repertorization.

The students have to submit the report of the project at the end of Final Professional year.

The project report will be compulsory and of 50 marks. The project report will be evaluated along with practical.

PAPER-I:

COURSE NAME: **GYNECOLOGY AND OBSTETRICS**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with theory and practice of various gynecological disorders

To understand and learn

- General embryology
- Normal and abnormal pregnancy
- Normal and abnormal labor
- Normal and abnormal puerperium
- Obstetrical procedures and operations:
- Newborn and its disorders:

COURSE OUTLINE:

GYNAECOLOGY:

ANATOMY:

- Detailed description of genital organs and breast anatomy
- Development of female genital organs

PHYSIOLOGY:

- Puberty and adolescent
- Menopause and menstrual cycle
- Ovulation and its clinical importance
- Development of secondary sexual characteristic

DIAGNOSIS

- History taking
- Past history
- Present complains and queries

PATIENT EXAMINATION

- Position of examination
- General examination
- Pelvic examination
- Examination of external genital organs
- Internal examination of genital organs (virginal, cervix) and investigation
- Abdominal examination and differential diagnosis of pregnancy
- Minor gynecological operative procedures

HORMONES:

- Description of different hormones
- Hormone replacement therapy (HRT)

CHANGES IN MENSTRUAL CYCLE:

- Menstrual abnormalities
- Amenorrhea
- Hypomenorrhoea
- Dysmenorrhoea
- Oligomenorrhoea
- Polymenorrhoea
- Dysfunctional uterine bleeding
- Postmenopausal bleeding

VULVAL DISORDERS:

- Inflammation (primary and secondary)
- Pruritus
- Vulval abscess
- Tumors of vulva
- Vulvae lesions

VAGINAL DISORDERS:

- Leucorrhoea (vaginal discharge)
- Inflammation of vagina (gonorrheal tuberculosis and syphilitic and cystic)
- Abscess of vagina
- Tumor of vagina
- Vesico-vaginal fistula and recto-vaginal fistula
- Cystocele rectocele (genital prolapse)

- Vaginitis

DISEASES OF UTERUS:

- Endometritis
- Acute and the chronic erosion
- Tumor of the uterus
- Fibroids
- Adenoma
- Cancer

DISEASES OF CERVIX:

- Inflammation
- Tumors

DISEASES OF FALLOPIAN TUBES:

- Salpingitis
- Acute and chronic abscess of fallopian tube
- Tumors of fallopian tube

DISEASES OF OVARIES:

- Oophoritis (acute and chronic)
- Abscess
- Tumors
- Cysts of ovaries

DISEASES OF URETHRA

- Retention of urine
- Cystitis (acute and chronic)
- Stricture

DISEASES OF MAMMARY GLANDS:

- Brief anatomy and physiology of mammary gland
- Diseases of mammary gland

SEXUALLY TRANSMITTED DISEASES:

- BACTERIAL
- Gonorrhea
- Syphilis
- Tuberculosis
- VIRAL
- AIDS

INFERTILITY: Sites, causes, latest investigations, diagnosis and treatment

ECTOPIC PREGNANCY: Sites pathology differential diagnosis management treatment

POPULATION PLANNING AND CONTRACEPTION: Indication contraindication methods complications

GENITAL TRACT INFECTION: Infection of upper genital tract infections of lower genital tract genital tuberculosis

DISPLACEMENT OF UTERUS: Prolapsed retroversion inversion causes diagnosis management and treatment

GESTATIONAL TROPHOBLASTIC DISORDERS: Hydated form mole trophoblastic tumors

MISCELLANEOUS GYNECOLOGICAL DISORDERS:

- Dysparyunia
- Dysmenorrhoea
- Backache
- Pelvic diseases
- Hysteria
- leukoplakia
- Pelvic floor injuries

HIRSUTISM AND INTERSEXUALITY: Problems of marriage and sex

COMMON GYNECOLOGICAL OPERATIONS AND INSTRUMENTS: Preoperative preparations role of ultra sonography in gynecology

POST OPERATIVE COMPLICATIONS AND ITS MANAGEMENT

OBSTETRICS:

- Introduction
- Obstetrical history taking and examination
- Conception
- Implantation
- Formation of zygote
- Menstrual cycle and events of cycle including hormonal influence
- Placenta structure functions development and abnormalities
- Amnion and liquor Amnii and its role
- Chorion
- Umbilical cord deciduas and its functions

FOETUS:

- Size

- Fetal circulation
- Diameter, fetal and obstetrical
- Examination
- Bony pelvic axis
- Pelvic abnormalities
- Fetal monitoring

NORMAL PREGNANCY:

- Clinical signs and symptoms of pregnancy
- Diagnosis of pregnancy
- Duration of pregnancy
- Hyper emesis gravidum
- Physiological maternal changes during pregnancy
- Antenatal care and fetal examination methods
- Advice during pregnancy
- Harmful drug effect

ABNORMAL PREGNANCY:

- Early pregnancy loss and its management (abortion)
- Pregnancy with fibroids
- Ovarian cyst and prolapsed placental abnormalities
- Umbilical cord abnormalities
- Antepratum hemorrhage
- Placental abruption types, diagnosis management and treatment
- Placenta praevia, types, diagnosis management and treatment
- Polyhydroamnia and oligihydroamnia
- Hypertensive disorders during pregnancy
- Essential hypertension
- Pre eclampsia, Causes diagnosis prevention management and treatment
- Eclampsia stages and management
- Renal diseases during pregnancy
- Infections during pregnancy
- Pregnancy with jaundice
- Pyrexia in pregnancy
- Intrauterine fetal death
- Intrauterine growth retardation and its management
- Prematurity post maturity
- Multiple gestations

NORMAL LABOUR:

- Physiology of labour
- Satges and onset of labour

- Uterine contraction sign and symptoms of parturition
- Conduction of normal delivery complete description
- Stages of labor management of 1st 2nd and 3rd stage of labor
- Mechanism of labour
- Analgesia during labour
- Oxytotic drugs

ABNORMAL LABOUR:

- Prolong labour and its assessment
- Types of prolong labour and management
- Fetal malpresentation, causes, types, mechanism, diagnosis, management and treatment. Occipito posterior position
- Deep transverse arrest
- Breech presentation
- Brow presentation
- Face presentation
- Shoulder presentation
- Cord prolapsed
- Unstable lie/transverse lie
- Compound presentation
- Cephalopelvic, disproportion
- Obstructed labour and premature rupture of membrane
- Post partum hemorrhage its types causes clinical finding management and treatment
- Post partum pituitary necrosis

NORMAL PUERPERIUM:

- Duration, management of puerperium
- Lochia
- Postnatal checkup
- Baby examination
- Immediate care to baby
- Normal progress of new born
- Infant feeding
- Merits and demerits of breast feeding

ABNORMAL PUERPERIUM:

- Puerperal pyrexia
- Genital tract infection
- Urinary tract infection
- Breast disorders in details
- Homeostatic disorders

OBSTETRICAL PROCEDURES AND OPERATIONS:

- Introduction of labor
- Types process and indication of episiotomy
- Forceps and vacuum extractor operation
- Caesarean section (operation delivery)
- Indication procedure and management role of ultra sound in obstetrics
- Vital statistics

NEWBORN AND ITS DISORDERS:

- Examination and care of newborn
- Asphyxia Neonatorum
- Birth injuries
- Icterus Neonatorum
- Hemorrhagic disease
- Evaluation of newborn
- Resuscitation
- Low birth weight
- Congenital malformation
- RH incompatibility
- Thalasemia major, Thalasemia minor
- Minor problems of new born
- Fetal congenital abnormalities

PAPER-XIII:

COURSE NAME: **GYNECOLOGY AND OBSTETRICS (PRACTICAL)**

TOTAL MARKS: **100**

COURSE OUTLINE:

Students should examine out door and indoor patients, take history and to get complete information about diagnosis and treatment, all the instruments issued in gynecological examination should be recognized and their uses known, conduction of gynecological tests.

PAPER-II:

COURSE NAME: **MATERIA MEDICA-III**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines enlisted in course outlines of this course

COURSE OUTLINE:

Study of Homoeopathic remedies, emphasizing the following aspects:

- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (MINERALS)

ACIDS

1. Acidum Muriaticum
2. Acidum Nitricum
3. Acidum Phosphoricum

ANTIMONY

1. Antimonium Crudum
2. Antimonium Tartaricum

ALUMINIUM

1. Alumen

AMMONIUM

1. Ammonium Carb

ARSENIC

1. Arsenicum Album

BARIUM

1. Baryta Carb

BISMUTH

1. Bismuthum Metallicum

BORAX

1. Borax

BROMINE

1. Bromium

CADMIUM

1. Cadmium Sulph

CALCIUM

1. Calcareo Carbonica
2. Calcareo Flouricum
3. Calcareo Pophosphoricum
4. Calcareo Sulphoricu

CARBON

1. Graphites

COPPER

1. Cuprum Metallicum

GOLD

1. Aurum Metallicum

IODINE

1. Iodium

IRON

1. Ferrum Metallicum
2. Ferrum Phosphoricum

MAGNESIUM

1. Magnesia Carbonica
2. Magnesia Muriatica

MERCURY

1. Mercurius Corrosivus
2. Mercurius Dulcis

NITROGLYCERINE

1. Glonoinum

PHOSPHORUS

1. Phosphorus

PLATINUM

1. Platinum Metallicum

PLUMBUM

1. Plumbum Metallicum

POTASIIUM

1. Kali Bichromicum
2. Kali Bromatum
3. Kali Carbonicum
4. Kali Iodide
5. Kali Muriaticum

RADIUM

1. Radium Bromatum

SELENIUM

1. Selenium Metallicum

SILICEA

1. Silicea

SILVER

1. Argentum Metallicum

SODIUM

1. Natrum Carbonicum
2. Natrum Muriaticum
3. Natrum Phosphoricum
4. Natrum Sulph

STANNUM

1. Stannum Metallicum

SULPHUR

1. Hepar Sulph
- 2.

TITANIUM

1. Titanium Metallicum

VANADIUM

1. Vanadium Metallicum

ZINC

Zincum Metallicum

PAPER-IX:

COURSE NAME: **MATERIA MEDICA-III (PRACTICAL/VIVA-VOCE)**

TOTAL MARKS: **50**

COURSE OUTLINE:

Viva-Voce and practical emphasizing chiefly upon the comparative study of the remedies included in this year.

PAPER-III:

COURSE NAME: **OPHTHALMOLOGY AND E.N.T.**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with theory and practice of diseases of Eye, Ear, Nose and Throat

COURSE OUTLINE:

EYE:

Anatomy and Physiology of the Eye Ball and Orbit

DISEASES OF THE EYE:

LIDS; Anatomy, Classification of lid disease, Blepharitis, Stye, Chalazion, Trichiasis, Entropion, Ectropion, Symblepharon, Ptosis, Tumours, Herpes Zoster.

LACHRYMAL APPARATUS; Anatomy, Composition circulation and function of tear film, Dry eye, Excessive watering (Epiphora) Dacryocystitis (acute and chronic)

ORBIT; Orbital cellulitis, Proptosis, Exophthalmos, Enophthalmos, Tumours

CONJUNCTIVA; Anatomy, Classification of conjunctival disease, Conjunctivitis, (Viral, Bacterial and Allergic), Trachoma, Pinguecula, Pterygium, Ophthalmia neonatorum

CORNEA; Anatomy, Classification of corneal diseases, Corneal ulcers, Keratoconus, Corneal opacities, D/D Keratoplasty

SECLERA; Anatomy, Episcleritis, Scleritis

UVEAL TRACT; Anatomy, Classification of uveal tract disease, Uveitis, Panophthalmitis, D/D of red eye,

LENS; Anatomy, Cataract,

VITREOUS; Anatomy, Blood in vitreous, Glaucoma; Physiology of aqueous formation and circulation, Maintenance of normal intraocular pressure

RETINA; Anatomy, Classification of retinal diseases, Retinal detachments and degeneration, Diabetic retinopathy, Hypertensive

retinopathy, Occlusion of retinal artery, Occlusion of retinal vein, Retinoblastoma, macular degeneration

OPTIC NERVE; Papilloedema, Optic Neuritis, Opilitis, Acute Retrobulber neuritis, Toxic ambyopia, Optic atrophy, hemianopias

INJURIES: Extraocular foreign bodies, Blunt injuries, perforating injuries with intraocular foreign bodies, injury due to burns and chemicals.

SQUINT: Definition and Classification

PUPIL: Anatomy, Pupillary pathways, Significance of pupillary size and reaction in diseases

OCCULAR manifestation of Vitamin A, Deficiency, and its management

ERRORS OF REFRACTION: Optical system of normal eye, Myopia, Hypermetropia, Stigmatism, Presbyopia, Aphakia, astigmatism

EAR

Diseases of the Ear: Applied anatomy and physiology, Symptoms, Signs and investigations of ear, Congenital disorders, Ear ache, Discharge from the ear, Otitis externa, Otitis media, Deafness sensory, neural and conductive, Tinnitus, Vertigo, Facial palsy, Tumors of ear

NOSE AND PARA NASAL AIR SINUSES

Diseases of Nose: Applied anatomy and physiology, Congenital disorders, Symptoms, Signs, and investigations of Nasal and Sinus diseases, Nasal septal disorders, Nasal trauma, Epistaxis, Rhinitis, Nasal polyposis, Sinusitis, Headache, Boil of the nose, Cavernous sinus thrombosis, Foreign body in the nose, Rhinolith and Peenosh, Vestibulitis. Hypertrophy

MOUTH AND SALIVARY GLANDS

Diseases of Mouth: Applied anatomy and physiology, Congenital disorders, Dental caries and periodontal diseases, Stomatitis, Ulcers, Candidiasis, Oral manifestation of systemic disease, Premalignant conditions of oral mucosa, Leukoplakia, Erythroplakia, Cancer of oral cavity, Infection of salivary glands, Stone in the salivary glands, Tumor of salivary glands, Ranula.

THROAT

Diseases of Throat: Applied anatomy and physiology, Congenital abnormalities, Symptoms, Signs and investigation of throat diseases, Pharyngitis, Tonsillitis, Quinsy, Adenoiditis, Dysphagia, Dysphonea,

Tumors of esophagus and pharynx, Laryngitis, Vocal nodule, Recurrent laryngeal nerve palsy, Vocal cord paralysis, Epiglottitis, Laryngo tracheo bronchitis, Foreign body in the larynx, Thyroid disease, Snoring, Indication of tracheotomy and tracheotomy, Lump in the neck, Mediastinal tumors compressing larynx, Retropharyngeal abscess, Diphtheria

PAPER-X:

COURSE NAME: **OPHTHALMOLOGY AND E.N.T (CLINICAL)**

TOTAL MARKS: **50**

COURSE OUTLINE:

EYE:

- History taking
- Simple examination with torch
- Visual acuity testing
- Visual field testing
- Regurgitation test
- Measurement of intraocular pressure (digital, tonometry)
- Everson of upper eye lid
- Dressing of corneal ulcer and post operative dressing
- Identification of lenses and their uses
- Identification of lenses and their uses
- Theoretical principal of retinoscopy
- Ophthalmoscopy practical ability of direct, theoretical principal of indirect, Use of slit lamp

ENT:

- History taking
- Examination of external ear, throat, sinuses and general examination
- Use of otoscope and ear speculums
- Use of tuning fork (Webbers test, rinnes test and ABC test)
- Use of nasal speculum
- Use of tongue depressor
- Examination of naso pharynx
- Transillumination test for paranasal air sinuses
- Indirect laryngoscopy
- Introduction to instruments used in ENT examination and operation

PAPER-IV:

COURSE NAME: **PSYCHOLOGY AND PSYCHIATRY**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with subject of Psychology and Psychiatry

COURSE OUTLINE:

PSYCHOLOGY

INTRODUCTION

- Definition
- Psychology as behavioral science
- Scope
- Roots of modern Psychology

GROWTH AND DEVELOPMENT:

- Infancy and childhood
- Stages of cognitive, moral reasoning development
- Erickson's Psycho-social developmental stages
- Personality development in early childhood

MOTIVATION AND EMOTION:

- Basic motives
- Biological and Psychological
- Instinctual behavior, Theories about it
- Emotional development
- Infancy to adult years
-

PERSONALITY:

- Definition
- Characteristics of Personality
- Theories about personality
-

CONSCIOUSNESS,

- Sleep and Dreams
- Stages of consciousness
- Psychoanalytic aspect

LEARNING AND MEMORY:

- Classical conditioning
- Operant conditioning
- Other types of learning

STRESS:

- Definition, types
- Reaction to stress

INTELLIGENCE:

- Definition
- Intelligence assessment test

PSYCHIATRY

Classification of Psychiatric Disorder (Brief Review)

Psychiatric Treatment Modulates, With Objectives

PSYCHIATRIC DISORDERS Symptoms, Etiology:

- Delusions
- Illusions
- Neurotic disorders
- Generalized Anxiety disorder
- Phobia
- Hysteria
- Mood disorders
- Depression
- Mania
- Psychotic disorders
- Schizophrenia
- Psychosomatic disorders
- Organic disorders
- Delirium
- Dementia

PAPER-V:

COURSE NAME: **FORENSIC MEDICINE AND TOXICOLOGY**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To acquaint the students with subject of Forensic Medicine

To acquaint students with subject of toxicology and legal issues related to forensic medicine and toxicology

COURSE OUTLINE:

FORENSIC MEDICINE:

- Introduction
- Forensic Medicine (Definition)
- Medical Jurisprudence
- Courts of Pakistan and their Powers. Legal procedures
- Inquest
- Evidence and type of evidence
- Dying declaration and dying deposition
- Physician in the witness box
- Medical Ethics
- Privileges and Duties of Medical Practitioners
- Physician-Patient relationship
- Legal aspects of medical practice, consent and negligence

PERSONAL IDENTIFICATION

Students should be able to describe:

- Parameters of personal identity; methods of identifying living, dead, decomposed, mutilated and burnt bodies, and skeletal and fragmentary remains; Using special techniques (Dentistry: Radiology, Neutron Activation Analysis etc.), and objective methods of identification (Osteometry, Dactyloscopy, DNA Technique, Super imposition photography etc.).
- Methods of determination of age, sex and race by various methods with their medico- legal aspects.
- Methods to trace evidence, Locard's Principle of exchange and its medico- legal significance.

THANATOLOGY:

- Definition
- Stages of death
- Signs of death
- Saponification
- Mummification
- Cadaveric spasm
- Types of death
- Syncope
- Coma
- Deaths from Asphyxia
- Sudden death; causes, Accidental, Suicidal, Homicidal

- Death due to starvation, Heat, Cold

TRAUMATOLOGY:

- Mechanical injuries: the student should be able to describe mechanism of wound production, classification of wounds produced by conventional weapons and their medico legal aspect
- Firearms
- Ammunition
- Classification
- Nomenclature
- Wound ballistics
- Medico legal aspects

BURN AND SCALD:

- Definition
- Various systems of classification
- Types Thermal, Chemical, and Electrical injuries
- Ante Mortem and Post Mortem burn
- Causes of death
- Medico legal aspects

ASPHYXIA

Students should be able to:

Define, Classify, causes of, and detect the Anatomical, Physiological, Biochemical and Pathological signs of violent death; and of Mechanical, chemical and environmental asphyxial death and their medico-legal implications.

AUTOPSY AND DEATH CERTIFICATE:

Students should know

- Types, objectives, rules, & techniques, and describe procedure for post-mortem
- Methods for Assessment of Fatal period and post-mortem interval. Post-mortem Artifacts
- Risks & Hazards of Autopsy, and Autopsy Protocol.
- Procedure for selection & reservation, labeling & dispatch of Biological and non-Biological materials for laboratory examination; and should be able to collect relevant samples.
- Exhumation procedures, its value and limitations.
- Legal aspects of death certificate and method to write death certificate

FORENSIC SEXOLOGY:

Student should be able to describe the approach to impotence, determination of virginity, pregnancy and criminal process during

delivery, their medico legal aspects, examination procedures and reporting.

SEXUAL OFFENCES AND RELEVANT SECTIONS OF LAW:

Students should be able to differentiate between natural and unnatural sexual offence and know how to perform a medical examination of victim, collect specific specimen and write a required certification. Student should be able to list common sexual perversions and address their causes.

ABORTION

Definition, Miscarriage, virginity, puberty, Pregnancy, Symptoms
Criminal, procedure, medico legal aspect

Students should be able to determine the relevant section of law, medico legal aspects applicable to miscarriage, examine mother and aborted material and storage of aborted material in proper preservative for examination.

INFANTICIDE:

Definition, reasons of this crime, dead born and still born.

Death of infants due to natural causes and accidents,

Death due to criminal cause, acts of omission and commission.

Student should be able to identify infanticide and criminal and non-accidental violence or abuse to a newborn, infant or child.

FORENSIC PSYCHIATRY:

Students should be able to diagnose mental illness, Distinguish between true and feigned insanity, Advise on procedure of restraint of mentally ill, List limitation of civil and criminal responsibilities of mentally ill.

EXAMINATION OF BIOLOGICAL SPECIMENS:

Students should be able to describe the forensic importance of biological specimens (blood, semen, vomitus, saliva, breath, urine, hair). The method of their collection, preservation, dispatch and the common laboratory test performed.

LAW RELATED TO HOMOEOPATHY & MEDICAL MAN:

Medical ethics including religious aspects, privileges and duties of medical practitioners, Physician-patient relationship, Legal aspects of medical practice, consent, negligence

TOXICOLOGY:

GENERAL PRINCIPLES OF TOXICOLOGY

- Poison, Definition
- Classification, Medico legal classification
- Routes of Administration and Elimination of Poison

- Factors modifying the effects / action of poison
- Diagnosis and Treatment of poisoning, Poison and Crime
- Special; Signs and Symptoms
- Causes of death and Treatment of poisoning by following briefly
- Autopsy techniques with collection, preservation and dispatch of Biological material to analytical laboratory.]
- Handling specimens.
- Preparation and interpretation of chemical examiners reports.

SPECIFIC POISONS

- Corrosive Poisons
- Mineral Acids ----- Sulphuric, Nitric and Hydrochloric Acids, Organic Acids Oxalic, Carbolic and Salicylic Acids
- Alkalis ----- Ammonia, Caustic soda and Potash, Irritant Poisons
- Inorganic ---- Non metallic poisons ---- Phosphorus
- Metallic poisons ---- Arsenic, Antimony, Mercury, and Copper
- Vegetable poisons ---- Caster Oil Seeds, Chitralal, Chitra, Madar,
- Animal Poisons
- Snake poisons ---- Poisonous and Non Poisonous snakes
- Signs and Symptoms of snake poisoning, Treatment
- Poisonous Insects
- Specific Poisons
- Cerebral ---- Dhatura, Belladonna, Atropine, Cocaine, Alcohol, Chloroform, Ether, Chloral Hydrate, Opium, Barbiturate, Bhang
- Spinal ----- Strychnine, Cardiac ----- Digitalis, Aconite
- Others ----- Hydrocyanic Acid, Kerosene Oil, CO₂ Coal Gas.

PAPER-VI:

COURSE NAME: **PEDIATRICS**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To understand various concepts in neonatology and infectious diseases in infants and children

To understand various diseases of infants and children

COURSE OUTLINE:

History Taking and Physical Examination

Growth and Development

Immunization

Nutrition

Protein Energy Malnutrition

NEONATOLOGY:

- Resuscitation of newborn
- Prematurity
- Low Birth weight
- Jaundice in new born
- Neonatal sepsis
- Hypoglycemia
- Hypocalcaemia
- Neonatal Seizures
- Hemorrhagic disease of Newborn
- Tetanus neonatorum
- Respiratory distress in the newborn period

INFECTIOUS DISEASES:

- Diarrhea
- Poliomyelitis
- Diphtheria
- Pertussis
- Pulmonary
- T.B., Measles
- Typhoid Fever
- Hepatitis
- Hepatic Failure
- Rheumatic fever
- Protozoal Infection
- Pica
- Fever of unknown origin

RESPIRATORY SYSTEM: Foreign body inhalation, Bronchiolitis, Group, Acute Epiglottitis, Pneumonia, Bronchial Asthma, Respiratory distress, Pulmonary Tuberculosis, Pleural effusion, Cystic Fibrosis.

C.V.S: Congestive heart failure, Fetal Circulation, Cyanotic Heart Diseases, Tetralogy of Fallots, Transposition, Tricuspid Atresia, Pulmonary Atresia, Truncus Arteriosus, Total anomalous Pulmonary Venous Drainage, Cyanotic” Heart Diseases, VSD, ASD, PDA, Pulmonary Stenosis, Aortic Stenosis, Coarctation.

C.N.S: Epilepsy, Convulsions, Meningitis, Encephalitis, Coma, Mental Retardation, Cerebral Palsy, Guillian – Barre Syndrome, Febrile Fits.

HEMATOLOGY / ONCOLOGY: Anemia, Thalasemia, Disorders of Platelets, G6 PD deficiency, Leukemia, Hodgkin disease and lymphoma.

ENDOCRINE / GENETIC / METABOLIC: Hypothyroidism, Diabetes mellitus, Rickets, Down’s syndrome, Glycogen storage disease, Lipid storage disease.

NEPHROLOGY: Acute glomerulonephritis, nephritic syndrome, acute renal failure, chronic renal failure, U.T.I.

COMMON SKIN DISORDERS IN CHILDREN: Vascular birth marks, Pyoderma, Viral infections, parasitic infestations of skin, Ichthyosis, Lesions characterized by formation of bullae, Atrophic dermatitis, Acne.

PAPER-XI:

COURSE NAME: **PEDIATRICS (CLINICAL)**

TOTAL MARKS: **50**

COURSE OUTLINE:

Pediatrics medicines consisting of detailed history taken (Neonatal and Child examination), with systemic examinations involving nearly all systems of human body regarding positive findings, differential diagnosis, management, final diagnosis, follow-up (Resuscitation), minor medical surgical procedures), and specialized referral for highly specialized management

PAPER-VII:

COURSE NAME: **HOMOEOPATHIC THERAPEUTICS-I**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with various diseases and their Homoeopathic treatment

COURSE OUTLINE:

Introduction to Homoeopathic Therapeutics

SYMPTOMATIC INFLAMMATORY AND INFECTIOUS DISORDERS

- Acute inflammation
- Chronic inflammation
- AIDS
- Chicken pox
- Cholera
- Dengue
- Elephantiasis
- Erysipelas
- Fever, different types
- Gonorrhoea
- Influenza
- Leprosy
- Measles
- Mumps
- Rabies
- Syphilis
- Tuberculosis
- Typhoid fever

SYMPTOMATIC EYE DISORDERS

- Cataract
- Color Blindness

- Hypermetropia
- Keratitis
- Lachrymal Duct Disorders
- Myopia
- Optic Nerve Atrophy
- Photomania
- Post Operative troubles
- Retinal Haemorrhage and Detachment

SYMPTOMATIC E.N.T. DISORDERS

- Adenoiditis
- Boil of the nose
- Deafness sensory, neural and conductive
- Discharge from the ear
- Ear ache
- Epistaxis
- Laryngitis
- Nasal hypertrophy
- Nasal polyposis
- Pharyngitis
- Post operative troubles
- Rhinitis
- Sinusitis

SYMPTOMATIC RESPIRATORY SYSTEM DISORDERS

- Asthma
- Bronchitis
- Bronchiectasis
- Chronic obstructive pulmonary disease (COPD)
- Cold and Coryza
- Emphysema
- Haemoptysis
- Lung cancer
- Pleurisy
- Pneumonia

SYMPTOMATIC DISORDERS OF ENDOCRINE SYSTEM:

- Addison's disease
- Acromegaly
- Cushing Syndrome
- Diabetes Insipidus
- Diabetes Mellitus
- Graves's disease

SYMPTOMATIC NERVOUS AND PSYCHOLOGICAL DISORDERS:

- Anxiety disorder
- Cerebral edema
- Cerebral embolism
- Chorea
- Convulsions
- Delirium
- Dementia
- Encephalitis
- Epilepsy
- Facial paralysis (Bell's palsy)
- Headache
- Hemiplegia
- Hypochondriases
- Hysteria
- Insomnia
- Mania
- Meningitis
- Migraine
- Neurasthenia
- Neuralgia
- Neuritis
- Numbness
- Paralysis
- Paraplegia
- Parkinsonism
- Poliomyelitis

SYMPTOMATIC G.I.T DISORDERS

- Anorexia
- Appendicitis
- Cholera
- Constipation
- Crohn's Disease
- Diarrhea
- Dysentery
- Fissure
- Fistula
- Gastritis
- Gastro Enteritis
- Gastro-esophageal Reflux

SYMPTOMATIC DISORDERS OF LIVER AND EXTRA HEPATIC TISSUES:

- Bacterial and Viral Hepatitis
- Cholelithiasis
- Cholecystitis
- Dropsy (Ascites, Anasarca)
- Hepatic Insufficiency
- Hepatomegaly
- Jaundice
- Liver Abscess
- Liver Cirrhosis

PAPER-XII:

**COURSE NAME: HOMOEOPATHIC THERPEUTICS-I
(PRACTICAL/VIVA)**

TOTAL MARKS: 50

COURSE OUTLINE:

Every student will register 20 different cases in a note book with record of case taking, diagnosis, repertorization and prescription related to conditions enlisted above.

BHMS FINAL YEAR

PAPER-I:

COURSE NAME: CLINICAL METHODS AND DIAGNOSTICS

TOTAL MARKS: 100

SPECIFIC OBJECTIVES OF COURSE:

Aims and Objectives of this module will build on experience and understanding developed in the therapeutic relationship. It will provide a thorough understanding of the functioning examination and assessment of the body systems such as cardiovascular respiratory gastrointestinal and neurological students take training in clinical knowledge examination skills and to provide an integrated approach in understanding the causes and the essential features of the symptoms and signs most commonly seen in clinical practice. This will draw on the skills attained in the human science, clinical science and previous diagnostic skill modules.

The students will achieve an understanding and detailed knowledge of the differential diagnosis of the symptoms and signs related to the following; The cardiovascular system, The respiratory system, The gastrointestinal system, The urinary system, The nervous and musculoskeletal system, Other problems, including weight disorders, temperature changes, psychiatric problems, ear, nose, and throat problems emergency conditions and conditions requiring immediate referral for diagnostic and therapeutic reasons, Additionally in cases where the diagnostic investigations available to herbal practitioners are insufficient to exclude a serious pathology, students will be aware of their urgent responsibility to refer for thorough medical investigations. Examples of such cases include Dysphasia, bleeding per rectum, severe cardiac arrhythmias.

COURSE OUTLINE:

CLINICAL REVIEW: Review of general history, review of examination

CARDIOVASCULAR PROBLEMS: Review of examination of the heart with differentiation of normal heart sounds (S1 and S2) and numbers, Differential diagnosis of chest pain palpitation shortness of breath edema Ascites changes in blood pressure, lower limb pain.

RESPIRATORY PROBLEMS: Review of the examination of the lungs with recognition of bronchial sound, added sounds, wheezing sounds, pulmonary edema, bronchial breathing, and peak flow rate measurement. Differential diagnosis of clubbing, cough, cyanosis, sputum production and Haemoptysis

ABDOMINAL PROBLEMS: Review of examination of the abdomen, Differential diagnosis of abdominal pain, nausea, and vomiting, constipation, diarrhea, GIT bleeding, indigestion

UROGENITAL PROBLEMS: Review of urogenital system and urinalysis, Differential diagnosis of dysuria and frequency, haematuria, polyuria, incontinence

NERVOUS AND MUSCULOSKELETAL PROBLEMS: Review of the examination of the nervous and musculoskeletal system, Differential diagnosis of convulsions, fatigue, headache, facial pain, coma, pins and needles, tremors walking difficulty vertigo, dizziness and blackouts, Assessment of: orientation motor activity/strength, pupil reaction, cranial nerves, ophthalmoscope, peripheral nervous system, central nervous system, tone, power, co-ordination reflexes sensations.

ISCELLANEOUS PROBLEMS: Weight change: anorexia, bulimia, other causes of weight loss and obesity, Pyrexia and hypothermia, Ear, nose and throat problems; hoarseness, sore throat, deafness.

PSYCHIATRIC PROBLEMS: Anxiety, Depression, Suicide

EMERGENCY MEDICINE and Conditions Requiring Immediate Referral: Heart, heart attack, acute left heart failure, Diabetic emergencies, hyper and hypoglycemic coma, status epileptics, Status asthmatics, Meningitis, Fracture of neck of femur, Drug overdoses and poisoning, Other states where immediate referral is required for diagnostic clarification e.g. bleeding per rectum, severe cardiac arrhythmias.

DERMATOLOGY

- Anatomy and physiology of skin, related to Clinical Dermatology
- Infestation
- Scabies
- Pediculosis
- Bacterial and Mycobacterium infections
- Fungal and Viral diseases
- Acne Vulgaris
- Psoriasis and Lichen Planus
- Bullous Disorders
- Pigmentary Disorders
- Disorders of Nails
- Disorders of Hairs
- Sexually Transmitted Diseases
- Leprosy
- Tinea Capitis
- Tinea Inguinal
- Acute and Chronic Eczema
- S.L.E

PAPER-VII:

**COURSE NAME: CLINICAL METHODS & DIAGNOSTICS
(CLINICAL)**

TOTAL MARKS: 50

COURSE OUTLINE:

Clinical medicine consisting of detailed history taking with systemic examination involving nearly all systems of human body regarding

positive findings, differential diagnosis, laboratory and allied diagnostic investigations, final diagnosis, management, specialized referral highly specialized management, prognosis, complications, preventions and follow up.

PROCEDURES:

- Scraping of fungus
- Use of Magnifying Glass.
- Observe skin Biopsy

STUDENTS SHOULD RECOGNIZE

- Leprosy
- Syphilitic Lesions (Chancre, Secondary syphilis, Gumma)
- Tinea (Corporis, Capitis, Inguinal)
- Candida (Oral Skin)
- Scabies
- Lice
- Mosquito bite
- Acute and Chronic Eczema
- Lesions of Small pox, Chicken pox
- Herpes simplex, Herpes Zoster
- S.L.E
- Psoriasis.
- Impetigo Contageosum
- Moluscum Contageosum
- Seborrhea
- Exfoliated Dermatitis
- Skin Neoplasm like Squamous cell Carcinoma, Basal Cell Carcinoma, and Melanoma

PAPER-II:

COURSE NAME: CASE TAKING & REPERTORIZATION

TOTAL MARKS: 100

SPECIFIC OBJECTIVES OF COURSE:

To develop the ability of case taking from a Homoeopathic perspective by young professionals

To make the professionals able to repertorize the case before prescription

COURSE OUTLINE:

CASE TAKING

- The patient's symptoms and history
- History of the development of the symptoms, implication of the patient's Description of his complaints
- The duration of the symptoms
- Modification of symptoms
- The mode of onset
- Eliciting the symptoms
- Recording of symptoms
- Difficult cases
- Taking the acute case
- Difficulties of taking a chronic case
- Recording of a case and usefulness of record keeping
- Arrangements of symptoms
- Totality of symptoms
- Prescribing symptoms
- Uncommon, peculiar and characteristic symptoms
- General and particular symptoms
- Evaluation of symptoms
- "Eliminating" symptoms
- Analysis of the case
- Uncommon and common symptoms
- Gradation and evaluation of symptoms
- Importance of mental symptoms
- Kind and sources of general symptoms
- Concomitant symptoms
- Initial prognostic evaluation
- Case analysis for the beginners
- Case analysis for the advanced prescribers
- Selection of potency
- Single remedy/group remedy prescribing
- The dose
- The remedy reaction
- The follow up interview
- Initial interview for scheduling follow ups
- Format for the follow up visit
- The Homoeopathic aggravation
- Evaluation at one month
- Principal involved in long-term management
- Fundamental principles
- Application in particular patient categories
- Deep miasmatic case
- Incurable cases

- Complicated cases
- Homeopathically disordered cases
- Allopathic disordered or suppressed cases
- Terminal cases

REPERTORIZATION

- Definition
- Constitution of Repertory
- History of Repertories
- Types of Repertories
- Synthesis
- Kent
- Boenninghausen
- Boger
- Willium Boericke
- Gentry's and Punch card Repertories
- Knerr

PAPER-VIII:

COURSE NAME: **CASE TAKING & REPERTORIZATION
(PRACTICAL)**

TOTAL MARKS: **50**

COURSE OUTLINE:

- Demonstration of five cases worked on Boenninghausen Repertory
- Advanced study with cases demonstration based on Kent Repertory
- Demonstration of 10 cases worked on Synthesis Repertory
- Card Repertory with demonstration of 5 cases and advantages of Card Repertories. Theoretical lectures with demonstration.
- Computer Software
- Cara Professional
- SIS
- RADAR
- 5 cases to be cross checked
- Practical demonstration on computer based Kent's Repertory software.

PAPER-III:

COURSE NAME: **MATERIA MEDICA-IV**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

Study of Homoeopathic medicines listed in course outlines of this course

COURSE OUTLINE:

Study of Homoeopathic remedies, emphasizing the following aspects:

- Origin of substance including natural order and species
- Proving era and contributors
- Form and potency used in the process of proving
- Active constituents of Plant Origin Drugs
- Known Pharmacological / Physiological Action of the drug
- Overall drug picture (Schematic)
- Constitution and Temperament
- Miasmatic Background & duration of action
- Clinical importance and its therapeutic use
- Dosage and potency recommended by different physicians
- Relationship and comparative studies with other Homoeopathic remedies

LIST OF THE REMEDIES (NOSODES, SARCODES, IMPONDERABLIA AND OTHERS)

NOSODES

1. Anthracinum
2. Diphtherinum
3. Medorrhinum
4. Psorinum
5. Syphilinum
6. Schirrinum
7. Carcinocin
8. Tuberculinum bovinum
9. Tuberculinum Koch
10. Bacillinum
11. Secale cornutum
12. Ustilago maydis
13. Ambra Grisea
14. Calculus renalis
15. Malaria officinalis
16. Malandrinum
17. Morbillinum
18. Pyrogenum
19. Vaccinonum

20. Variolinum
21. Staphylococcinum
22. Streptococcinum
23. Menigococcinum
24. Influenzinum
25. Hydophobinum
26. Typhoidinum
27. Boletus Laricis
28. Epitheliomine

BOWEL NOSODES

29. Morgan (Bach) - Morgan Pure- Morgan Gaertner
30. Proteus
31. Mutabile
32. Bacillus no.7
33. Gaertner
34. Dysentery-co
35. Syctic-co
36. Faecalis

SARCODES

37. Thyroidinum
38. Adrenaline
39. Pituitarum posterium
40. Cortisone
41. Adrenocorticotrophin
42. Insulin
43. Pepsin
44. Orchitinum
45. Oophorinum
46. Pancreatinum
47. Cholesterinum
48. Fel tauri
49. Vulpis fel
50. Colostrum
51. Mygale
52. Mel Cum Sale

LACS (MILK & MILK PRODUCTS)

53. Lac caninum
54. Lac defloratum
55. Lac felinum:

- 56. Lac vaccini floc
- 57. Lac vaccinum
- 58. Lac vaccinum coagulatum

IMPONDERABILIA

- 59. Luna
- 60. Sol
- 61. Magnetis poli ambo
- 62. Magnetis polus arcticus
- 63. Magnetis polus australis
- 64. X-ray
- 65. Electricitas
- 66. Galvanismus
- 67. Heclæ lava

TAUTOPATHIC OR SYNTHETIC SOURCE

- 68. Aspirin
- 69. Chloramphenicol
- 70. Chlorpromazinum
- 71. Corticotrophin
- 72. Histamine hydrochloride
- 73. Mannitol
- 74. Penicillin

ISODES

- 75. Bioimmunotherapy

PAPER-IX:

COURSE NAME: **MATERIA MEDICA-IV (PRACTICAL/VIVA-VOCE)**

TOTAL MARKS: **50**

COURSE OUTLINE:

Viva-Voce and practical emphasizing chiefly upon the comparative study of the remedies included in this year.

PAPER-IV:

COURSE NAME: **HOMOEOPATHIC THERAPEUTICS-II**

TOTAL MARKS: **100**

SPECIFIC OBJECTIVES OF COURSE:

To introduce the students with various diseases and their Homoeopathic treatment

COURSE OUTLINE:

SYMPTOMATIC SKIN DISORDERS

- Abscess
- Acne
- Alopecia
- Baldness
- Barber's itch
- Blister
- Boil
- Bromidrosis
- Burn and scald
- Carbuncle
- Cellulites
- Cracks of skin
- Dandruff
- Discoloration of the skin
- Eczema
- Hyper hydrosis
- Ichthyosis
- Leukoderma/vitiligo
- Keloid
- Miliaria rubra
- Nettle rash
- Pityriasis Alba
- Pityriasis nigra
- Prickly heat
- Pruritus
- Psoriasis
- Scabies
- Seborrhea

SYMPTOMATIC DISORDERS OF MUSCULOSKELETAL SYSTEM

- Ankylosing spondylitis
- Carpel tunnel syndromes
- Cervical neuralgia
- Gout
- Lumbago

- Osteomalasia
- Polymyositis
- Progressive muscular dystrophy
- Rheumatoid Arthritis
- Sciatica

ALLERGIES: All Types

SYMPTOMATIC BLOOD DISORDERS:

- Anaemias of different kind
- Bleeding Disorders
- Disorders of homeostasis
- Haemorrhage
- Haemorrhagic disorders
- Leukemia

SYMPTOMATIC DISORDERS OF URINARY SYSTEM:

- Acute and Chronic Renal failure
- Cystitis
- Enuresis (nocturnal)
- Haematuria
- Nephritis
- Nephrolithiasis
- Nephrotic Syndrome
- Polycystic kidney
- Renal colic
- Renal insufficiency
- Renal function disturbance
- Stranguary

SYMPTOMATIC CARDIOVASCULAR DISORDERS

- Aneurysm
- Angina pectoris
- Aortic regurgitation
- Aortic Stenosis
- Arrhythmias
- Arterial fibrillation
- Aterio sclerosis
- Atheroma
- Atherosclerosis
- Bradycardia
- Cardiac dilatation
- Cardiac enlargement
- Cardiac thrombosis

- Palpitation
- Pericardial effusion
- Pericarditis
- Rheumatic heart disease

SYMPTOMATIC NEOPLASTIC DISORDERS

- Homeopathic approach to cure of all types of benign and malignant neoplasias or carcinomas with special emphasis on miasmatic and constitutional therapeutics.

SYMPTOMATIC GYNECOLOGICAL AND OBSTETRICAL DISORDERS:

- Abortion
- Complications of labour
- Complications related to pregnancy
- Dysfunctional uterine bleeding
- Dysmenorrhea
- Eclampsia/ Pre-eclampsia
- Endometritis
- Fetal malpositions
- Genital tract infections
- Infertility
- Menstrual abnormalities

SYMPTOMATIC URINOGENITAL DISORDERS OF MALE:

- Benign and Malignant Hyperplasia of Prostate
- Decreased libido
- Epididymitis
- Hypersexuality
- Impotency
- Infertility
- Nocturnal discharge

PAPER-X:

COURSE NAME: **HOMOEOPATHIC THERAPEUTICS-II
(PRACTICAL/VIVA)**

TOTAL MARKS: **50**

COURSE OUTLINE:

Every student will register 20 different cases in a note book with record of case taking, diagnosis, repertorization and prescription related to conditions enlisted above.

PAPER-V:

COURSE NAME: **SURGERY**

TOTAL MARKS: **60**

SPECIFIC OBJECTIVES OF COURSE:

To understand and diagnose surgical diseases

To make professionals able to practice minor surgical procedure

COURSE OUTLINE:

INTRODUCTION OF SURGERY: Basic surgical principles and management.

ESOPHAGUS: Diseases causing esophageal obstruction, congenital atresia of esophagus, Hiatus hernia and types of hiatus hernia. Neoplasia (Benign and Malignant),

DUODENUM AND STOMACH: Hypertrophy pyloric Stenosis of infants: Symptoms and treatment, Peptic Ulcer: Sign and symptoms and treatment form surgical point of view and management of perforated peptic ulcer, Haematemesis and Melena: Causes and management Neoplasia (Benign and Malignant),

LIVER: Trauma, Obstructive jaundice, amoebic liver abscess: Pathology, course, sign, symptoms, and treatment, Hydated disease of the liver. Source of infection, pathology, sign, symptoms, treatment and complication, Tumor of liver: Benign and malignant.

SPLEEN: Rupture of spleen and its treatment, Causes of enlargement of spleen and indications for splenectomy and postoperative complications.

GALL BLADDER AND BILE DUCTS: Investigation of the biliary tract in relation to diagnosis and management, Gall stone, acute obstructive Cholecystitis, acute non obstructive Cholecystitis, chronic Cholecystitis, Stone in the bile ducts and management of biliary obstruction due to stone.

PANCREAS: Acute, relapsing and Chronic Pancreatitis, Pancreatic masses including Neoplasia (Benign and Malignant), Carcinoma of Pancreas.

PERITONEUM: Acute and chronic peritonitis, tuberculous peritonitis.

SMALL AND LARGE INTESTINE: Causes, sign, symptoms, investigations and treatment of Primary mega colon, Ulcerative colitis, Cancer of colon.

INTESTINAL OBSTRUCTION: Acute intestinal obstruction: Dynamic and A dynamic, causes, sign. Symptoms, investigation and treatment, Paralytic ileus: Types, causes sign, symptoms and management.

VERMIFORM APPENDIX: Acute appendicitis and Appendicular mass.

RECTUM: Congenital Abnormalities: Imperforate anus, Proctitis, Cancer of rectum: Causes, classification, sign, symptoms investigations and treatment.

ANUS AND ANAL CANAL: Pilonidal Sinus, Anal fissure, Hemorrhoids, Fistula, Anorectic Abscess.

HERNIA COMPLETE: Inguinal hernia, femoral hernia, Umbilical hernia and Para umbilical hernia, Incisional hernia.

UROGENITAL SYSTEM: Urinary symptoms and investigations, Anuria, Prerenal, renal and post renal anuria. Hydronephrosis pyonephrosis renal calculus and ureteric calculus, Perinephric abscess, Neoplasms of kidney

URINAY BLADDER: Retention of urine Etiology sign and symptoms and treatment, Incontinence of urine. Types, causes, and treatment, Vesicle calculus definition, Causes sign symptoms and treatment, Cancer of urinary bladder. Benign prostate hypertrophy, carcinoma of prostate, acute and chronic Prostatitis

URETHRA AND PENIS: Urethritis a urethral stricture.

TESTIS AND SACROTUM: Imperfect descent of testis, Ectopic testis, Torsion of testis, Vericocele causes signs and symptoms investigation and treatment, Hydrocele types etiology diagnosis and treatment, Epididymitis Orchitis.

BREAST: Retraction of nipples and abnormal discharge from nipples, Acute and sub-acute inflammation of the breast, indication for operative management, Tumor of the breast and its surgical management.

LUNGS: Cold abscess, Empyema: acute, subacute and chronic, Pneumothorax, Hemothorax, pleural effusion, Foreign body in trachea and bronchus, Tumor of bronchi and lung, Lung abscess, Post operative pulmonary complication, Tracheotomy: indication and method of tracheotomy.

THYROID GLAND: Hypothyroidism, Goiter: its classification, simple goiter and toxic goiter, Neoplasm of the thyroid gland.

CARDIOVASCULAR: Deep vein thrombosis: Prevention, detection and treatment, Varicose vein: Examination, Sign, Symptoms, treatment and complication. Congenital disease of heart
HEAD: Head injury and its management.

BURN: Depth and degree of burns, Estimate of extent of burns, Laboratory examination of a burn patient, sign and symptoms of fluid and electrolytes deficiency in burn patient, oral replacement therapy of a burn patient.

ANESTHESIA: Local, regional and general anesthesia.

GENERAL PRINCIPLES OF ORTHOPEDICS: Definition, fracture, dislocation and sub-luxation displacement, Delayed union of fracture, Factor influencing time for fracture healing, Causes of delayed union of fracture, Stable and unstable fracture, Complication of fracture, Immediate, early and late complication, Special types of fracture,

PAPER-XI:

COURSE NAME: **SURGERY (PRACTICAL)**

TOTAL MARKS: **40**

COURSE OUTLINE:

INTRODUCTION

- Introduction of surgery, case taking and examination of patients
- Complete information about surgical instruments, sterilization
- Pre-operative and post operative management of patients
- Anesthetic drugs their uses advantages and disadvantages
- Preoperative preparation of surgeon
- Complete information about towels and linens etc.
- Suture material methods of stitching incision and their uses

SYSTEMIC EXAMINATION

- Examination of swelling or a tumor
- Examination of an ulcer
- Examination of sinus or fistula
- Examination of thyroid glands
- Examination of the breast acute abdomen abdominal lump rectum anal canal and inguino-scrotal swelling

PROCEDURES

Clinical Surgery: Trauma and emergency, Wound healing factors effecting wound healing, Types of wounds and their closure/stitching, Management of severely injured, Examination and management of external bleeding, Control of pain,

EMERGENCY ROOM WORK: Identification of patients, History of patients, Physical examination, Laboratory examination.

MINOR SURGICAL PROCEDURES: Abscess drainage, Toe nail excision, Venous cut down, Circumcision, Stitching of wounds

PAPER-VI:

COURSE NAME: **PREVENTIVE AND COMMUNITY MEDICINE**

TOTAL MARKS: **100**

COURSE OUTLINE:

1. Concept of Health & Disease

- Concept of health,
- Definition of health (Dimensions, physical, mental, social and spiritual)
- Spectrum of health,
- Determinants of health
- Responsibility for health
- Indicators of health
- Concept of disease
- Concept of causation
- Ecological triad, (agent, host & environmental factors)
- Spectrum of disease
- Iceberg phenomenon
- Natural history of disease
- Levels of prevention
- Disease elimination and eradication
- Disease surveillance

2. Introduction to Public Health and Health Systems in Pakistan

- Background and Concepts:
- Definitions and concepts in Public Health.
- Development of Public Health in Pakistan

- Economics and Health
- Health policy and planning in Pakistan.
- Health for all; background, concepts and progress.
- Primary Health Care: Concepts and progress.
- The National Disease Control programs; policies, strategies and operations.
- Health System in Pakistan
- The role of Federal and Provincial Governments in Health Care
- The District Health System, in the context of devolution.
- The Physician as a manager:
- Functions of manager, management of material, human and financial resources.
- Leadership and motivation.
- Partners in Health: The public and private sector.
- Non- governmental Organizations and International Agencies. Resources for health.
- Community Mobilization.
- Role of Homeopathy in Public Health.

3. Epidemiology and disease control

- General Epidemiology and Research methodology.
- Background and concepts, uses. Basic measurements in epidemiology (morbidity, Mortality, disability and fatality).
- Epidemiological methods (descriptive, analytic and experimental).
- Epidemiological transition.
- Association and causation.
- Investigation of an outbreak or an epidemic.
- Screening for disease.
- Community diagnosis.
- Research and survey methodology.
- Introduction to Qualitative research methodology.
- Prevention and control of Infectious diseases:
- Infection, contamination, pollution, infestation
- Infectious disease, communicable disease, contagious disease
- Host, Immune and susceptible persons
- Sporadic, Endemic, Epidemic, Pandemic
- Epizootic, Exotic, Zoonosis
- Contact, fomites, Carriers, Insect Vectors, Reservoir of infection
- Incubation period, Infective period, Generation time
- Cross infection, Nosocomial infection, Opportunistic infections
- Iatrogenic (Physician induced) disorders
- Surveillance control, Eradication, Elimination
- Dynamics of infections, Disease Transmission.

- Reservoir and source of infection,
- Escape of organism,
- Modes of transmission,
- Entry into the body,
- Susceptible host,
- Immunity (different types of immunity and immunization)
- Control of infection:
 - Controlling the reservoir-notification, early diagnosis treatment, isolation, quarantine, disinfections.
 - Interruption of transmission.
 - The susceptible host active & passive immunization,
 - Combined. Chemoprophylaxis,
 - Non-specific measures,
 - Homeopathic immunization
 - Health advice to travelers.
 - National case management guidelines.
- Epidemiology, control and prevention of infectious diseases of Public Health importance.
 1. Diseases transmitted through inhalation.
 2. Diseases transmitted through Faeco -oral route.
 3. Arthropod borne diseases.
 4. Diseases of animals conveyed to man.
 5. Diseases due to direct contact.
- Epidemiology, control and prevention of non- infectious diseases of Public Health importance
 1. Hypertension.
 2. Coronary heart disease.
 3. Cancers.
 4. Injuries.
 5. Diabetes mellitus.
 6. Obesity.
 7. Acute Rheumatic fever and heart disease.

5. Demography and Population dynamics

- A. Concept, demographic principles and demographic processes
- B. Census, definition, methodology, types
- C. Determinants of fertility, mortality
- D. Population Pyramid and its interpretation
- E. Demographic Transition, Demographic Trap and its public health importance
- F. Demographic and social implication of high population growth
- G. Social Mobilization
- H. Urbanization

6. Food and Nutrition

- A. Concepts (Nutrition, Nutrient, Food, Diet).
 - Food groups and their functions
 - Role of fiber in diet
 - Balanced Diet
- B. Malnutrition at all stages of life; its types, causes and prevention.
Common nutritional problems of public health importance and their prevention and control
- C. Dietary requirements of normal human being at different stages of life
- D. Food hygiene, Pasteurization, fortification, additives & adulteration and preservation
- E. Food Poisoning
- F. Assessment of nutritional status of a Community

7. Reproductive and Child Health

- A. Safe mother- hood and its components. (Ante- natal, Post-natal, Family Planning & Emergency Obstetric Care)
- B. Maternal mortality, causes and prevention
- C. Infant care: Growth and development. Breast feeding, common causes of morbidity and mortality, the ir prevention and control
- D. Child Care: Health promotion strategies, common ailments, home accidents, child mortality prevention. Strategic approaches of Integrated Management of Childhood Illness (IMCI)
- E. Adolescent health
- F. Reproductive tract infections: guidelines for management of STD's

8. Health of school age children

- A. Role of teachers and role of doctor in maintenance of health
- B. Procedures for determining health status of school age children
- C. Common health problems of school children

9. Environmental Health Sciences

- A. Air: Composition of air causes of Air pollution, purification of Air. Diseases caused by impurities in air and their prevention
- B. Water: Sources of Water. DAILY water requirement. Water pollution, its causes and prevention. Purification of Water. Water quality Standards. Diseases due to polluted water

- C. Waste disposal: Contents, hazards and safety measures for solid and liquid; Domestic, Industrial and Hospital waste
- D. Climate: Climate and weather. Global environmental concerns (Green house effect, depletion of ozone layer, Acid rains). Effect of extremes of temperature, humidity, atmospheric pressure on human health and their prevention
- E. Radiation: Sources, types, causes, hazards and prevention
- F. Healthful housing. Urban and rural slums. Refugee camps and hostels
- G. Noise: Definition, causes, acceptance level, hazards and control

10. Occupational Health

- A. Concepts, of occupational health, occupational medicine and occupational hygiene. Homeopathy in occupational medicine. Ergonomics and its importance.
- B. Occupational hazards. Principles of control
- C. General principles of occupational disease prevention
- D. Organization of occupational health services
- E. Health Insurance and Social Security Schemes

11. Arthropods and their public health importance

- A. Common arthropod borne diseases
- B. Control of arthropods of medical importance
- C. Insecticides and their public health importance
- D. Homeopathy and arthropod control

12. Prevention and control of parasitic diseases of public health importance

13. Snake Bites:

Personal protection and management

14. Mental Health

- A. Concept. Common mental health problems, their causes, prevention and control.
- B. Juvenile delinquency.

15. Behavioral Sciences and lifestyle

- A. Concept, attitudes, health and illness behavior
- B. Drug abuse, addiction and smoking
- C. Child abuse and child labor
- D. Role of physical exercise in health and disease

16. Information, Education and Communication (IEC)

- A. Concept. Aims and objectives
- B. Approaches used in public health
- C. Contents, principles and stages of health education
- D. Communication methods, barriers and Skills in health education
- E. Planning, organizing and evaluating a health education program
- F. Social Marketing

17. Disaster

- A. Definition, Classification, (Natural disasters like earthquakes, floods)
- B. Epidemic of communicable diseases
- C. Man Made Disasters
- D. Accidents
- E. Thermo- nuclear warfare; causes and prevention
- F. Magnitude and effects of disaster and Public Health consequences
- G. Disaster: preparedness and management.

18. Medical Ethics:

- A. Background Concepts and components
- B. National recommended guidelines
- C. Code of Medical Ethics

PAPER-XII:

COURSE NAME: PRACTICAL AND COMMUNITY BASED TRAINING

TOTAL MARKS: 100

COURSE OUTLINE:

Student should have practical experience in questionnaire development, data collection, compilation, presentation, analysis and report writing.

FIELD VISITS

- Visit to Basic Health Unit
- Visit to Rural Health Center
- Visit to an NGO
- Visit to a primary school to assess the nutritional status of school children

- Visit to a hospital to see the hospital waste disposal.
- Visit to an industry
- Visit to a physical/mental/social rehabilitation centre.
- Visit to MCH/Reproductive Health Centre to observe the organization, and function of the centre and to demonstrate counseling skills in one of the following.
 - a) Nutritional counseling for children, pregnant and lactating women.
 - b) Antenatal Care
 - c) Family planning services
 - d) Immunization, others

SKILLS DEVELOPMENT LAB

- Water purification at domestic level.
- Contraceptives
- Vaccination including the cold chain
- Oral Rehydration solution

RECOMMENDED BOOKS

NOTE: Latest editions of the books recommended should be consulted.

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BIOINFORMATICS

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2. Bansal, Mohan. Medical Informatics: A Primer. Tata McGraw-Hill Pub, 2003. New Delhi
3. Baxevanis, Andreas D. Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins. 3rd Edition John Wiley and Sons, 2005. New Jersey
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