NUMS
NATIONAL UNIVERSITY
OF MEDICAL SCIENCES

# MBBS
# Year-IV

# Curriculum
# (2023)

**National University of Medical Sciences**
**Pakistan**

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## Preamble

The curriculum meets the standards of Pakistan Medical Commission and Higher Education Commission of Pakistan so that our students, on completion of program have required competencies as defined worldwide for a graduate doctor. NUMS curriculum is based on SPICES model of educational strategies. It is student centered, problem based, integrated, community oriented and systematic. The curriculum framework, for MBBS year IV has been developed by the faculty of constituent/affiliated colleges in collaboration with Academic Directorate of NUMS.

## 1. Curricular Structure

a. Total duration of academic year IV is 36 weeks. There are three blocks in an academic year. The duration of each block is 12 weeks
b. In year IV, students will be introduced to the systemic pathologies, prevention of disease and disability, and will be encouraged to apply their knowledge of basic medical sciences in clinics.
c. This year will focus on prevention and diagnosis of disease through maximum clinical exposure through rotations in pathology labs, community services, wards, OPD and emergencies as healthcare team members
d. Professional Exams are discipline based. **Special Pathology, Community Medicine, Eye and ENT** will be assessed in fourth Professional Exam

## 2. Curriculum perspective

NUMS curriculum is evolved taking into consideration Constructivist and behaviorist with some element of Cognitivist approach. It allows students to construct their own knowledge based on what they already know and to use that knowledge in purposeful activities requiring decision making, problem solving, and judgments.

## 3. Competencies

The focus of this curriculum is on the roles of a general physician as identified by PMC. These are skillful, knowledgeable, community health promoter, critical thinker,

professional and role model, researcher and leader. Competencies focused in year IV are:

a. Medical Knowledge
b. Community health promoter
c. Procedural skills
d. Clinical skills
e. Problem solving
f. Medical ethics
g. Communication skills
h. Professionalism
i. Leadership
j. Research

**4. Learning Outcomes**

By the end of fourth year, students should be able to:

a. Recognize the etiology, pathophysiology and morphological changes of human diseases in relation with its clinical significance
b. Interpret measurement of all health problems/issues affecting people at individual and community levels right from birth to death by adopting statistic, research and ethical approaches
c. Design and recommend measures for prevention, protection and education about the identified problems.
d. Evaluate the existing service for its suitability to cater for needs of the people and recommend modifications need fully.
e. Analyze and present collected data regarding the health issues and health services.
f. Describe composition, functions and programs of various international health agencies for national and international health care.
g. Develop a research proposal for a given topic
h. Take a focused history and perform clinical examination of organ systems to determine provisional diagnosis and plan management
i. Identify common eye and ear diseases specially emergencies, provide primary health care, refer to an appropriate center and do the follow-up of patients of his area.

## 5. Contact Hours Distribution Year-IV

| Subjects | Contact Hours |
|---|---|
| Special Pathology | 240 |
| Community Medicine | 140 |
| Research Methodology | 50 |
| Eye | 150 |
| ENT | 150 |
| Medicine | 95 |
| Surgery | 95 |
| Obstetrics & Gynecology | 65 |
| Paediatrics | 65 |
| Patient Safety | 25 |
| Behavioral Sciences | 50 |
| Self-Directed Learning | 100 |
| Co-curricular activities | 40 |
| **TOTAL HOURS** | **1265 hours** |

## 6. Academic Calendar

| YEAR-IV (Contact Hours: 1265 hours) | | | |
|---|---|---|---|
| 3.5 hours/ day for 4 days = 504 hours (Lectures / SGD/ integrated session/ Pathology Practical/ Community visits)<br><br>Friday: 252 hours | | | |
| • Special Pathology: 240<br>• Community Medicine: 140 hours<br>• RM: 50 hrs<br>• Behavioral Science: 50 hrs<br>• Eye: 30 hours<br>• ENT: 30 hours<br>• Medicine & Allied: 15 hours | | • Surgery & Allied: 15 hours<br>• Obs/Gynae: 25 hrs<br>• Paeds: 25 hrs<br>• Patient Safety: 25 hours<br>• Self-Directed Learning: 100 hrs<br>• Co-curricular activities: 40 hrs | |
| **BLOCKS** | **BLOCK X (11+1=12 weeks)** | **BLOCK XI (11+1=12 weeks)** | **BLOCK XII (11+1=12 weeks)** |
| **Special Pathology** | • Cardiovascular system<br>• Respiratory System<br>• Oral cavity and Gastrointestinal tract<br>• Hepatobiliary system and Pancreas | • Urinary System<br>• Male genital system<br>• Female genital system<br>• Diseases of Breast<br>• The Skin<br>• Bones, Joints and Soft Tissue | • The Endocrine System<br>• Central Nervous & Peripheral nervous system<br>• Haematology |
| **Community Medicine & Research methodology** | • Epidemiological perspective of Health and Disease | • Communicable Diseases Prevention and Behavioral Modification | Environment and Health Planning |
| **Proposed Rotation Plan (3.5 Hrs/ 4 Day)** | | | |

| Groups | I | | | II | | | III | IV |
|---|---|---|---|---|---|---|---|---|
| | 9 Weeks | | | 9 Weeks | | | 9 Weeks | 9 Weeks |
| **Duration** | **3 wks** | **3 wks** | **3 wks** | **3 wks** | **3 wks** | **3 wks** | | |
| **Disciplines** | **Medicine** | **Medicine & Allied** | **Paeds** | **Surgery** | **Surgery & Allied** | **Obs/ Gynae** | **Eye** | **ENT** |
| **Total Hours** | 40 | 40 | 40 | 40 | 40 | 40 | 120 | 120 |

## 7. Clinical Rotations in year IV

a. During the clinical rotation in 4th year, students will be exposed to both inpatients and outpatient clinical practice. Focus is on medical history taking and physical examination with little expectation on diagnosis and management. Students also create lists and develop plans to direct the investigation of patients' medical disorders

b. **Learning Outcomes:** At the end of fourth year clinical rotation, students will be able to:

i. Evaluate common symptoms
ii. Identify common clinical signs
iii. Communicate effectively with the patients, seniors and colleagues
iv. Follow the steps of history taking
v. Take a focused history and perform clinical examination of organ systems to determine provisional diagnosis
vi. Formulate differential diagnosis of common clinical conditions of relevant department
vii. Interpret common investigations and comment whether these are normal or abnormal
viii. Develop the plans of initial management in clinics
ix. Discuss common drug interactions

x. Enumerate common side effects of drugs
xi. Make long-term plan for prevention of disease
xii. Perform minor procedures safely and be capable to communicate effectively with patient and family regarding disease and its relevant issues.
xiii. Understand ethics specially to maintain patient confidentiality

c. Logbooks will be maintained to keep the record of student performance during the rotation. Logbook will be countersigned by the faculty supervising the sessions.
d. At the end of each clinical rotation, the whole group will have a clinical exam which will contributes towards the internal assessment in the final year (20 %). Assessment at the end of clinical rotations will focus on application of knowledge, competence in specific clinical skills, and appropriate professional attitude. Satisfactory performance will be required in each of these areas for progress and promotion. Failure in assessment requires the student to repeat the end rotation exam. Passing marks are 50%
e. Attendance of 75% and satisfactory performance in the rotation/clerkship in each year is mandatory.

8. **Resources**. To be filled in by the institute
   a. Faculty
   b. Facilities
   c. Administration for Course
   d. Administrative structure
   e. Communication with students

9. **Educational Strategies (These are proposed, but institutes can use other evidence-based teaching methodologies that suit their context)**
   a. Lectures
   b. Small group discussion
   c. Lab practical
   d. Skill lab
   e. Problem based learning/ Case based learning
   f. Tutorials

g. Community oriented visits
h. Integrated sessions using any of the above strategies
i. For clinical subject's contact hours may be covered by following teaching strategies:
j. LGIS
k. SGD

**10. Internal Assessment**

Students will be assessed at the end of each block. The weighting of internal assessment is 20% in 4th professional MBBS Examination. There will be three end of blocks and one pre -annual examination. The scores of tests of each end block assessment and pre-annual examination will be used for calculation of the internal assessment.

**11. Annual Professional Examination**.

The University will take the fourth professional Examination at the end of the academic year. Annual Theory & Practical Examination will be of 300 marks each for Special Pathology and Community medicine, and 200 Marks for Eye and ENT each. The passing score is 50% in theory and practical separately. However, in clinical subjects, student should pass in clinical exams / OSCE (with 50% marks) and unobserved stations (with 50% marks) separately

**12. Evaluation of the Course.** To be filled in by the institute.

a. Student portfolio shall be maintained in the departments in which students will give their feedback either by name or anonymously. Feedback may be taken at the end of module, online and informal student feedback during the running module
b. Faculty suggestions if any, for improvement of training may be incorporated in the next rotation

**13. Implementation of curriculum**

The university will give details of all content including learning outcomes, assessment blueprints, and table of specifications, distribution of which across the whole years and rotations is upon the discretion of the medical college/institute

# SECTION-I

# SPECIAL PATHOLOGY

| SPECIAL PATHOLOGY - BLOCK I (12 WEEKS) | | | | | |
|---|---|---|---|---|---|
| **Topics** | **Learning Outcomes By the end of Block I, the students will be able to:** | **Course Content** | **% Weight** | **Instr Strategies** | **Assessment Tools** |
| **Cardiovascular system** | Correlate the morphology & pathogenesis of cardiac and blood vessel diseases with their etiology & complications | • Atherosclerosis<br>• Hypertensive Vascular Disease<br>• Aneurysm<br>• Vasculitides<br>• Ischemic Heart Disease<br>• Cardiac Failure<br>• Hypertensive Heart Disease<br>• Rheumatic Fever and Rheumatic Heart Disease<br>• Congenital Heart Disease<br>• Cardiomyopathies<br>• Pericardial Diseases<br>• Tumors of CVS<br>• Types of hypertension<br>• Difference between atherosclerosis Monckeberg's medial calcific sclerosis and Arteriosclerosis.<br>• Tetralogy of fallot and Coarctation of aorta.<br>• Mitral valve prolapse | **35%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| | Justify the importance of various biochemical markers in diagnosis of cardiovascular disorders | • Cardiac markers<br>• Lipid profile | | | |
| **Respiratory System** | Correlate the morphology & pathogenesis of respiratory disorders with their etiology & complications | • ARDS<br>• COPD<br>• Asthma & Bronchiectasis<br>• Interstitial Lung Diseases | **30%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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|---|---|---|---|---|---|
| | | • Pulmonary Vascular Disorders<br>• Pneumonias<br>• Granulomatous Diseases<br>• Lung Cancer<br>• Pleura<br>• Pleural Effusion & Pneumo-thorax<br>• Hydrothorax, Chylothorax, Haemothorax and Pleuritis.<br>• Pulmonary eosinophilia<br>• Good pasture syndrome and Pulmonary infarction | | | |
| | Justify the importance of various biochemical markers in diagnosis of metabolic and endocrine disorders | Acid base balance | | | |
| **Oral cavity and Gastrointestinal tract** | Analyze the Non neoplastic and neoplastic lesions of salivary glands & oral cavity based on their etiology and pathogenesis, morphology & complications | • Inflammatory, neoplastic and non-neoplastic lesions of salivary glands<br>• Tumor and Precancerous conditions of Oral cavity | **35%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| | Correlate the morphology (Microscopic and macroscopic) of **gastrointestinal disorders*** to their etiology and pathogenesis<br><br>*Esophagus, Stomach, | • Motor disorders of esophagus, varices, esophagitis & Barrett's esophagus<br>• Tumors of Esophagus<br>• Gastritis & Peptic ulcer Disease<br>• Tumors of Stomach<br>• Malabsorption & celiac disease | | | |

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|---|---|---|---|---|---|
| | Small intestine and large intestine | • Inflammatory Bowel Disease<br>• Enter colitis<br>• Acute appendicitis<br>• Malignant lesions of small & large intestine | | | |
| **Hepatobiliary system and Pancreas** | Correlate the morphology (Microscopic and macroscopic) of Hepatobiliary and pancreatic disorders **to** their etiology and pathogenesis | **Hepatobiliary tract**<br>• Cirrhosis<br>• Acute & Chronic hepatitis<br>• Drug induced & toxic Liver Injury<br>• Metabolic Liver disease<br>• Liver abscess<br>• Neonatal Hepatitis<br>• Cholestatic diseases<br>• Tumors of Liver<br>• Gall bladder diseases<br>**Pancreas**<br>• Congenital anomalies Pancreatitis<br>• Neoplastic disorders of exocrine function of pancreas | | | |
| | Justify the importance of various biochemical markers in diagnosis of hepatic and pancreatic disorders | • Liver function tests<br>• Diagnosis of acute and chronic Hepatitis<br>• Diagnosis of Acute Pancreatitis | | | |
| **Total** | | | **100** | | |
| End Block Assessment to be taken by concerned institute itself<br>Assessment tools: MCQs & SAQs/SEQs | | | | | |

| PATHOLOGY - BLOCK I | |
|---|---|
| **CODE: Y4-B1** | |
| **DURATION: 12 WEEKS** | |
| **LEARNING OUTCOMES** | **List of Practical's** |
| Establish diagnosis by correlating findings of given slides with given scenarios | Atherosclerosis |
| | Rheumatic carditis and Myocardial infarction |
| | Pulmonary tuberculosis and Bronchiectasis |
| | Lobar Pneumonia and Broncho Pneumonia |
| | Chronic Bronchitis and Bronchogenic carcinoma |
| | Chronic gastritis, Peptic ulcer |
| | Carcinoma stomach, Ulcerative colitis, Crohn's disease, TB intestines |
| | Cirrhosis, CA liver, Chronic Viral Hepatitis, Ch. Cholecystitis |
| | Rectal Polyps and Colorectal carcinoma |
| | Acute appendicitis, Typhoid, Malabsorption |

| PATHOLOGY - BLOCK II (12 WEEKS) | | | | | |
|---|---|---|---|---|---|
| **Theme** | **Learning Outcomes By the end of Block II, the students will be able to:** | **Course Content** | **% Weightage** | **Instr Strategies** | **Assessment Tools** |
| **Urinary System** | Correlate the morphology (Microscopic and macroscopic) of urinary disorders to their etiology and pathogenesis | • Glomerular Diseases<br>• Tubulo Interstitial Diseases<br>• Vascular disorders<br>• Congenital & developmental anomalies<br>• Cystic diseases of kidney<br>• Obstructive Uropathy<br>• Neoplasms of kidney<br>• Congenital anomalies of ureter and urinary bladder<br>• Neoplastic disorders of ureters and urinary bladder<br>• Hydronephrosis<br>• Acute and Chronic Tubular necrosis<br>• Wilms tumor | **25%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| | Justify the importance of various biochemical markers in diagnosis of renal disorders | • Fluid and electrolyte disorders<br>• Renal Function tests<br>• Proteinuria and nephrotic/ nephritic syndrome | | | |
| **Male genital system** | Correlate the morphology (Microscopic and macroscopic) of male genital disorders to their etiology and pathogenesis | • Congenital anomalies of penis<br>• Congenital anomalies of testis<br>• Testicular tumors<br>• Prostatic hyperplasia and carcinoma<br>• Inflammatory disorders<br>• Cystitis | **15 %** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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|---|---|---|---|---|---|
| | | • Urethritis, Gonococcal and non-gonococcal infections<br>• Sexually transmitted disease(STD) | | | |
| | Justify the importance of biochemical markers in diagnosis of prostatic cancer | • PSA | | | |
| **Female genital system** | Correlate the morphology (Microscopic and macroscopic) of female genital tract disorders to their etiology and pathogenesis | • Vulva<br>• Vagina<br>• Cervix<br>• Endometrium & Myometrium<br>• Fallopian tubes<br>• Ovaries<br>• Gestational and placental disorders<br>• Infertility | **25%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Diseases of Breast** | Correlate the morphology (Microscopic and macroscopic) of Breast pathology to their etiology and pathogenesis | • Benign epithelial lesions<br>• Carcinoma breast<br>• Stromal Tumors | **10%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| | Justify the importance of biochemical markers in diagnosis of breast cancer | Breast tumor markers | | | |
| **The Skin** | Correlate the morphology (Microscopic and macroscopic) of epidermal and dermal disorders to their etiology and pathogenesis | • Disorders of Pigmentation & Melanocytes<br>• Benign Epithelial tumors<br>• Pre malignant & malignant epidermal tumors<br>• Tumors of the dermis<br>• Chronic inflammatory dermatosis<br>• Blistering diseases | **10%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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|---|---|---|---|---|---|
| | | • Disorders of Epidermal appendages<br>• Dermatitis | | | |
| **Bones, Joints and Soft Tissue** | Correlate the morphology (Microscopic and macroscopic) of bone, joints and soft tissue disorders to their etiology and pathogenesis | • Defects in metabolic pathways of Bone development<br>• Acquired disorders of bone & cartilage<br>• Fractures of Bone<br>• Osteomyelitis<br>• Bone tumors & tumor like lesions<br>• Joints<br>• Osteoporosis<br>• Immune mediated arthritis<br>• Crystal deposition disease<br>• Soft Tissues<br>• Tumors of Adipose tissue<br>• Fibrous tumors<br>• Skeletal muscle tumors<br>• Smooth muscle tumors<br>• Tumors of uncertain origin | **15%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| | Justify the importance of biochemical markers in diagnosis of certain metabolic disorders | • Uric acid and Gout | | | |
| **Total** | | | **100** | | |
| **End Block Assessment to be taken by concerned institute itself**<br>**Assessment tools: MCQs & SAQs/SEQs** | | | | | |

# PATHOLOGY - BLOCK II

| Learning Outcomes | List of Practical's |
|---|---|
| Establish diagnosis by correlating findings of given slides with given scenarios | Chronic pyelonephritis, renal stones, Wilm's tumor<br>Renal cell carcinoma<br>Transitional cell carcinoma- Bladder |
| | Benign prostatic hyperplasia<br>Prostate carcinoma<br>Seminoma Testis |
| | Leiomyoma<br>Cystadenoma (Serous and Mucinous)<br>CA Cervix, Endometrial Carcinoma<br>Mature Cystic Teratoma, Ovarian Tumors, Endometriosis |
| | Fibroadenoma<br>Invasive ductal carcinoma breast<br>Fibrocystic disease |

| PATHOLOGY - BLOCK III (12 weeks) | | | | | |
|---|---|---|---|---|---|
| **Theme** | **Learning Outcomes By the end of Block III, the students will be able to:** | **Course Content** | **% Weight** | **Instr Strategies** | **Assessment Tools** |
| **The Endocrine System** | Correlate the microscopic structure and physiology of endocrine gland disorders with their etiology and pathogenesis | • Pituitary Gland<br>• Thyroid gland<br>• Parathyroid gland<br>• Pancreas (endocrine part)<br>• Adrenal gland<br>• Adrenal cortex<br>• Adrenal medulla<br>• Diabetes Mellitus | **25%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| | Justify the importance of various biochemical markers in diagnosis of different endocrine disorders | • Pituitary Function test<br>• Thyroid function test<br>• Adrenal function test<br>• Parathyroid gland + Calcium<br>• Diabetes mellitus<br>• Biochemical diagnosis of infertility | | | |
| **Central Nervous & Peripheral nervous system**<br>**(**Neuromuscular junction, skeletal muscle disorders and special sense of vision) | Correlate the morphology (Microscopic and macroscopic) of **central and peripheral nervous system disorders* t**o their etiology and pathogenesis<br>* Neuromuscular junction, skeletal muscle disorders and special sense of vision | • Disease of Neuromuscular junction<br>• Diseases of Skeletal muscle<br>• Peripheral nerve sheath tumors<br>• Malformations and developmental disorders<br>• Traumatic injury<br>• Cerebro vascular disease<br>• Infections<br>• Prion diseases<br>• Demyelinating Diseases<br>• Neuro degenerative diseases<br>• CNS tumors<br>• Retinal neoplasms<br>• Guillain Barre syndrome and Inflammatory myopathies<br>• Metastatic tumors | **20%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Haematology** | | | | | |

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|---|---|---|---|---|---|
| **Diseases of Lymph nodes, Spleen & thymus** | • Differentiate between Hodgkin's and non-Hodgkin's lymphoma on the basis of etiology, morphology & pathogenesis<br>• Compare various types of thymomas on the basis of their morphology | • Hodgkin's lymphoma<br>• Non-Hodgkin's lymphoma<br>• Diseases of Thymus<br>• Multiple Myeloma | **10%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| | Justify the importance of biochemical markers in diagnosis of various hematological disorders | Plasma Proteins | | | |
| **Red blood cells and bleeding disorders** | • Interpret the lab reports of patient with Red cell & coagulation disorders based on pathophysiology of disease<br>• Analyze the hazards of blood transfusion<br>• Appraise the rejection reactions associated with bone marrow transplantation | • Anemias<br>• Autoimmune, hemolytic anemia<br>• Hemolytic anemia (HS, G6PD, SCD<br>• Thalassemia syndromes<br>• Coagulation disorders (hemophilia, VWD)<br>• Blood transfusion, RH incompatibility<br>• Bone marrow transplantation<br>• Transplantation rejection | **15%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Diseases of White blood cells** | Interpret the lab reports of patient with white cell disorders based on pathophysiology of disease | • Non-neoplastic white cells disorders (infections, inflammation<br>• Overview and classification of neoplastic proliferation of WBCs<br>• Differentiation between Infective and Malignant causes of leukocytosis with special reference to Infectious mononucleosis<br>• Acute and chronic non-specific lymphadenitis. | **15%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| **Diseases of Platelets** | Interpret the lab reports of patient with platelets disorders based on pathophysiology of disease | • Bleeding diathesis platelet disorders<br>• DIC, Thrombotic Thrombocytopenic purpura, HUS<br>• Myeloproliferative disorders<br>• Myelodysplastic syndrome | **15%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Total** | | | **100** | | |
| **End Block Assessment to be taken by concerned institute itself**<br>• **Assessment tools: MCQs & SAQs/SEQs** | | | | | |

| PATHOLOGY - BLOCK III | |
|---|---|
| **CODE: Y4-B3** | |
| **DURATION : 12 WEEKS** | |
| **Learning Outcomes** | **List of Practical's** |
| Establish diagnosis by correlating findings of given slides with given scenarios | • Multinodular goiter<br>• Follicular Adenoma<br>• Papillary Carcinoma thyroid<br>• Spectrophotometer |
| | Pleomorphic adenoma Salivary Gland<br>Giant cell tumor, Osteosarcoma |
| | Leishman Stain<br>Reticulocyte count |
| | Anaemias |
| | Acute & Chronic Leukemias |
| | • Blood sampling<br>• CBC + preparation of slide<br>• DLC<br>• ESR<br>• Blood grouping |
| | Multiple Myeloma |
| | Hodgkin's lymphoma and Non-Hodgkin's lymphoma |
| | Tuberculous lymphadenitis |
| | Thalassemia |
| | Aplastic anaemia |

# SECTION - II

# COMMUNITY MEDICINE

| BLOCK-I (12 weeks)<br>Epidemiological perspective of Health and Disease | | | | | |
|---|---|---|---|---|---|
| **Theme** | **Learning Outcomes**<br>At the end of contact session, learner should be able to: | **Course Content** | **% Weightage** | **Instr Strategies** | **Assessment Tools** |
| **Medical Ethics** | • Relate ethical issues and dilemmas with medical teaching and service delivery in a given scenario<br>• Maintain confidentiality<br>• Practice non-maleficence<br>• Maintain Doctor-patient relationship/autonomy | • Importance of Medical Ethics<br>• Principles of Medical Ethics<br>• Violations to Medical Ethics in Pakistan<br>• How to overcome these violations | **3%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **General epidemiology** | • Describe different research designs used to collect, analyze and interpret results from epidemiological studies<br>• Apply concepts & aims of Epidemiology to clinical medicine<br>• Calculate and interpret epidemiological rates ratios and proportions for morbidity/mortality | • Aims of Epidemiology and their application to clinical medicine<br>• Predicting disease patterns according to concepts of epidemiological transition and polarization<br>• Calculation and interpretation of epidemiological rates and ratios for morbidity/mortality, fertility and migration statistics<br>• Epidemiological methods (descriptive, analytical and experimental)<br>• Classification of different study designs in epidemiology. Calculating, analyzing and interpreting their results. Merits & demerits of studies and differentiate them<br>• Types of Bias and the techniques for its | **25%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

| | | | | | |
|---|---|---|---|---|---|
| | | minimization in different study designs<br>• Epidemiological Transition; Association and causation<br>• Community Diagnosis | | | |
| **Biostatistics** | • Identify various types of data, concept and uses.<br>• Differentiate measures of central tendency (Mean, Median, and Mode) and dispersion (Range, Standard deviation, and Standard error).<br>• Interpret the normal distribution curve, skewed distribution, bi and poly-modal distribution & Standard Normal Curve<br>• Classify and explain various sampling techniques<br>• Differentiate between null and alternate hypothesis, recall steps of its testing and indicate probable errors<br>• Interpret p-value<br>• Plan & present a research project<br>• Use relevant statistical program and computer for data entry and analysis<br>• Conduct health situation survey/house-hold survey<br>• Demonstrate the sampling technique | • Data, its various types and its classification, presentation (table, graphs and diagrams), analysis and interpretation<br>• Interpretation of data (t-test, Chi-square Test)<br>• Methods of data presentation (table, graphs, and diagrams)<br>• Central tendency and dispersion of data set<br>• Various distributions of data<br>• Sampling and its various techniques<br>• Normal distribution curve, skewed distribution, Standard Normal Curve<br>• Statistical analysis (concept and application)<br>• Null and alternate hypothesis, and recalling steps of its testing and indicate probable errors<br>• Sample size<br>• p-value | **25%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| **Concept of Health and Disease** | • Summarize health's determinants and indicators.<br>• Choose the most sensitive indicators by citing different examples<br>• Illustrate and describe theories of disease causation<br>• Relate the concept of natural history of disease and iceberg phenomena and relate it with<br>• Differentiate between disease control, elimination & eradication<br>• Interpret levels of prevention and intervention measures, with applied examples. | • Definition of health,<br>• Dimensions and determinants of health<br>• Spectrum of health.<br>• Indicators of Health.<br>• Responsibility for health.<br>• Concept disease causation (all theories including ecological triad, (agent, host & environmental factors).<br>• Spectrum of disease.<br>• Iceberg phenomenon.<br>• Natural history of disease.<br>• Levels of prevention. | **7%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Research methodology** | • Apply basic biostatistics and epidemiological techniques to research community health projects<br>• Draw conclusions from data<br>• Prepare and present research report<br>• Develop tool for data collection<br>• Estimating the sample size<br>• Apply ethical principles to resolve issues of service delivery in a given research<br>• Formulate the research hypothesis/ research | • Introduction to Quantitative and Qualitative research Methodology<br>• Selection of research question according to WHO criteria.<br>• How to write Title and Introduction, conduct literature review, compose study objective and select appropriate research methods including study variables and analysis plan.<br>• Data entry and analysis using SPSS package.<br>• Drafting a research article according to standardized scientific method.<br>• Ethics in research | **5%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

| | | | | | |
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| | Question/ research objectives<br>• Write references according to Vancouver style<br>• Formulate a research hypothesis<br>• Collect Sample from field<br>• Enter data on SPSS and Excel<br>• Run analysis on SPSS<br>• Search the literature<br>• Practice Ethics in general and specifically in conducting human Research, including informed consent and basic human right for accepting or declining to participate in research | | | | |
| **Infectious disease epidemiology (General)** | • Interpret various terms used to describe infectious diseases and relate levels of prevention and intervention measures, with applied examples.<br>• Identify and interpret various types of epidemics from the focus of disease spread and control<br>• Illustrate graphically and relate the natural history and progression of an epidemic type to stages of prevention<br>• Comprehend the objectives & logic in steps of investigating an epidemic<br>• Assess the level of care at primary, secondary and tertiary level as | • Infection, Contamination, Infestation, Pollution, Infectious disease, Contagious disease, Communicable disease, Host, Immune and Susceptible persons, Sporadic, Endemic, Epidemic, Pandemic, Exotic, Epizootic, Enzootic, Zoonosis, Nosocomial infection, opportunistic infection, Iatrogenic (physician-induced) infections, isolation, quarantine, disinfections Surveillance, Eradication, Elimination<br>• Dynamics of infections; disease transmission<br>• Interruption of disease transmission<br>• Reservoir and source of infection, escape of | **13%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | applied in real life setting.<br>• Recommend disease control measures<br>• Communicate effectively regarding preventive measures<br>• Identify and suggest various methods of sterilization and disinfection in given situations. | organism, modes of transmission, entry into the body, susceptible host.<br>• Controlling the reservoir notification, early diagnosis and treatment<br>• Carrier state and its types (Incubatory, convalescent, healthy)<br>• Incubation period, latent period and generation time.<br>• Epidemic and its types, investigation of an outbreak or an epidemic<br>• Sterilization & disinfection Sterilization and disinfection methods and recommendations on identifying gaps<br>• National case management guidelines | | | |
| **General Immunology** | • Define and explain immunology & its components<br>• Describe pre-requisites of vaccination including cold chain, hazards, contra-indications & precautions<br>• Justify the use of different types of vaccines in different scenarios<br>• Define EPI and explain its component vaccines<br>• Plan a vaccination schedule according to given scenario applying current protocols/evidence-based | • Immunizing agents<br>• The susceptible host; (active and passive immunization, chemoprophylaxis)<br>• EPI schedule<br>• Herd immunity<br>• Cold chain<br>• Adverse effects following immunization and its investigation | **5%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Follow the protocol for cold chain maintenance for different vaccines<br>• Keep records for vaccination protocol<br>• Administer polio vaccine<br>• Check BCG scar<br>• Advise mothers for vaccination in different situations | | | | |
| **Screening for disease** | • Comprehend Concept and importance of screening<br>• Describe qualities of a good screening test<br>• Apply knowledge for making smart choices<br>• Discover relationship between screening and prevalence of disease<br>• Comprehend effects of changing sensitivity and specificity on usefulness of screening<br>• Understand and calculate accuracy of a screening test<br>• Identify and correlate favorable characteristics of a disease that make screening useful and relevant for the disease<br>• Identify different misinterpretations/ | • Concept and importance of screening<br>• Qualities of a good screening test<br>• Relationship between screening and prevalence of disease<br>• Effects of changing sensitivity and specificity on usefulness of screening<br>• Accuracy of a screening test<br>• Favorable characteristics of a disease that make screening useful and relevant for the disease<br>• Different misinterpretations/ errors in the screening programs<br>• Comprehend ethical concerns in carrying out screening programs | **7%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | errors in the screening programs<br>Comprehend ethical concerns in carrying out screening programs | | | | |
| **Primary Health Care, Leadership, SDGs International health** (partners in health), | • Comprehend the changing concept of health<br>• Categorize health problems based on criteria of susceptibility to control<br>• Explain the concept of 'Health for All,' Principles of Primary Health care and relate its components/elements<br>• Describe the Sustainable Development Goals (SDGs) and relate to national programs and developmental outcomes<br>• Describe the concept of leadership and motivation and identify the role of leadership in PHC<br>• Differentiate between comprehensive and selective PHC<br>• Describe current comprehensive and selective primary healthcare programs and apply principles of leadership to identify gaps and recommend reforms<br>• Identify and describe gaps in | • Development of Public Health in Pakistan.<br>• "Health for All", background, concepts and progress<br>• "Primary Health Care": Concepts and progress.<br>• Leadership in health<br>• Sustainable Development Goals SDGs 2030)<br>• Rural and Urban Health | **13%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | implementation of PHC<br>Assess the adequacy of level of healthcare at a given facility | | | | |
| **HMIS** | • Identify existing sources of health related statistics in Pakistan, Census and its types<br>• Collection and Registration of vital events in Pakistan.<br>• Sources of health-related statistics<br>• Comprehend different stages of planning such as: situational analysis, establishment of objectives and goals, assessment of resources, fixing priorities, outlining, programming and implementation, monitoring and evaluation<br>• Interpret questionnaire for service assessment/ health benefits<br>• Comprehend the rationale of devolution of power and the problems of health care system in Pakistan<br>• Identify current gaps post 18th Amendment and role of tertiary-care facilities in delivering healthcare at all levels | • Characteristics elements, components, and uses of HMIS<br>• Reason for failure of HMIS in Pakistan<br>• Suggestions to improve HMIS in Pakistan | **2%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Collect relevant data<br>• Learn to manage data as part of health information system (HMIS)<br>• Evaluate adequacy of Health System (THQ) using checklist<br>• Communicate effectively the themes of various international days to individuals in hospitals and communities<br>• Prepare and disseminate health information related to specific recognized dates of public health importance<br>• Plan a seminar/symposium, invite interdisciplinary guest-speakers for specific days of public health importance | | | | |
| **End Block Assessment to be taken by concerned institute itself**<br>**Assessment tools: MCQs & SAQs/SEQs** | | | **100** | | |



# Schedule of Visits

| **Visits in Block I** |
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| Visit to Basic health unit |
| Visit to rehabilitation Center |

| COMMUNITY MEDICINE - BLOCK II<br>(Communicable Diseases Prevention and Behavioral Modification) | | | | | |
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| **Duration: 12 weeks** | | | | | |
| **Theme** | **Learning Outcomes<br>At the end of this block, student will be able to:** | **Course Content** | **%** | **Instr Strategies** | **Assessment tool** |
| **Emerging & re-emerging infections/Hospital acquired infections**<br><br>**Hospital waste management** | • Differentiate between emerging and re-emerging disease<br>• Identify the causes and control of this emergence<br>• Acquaintance with nosocomial infections, factors causing it and control measures<br>• Comprehend the role of Hospital waste management in infectious disease control and select appropriate method.<br>• Communicate effectively regarding preventive measures | | **10%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Personal hygiene, Unsafe injections** | • Comprehend the concept of personal hygiene.<br>• Define unsafe injections practices and suggest relevant control measures<br>• Educate community regarding unsafe injections practices and related hazards | | **5%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Travel medicine** | • Interpret the common health problems of travelers<br>• Advice the travelers to prevent the travel related problems | | **1.5%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| **Communicable diseases Prevention and Control** | • Comprehend modes of disease transmission, interaction of agent host and environment in the pre & pathogenesis phases<br>• Relate the natural history of disease in regards to incubation period, lab diagnosis and preventive measures<br>• Suggest strategies for disease control and prevention for every specific disease and in different situations<br>• Compare and contrast the clinical presentations of specific diseases<br>• Relate occupations with various diseases<br>• Manage cases and determine need to refer<br>• Classify arthropods of medical importance and relate their role in disease transmission<br>• Recommend control measures for arthropods<br>• Relate environment with specific vector breeding<br>• Differentiate between terms used in medical Parasitology | • Common endemic communicable diseases (diagnosis and management); Dengue, Malaria, Tuberculosis, Typhoid<br>• (Droplet, Gastrointestinal, Zoonotic, Arthropod borne, Zoonotic, Contact infections)<br>• Reproductive tract infections, guideline for management of STIs.<br>• Parasitology<br>• Entomology | **45%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Explain mode of transmission and recommend prevention and control measures for parasites of medical importance<br>• Motivate people at risk for adopting primary preventive measures<br>• Advise about preventive measures to control spread of infections<br>• Practice personal protective measures when at risk<br>• Prepare, administer and transfer the skills for homemade/prepared ORS according to protocol<br>• Evaluate degree of dehydration on the basis of history and clinical examination using algorithm/standards | | | | |
| **Medical Sociology and Prevention of Mental and psychological illnesses** | • Relate sociology, social sciences, epidemiology and clinical sciences<br>• Relate the social evils of the society such as prostitution, delinquency, religious differences and food adulteration with individual and public health<br>• Relate the social structure of a hospital with doctor-patient & | • Definition & concepts in Sociology<br>• Scope of Psychology (35 behavior, emotions, attitudes, learning, habits, personality, intelligence)<br>• Social psychology (family, community, hospital sociology, social organization)<br>• Social problems (prostitution, | **13.5%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | doctor-nurse relationship<br>• Recommend solutions based on the application of bio-psycho-social model and theories of social behavior to prevent/decrease social deviances and evils<br>• Conduct interview in any setting, using the correct technique.<br>• Practice ethical communication methods | delinquency, dowry system, drug addiction)<br>• Community services<br>• Economics<br>• Juvenile delinquency. | | | |
| | • Define and categorize mental health<br>• Recognize characteristics of a mentally healthy person and warning signals of poor mental health<br>• Identify common mental health problems (as pertains to symptomatic psycho-social aspects) of public health importance in Pakistan and relate their risk factors/causes<br>• Recommend preventive measures against mental health problems according to given scenario<br>• Enlist WHO criteria and recommendations to improve mental health in countries<br>• Communicate effectively and ethically with individuals | • Concept of mental health<br>• Characteristics of mentally healthy persons.<br>• Warning signals of poor mental health.<br>• Common mental health problems, their causes, prevention and control. | **1.5%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | regarding mental health issues<br>• Identify clinically the warning signs and symptoms of mental health ; refer at appropriate time to relevant health professional(s) | | | | |
| | • Define and comprehend magnitude of drug abuse in Pakistan<br>• Relate factors and populations associated with high risk for drug abuse<br>• Differentiate the symptoms of different drug-related addictions<br>• Describe first-aid measures for different drug-related emergency health situations in a given scenario<br>• Apply three levels of prevention to decrease drug abuse in the country<br>• Comprehend magnitude of tobacco smoking globally as well as in Pakistan<br>• Describe hazards associated with tobacco smoking<br>• Recommend measures to control tobacco smoking in the country at all levels<br>• Formulate behavior modification plan for patient(s) to quit smoking in hospital settings | • Concept regarding attitudes, health and illness behavior.<br>• Drug abuse, addiction, dependence and their signs/symptoms, effects of toxicity<br>• Smoking: causes, risk factors, health impact<br>• Control of drug use and smoking according to three levels of prevention | **6%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Communicate effectively with individuals having addictions<br>• Educate and motivate individuals at-risk how to avoid and modify risk behaviors and seek professional help<br>• Educate parents on the sign and symptoms of drug abuse/addiction and when to seek professional help<br>• Educate and motivate individuals at risk to avoid and modify risk behaviors and seek professional help to quit smoking<br>• Educate parents on signs and symptoms of smoking addiction and when to seek professional help | | | | |
| **Health Education** | • Define health education and describe its phases<br>• Choose suitable method of health education for certain audiences<br>• Recognize scope, stages approaches, principles and functions of health education<br>• Identify and overcome barriers of health education and outline an ideal communication process for a given situation<br>• Compose a health education message in given situation | • Concept, aims and objectives of health education<br>• Approaches used in public health.<br>• Contents, principles and stages of health education.<br>• Communication methods, barriers, skills and channel of communication in health education.<br>• Planning, organizing and evaluating a health education programs. | **20%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Prepare a plan for health education intervention programs for different types of audience in a given scenario<br>• Educate various groups effectively<br>• Use Role play as an educational and interventional tool<br>• Advise paramedics and other auxiliary healthcare staff about infection control<br>• To participate in health awareness campaigns pertaining to nationally and internationally recognized days for global public health and population issues | | | | |
| **End Block Assessment to be taken by concerned institute itself**<br>**Assessment tools: MCQs & SAQs/SEQs** | | | **100** | | |

# Schedule of Visits

| Visits in Block II |
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| Visit to a factory |
| Visit to Waste Management center |

| COMMUNITY MEDICINE - BLOCK III<br>Environment and Health Planning | | | | | |
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| **Duration: 12 weeks** | | | | | |
| **Theme** | **Learning Outcomes**<br>**At the end of this block, student will be able to:** | **Course Content** | **% Weightage** | **Instr Strategies** | **Assessment tool** |
| **Demography, Family Planning** | • Relate fertility and population growth to epidemiological and demographic principles<br>• Interpret pyramids of different countries, correlate demographic structure with population change and predict demographic trends<br>• Relate population forces to the delivery of different services<br>• Select Family planning methods according to the situations<br>• Extrapolate the need for population control<br>• Interpret/distinguish Demographic, fertility and epidemiological transition<br>• Explain Demographic trap<br>• Calculate demographic equation and indicators<br>• Outline strategies in health & social sectors applying multi-disciplinary approach and demographic principles | • Demographic principles and demographic processes.<br>• Basic demographic equation, arithmetic and geometric progression methods<br>• Population dynamics (mortality, fertility, migrations)<br>• Sex ratio, dependency ratio.<br>• Determinants of fertility, fertility related statistics, fertility trends.<br>• Population pyramid and its interpretation.<br>• Demographic transition, demographic trap and its public health importance.<br>• Demographic and social implications of high population growth.<br>• Census definition, methodology and its types<br>• Social mobilization.<br>• Urbanization.<br>• Family planning | **10%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Motivate women & men (inclusive approach) regarding family planning approach and methods<br>• Communicate effectively<br>• Counsel patients on various contraceptive tools and methods | | | | |
| **MCH (Reproductive Health, Preventive Pediatrics, Geriatrics)** | • Define and comprehend the rationale of Reproductive health.<br>• Infer the logic behind application of different preventive measures in various phases of life to improve the Maternal Health<br>• Appreciate the relationship between the Maternal Health status and the outcome of pregnancy<br>• Determine the factors that contribute to increase MMR<br>• Develop interventions to control MMR<br>• Define infant mortality<br>• Determine the factors which predispose to high infant mortality<br>• Formulate interventions to prevent infant mortality in different situations<br>• Recognize and compute different indicators which can be used for | • Safe motherhood and its pillars, antenatal, intra-natal care, post-natal care, family planning and emergency obstetric care.<br>• MCH problems, delivering MCH services, indicators of MCH care<br>• Maternal mortality causes and prevention.<br>• Infant care, neonatal examination of infants at risk, growth and development (growth chart), feeding of infant (breast and artificial).<br>• Common causes of morbidity and mortality, their prevention and control.<br>• Child care and under five clinics, Health promotion strategies.<br>• Common ailments, home accidents, child mortality and prevention. | 18% | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | maternal and child health care and services<br>• Describe the advantages and disadvantages of different types of feeding practices<br>• Determine the conditions of concern prevailing in the mother during breast feeding<br>• Define geriatrics, describe problems and diseases of the old age<br>• Identify risk behavior in old age people<br>• Suggest preventive measures at different levels of prevention and in different scenarios<br>• Formulate and suggest preventive measures for cancers of reproductive tract in individuals and populations at-risk<br>• Create awareness among women regarding antenatal visits and postnatal follow-up<br>• Perform antenatal checkups of women.<br>• Educate the mothers about technique of breast feeding and to advice to Tuberculous mother about lactation<br>• Educate mothers about the steps of weaning | • Strategic approaches of integrated management of childhood illness (IMCI)<br>• Adolescent health.<br>• Reproductive tract cancers of men & women. Adolescent health. | | | |

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| | • Educate mothers regarding EPI<br>• Prepare home-made ORS<br>• Advise pregnant women on Nutritional and immunization needs<br>• Counsel women who give bottle feeding to their children<br>• Weigh the baby and measure the height of children<br>• Assess degree of dehydration<br>• Motivate women to vaccinate their babies on national immunization days<br>• Plot and interpret growth chart<br>• Educate Traditional Birth Attendant for clean and safe delivery at First Level Care Facility<br>• Educate the individuals how to cope with different problems and diseases of old age | | | | |
| **School and Dental Health Service** | • Define School health Services and recall objectives of school health<br>• Identify the duties of school medical officer, functions of SHS and role of teacher<br>• Identify and interrelate the common health problems of school children<br>• Identify the deficient health services and | • Common health problems of school children including physically challenged<br>• Role of teachers and role of doctors in maintenance of health.<br>• Procedures for determining health status of school age children.<br>• Handicapped children. | **3%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | physical environment in schools using standardized checklist<br>• Interpret the components of school health<br>• Provide First aid<br>• Diagnose, treat & refer common ailments in school environment<br>• Motivate students for maintaining healthful lifestyle<br>• Inspect school and advise relevant modification(s)<br>• Educate school children for healthful behavior | • Healthful school environment and hostels. | | | |
| **Current Health Programs in Pakistan:** | Interpret the concepts of international days celebrations | • Expanded Programs on immunization (EPI).<br>• Prime Minister Programs for Prevention and Control of Hepatitis<br>• Rollback- Malaria Programs<br>• National Programs for Family Planning and Primary Health Care. "The lady workers Programs"<br>• Enhanced HIV/AIDS Control Programs.<br>• National Tuberculosis Control Programs<br>• Improvement of Nutrition through Primary Health Care and nutritional education and public awareness.<br>• National Programs for prevention and control | **3%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | | of Avian and Pandemic influenza.<br>• Maternal Neonatal and Child Health care Programs (MNCH).<br>• National Programs for Prevention and Control of Blindness | | | |
| **Partners in Health** | List various health agencies and describe composition and relate functions of different International Health agencies WHO, USAID, UNICEF, UNFPA to national and international care | • The public and private sector<br>• Non-governmental Organizations and International agencies.<br>• Community Mobilization.<br>• Concept of leadership. | **2%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Health System in Pakistan, Health planning and management** | • Health policy and planning in Pakistan<br>• The National disease control programs; policies, strategies and operations<br>• Health System in Pakistan; the role of federal and provincial Governments in health care<br>• Health planning; planning cycle<br>• Planning-programming-budgeting system<br>• Management and administration<br>• Management methods and techniques<br>• Physician as a manager; functions of manager, management of material, human and financial resources<br>• Define health care and health care system | • Various levels of health care<br>• National health vision<br>• The District Health System, in the context of devolution. | **3%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Distinguish various levels of health care<br>• Identify deficiencies in different health-care facilities<br>• Differentiate different sectors of health system and functioning<br>• Describe and relate the referral mechanism to various levels of health care facility<br>• Describe medical team<br>• Identify the causes of failure of adequate health-care delivery in Pakistan and give recommendations for improvement based on scenario | | | | |
| **Environmental Health** | • Relate the bio-psycho-social model with different types of environment<br>• Relate the current environmental indicators to legislative guidelines and apply them for sustainable protection of environment in national, regional and global perspectives.<br>• Outline modifications for specific environments to prevent and control diseases<br>• Relate role of environment to hospital infections<br>• Relate physical hazards to various occupations or climatic conditions<br>• Identify personal protective measures for individuals and groups facing specific | • Air: composition of air and causes of air pollution, methods for air purification, diseases caused by impurities in air and their prevention.<br>• Water: sources of water, daily water requirement. Water pollution its causes and prevention, purification of water.<br>• Water quality standards, diseases due to polluted water.<br>• Waste disposal: contents, hazards and safety measures for solid and liquid; domestic, industrial and hospital waste.<br>• Climate: climate and weather, global | **15%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | environmental hazards<br>• Identify and employ protective measures against the high-risk physical environment in the healthcare profession<br>• Educate individuals/communities on preventive environmental measures to maintain good health<br>• Calculate the amount of chlorine required to disinfect water<br>• Calculate the amount of disinfectants for different reservoirs<br>• Collect water samples from different sources<br>• Practice through role play on how to prevent or reduce undue harmful environmental exposure to themselves, patients and their attendants in given situation | environmental concerns.<br>• Green-house effect, depletion of ozone layer, acid rains.<br>• Effects of extremes of temperature, humidity and atmospheric pressure on human health and their prevention.<br>• Radiation: sources, types, effects, hazards and prevention.<br>• Healthful housing. Urban and rural slums.<br>• Noise: definition, acceptance level, causes of noise pollution, hazards to human health and their control. | | | |
| **Occupational Health** | • Relate occupational health, occupational hygiene, ergonomics, occupational diseases & Injuries.<br>• Relate occupational disease agents and factors (physical, chemical, biological, psychological, mental) with health<br>• Identify factors or patterns in a patient's history that may indicate a work related contribution to ill health<br>• Identify occupational hazards and suggest relevant control | • Occupational Hazards<br>• Ergonomics<br>• Pneumoconiosis<br>• Occupational poisoning e.g. lead, arsenic, dust etc.<br>• Sickness absenteeism<br>• Hazards of industrialization<br>• Preventive and control measures<br>• Legislative measures<br>• Social security services in Pakistan | **10%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Interpret Standardized Mortality Rate (SMR) with respect to particular trade<br>• Motivate a worker to take preventive measures at work place e.g. regular use of personal protective equipment<br>• Counsel health workers regarding safe practices and hygiene<br>• Observe and assess the standards being implemented for safety<br>• Diagnose clinically common work-related symptoms and disorders; refer to relevant specialist | | | | |
| **Nutrition** | • Define the terminologies used in relation to food & nutrition<br>• Classify and comprehend the importance of different foods, minerals and vitamins<br>• Describe a balanced diet chart<br>• Relate the states which alter energy requirement of individuals<br>• Identify the major nutritional problems of public health importance<br>• Differentiate types of PEM and recommend preventive and corrective measures<br>• Plan and assess the nutritional status of a community | • Concepts (nutrition, nutrient, food, diet).<br>• Food groups, their functions and deficiency diseases.<br>• Role of fiber in diet.<br>• Balance diet, dietary goals (prudent diet).<br>• Malnutrition at all stages of life, its types, causes and prevention.<br>• Common nutritional problems of public health importance, their prevention and control.<br>• Dietary requirements of normal human being at different stages of life.<br>• Food hygiene, pasteurization, fortification, additives, | **17%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | • Relate the epidemiological aspects of nutrition<br>• Classify water-borne, meat-borne and milk-borne diseases<br>• Identify & outline preventive measures for water borne, milk borne, meat-borne diseases.<br>• Calculate the energy requirement and basal metabolic rate in a given scenario<br>• Recognize/explain nutritional hazards to which populations are exposed in emergency situations<br>• Classify biological and social epidemiology of obesity<br>• Correlate Immediate and delayed adverse effects of nutritional deficits with health status<br>• Calculate and interpret obesity among adults on the basis of BMI<br>• Plan individual and community-based methods of prevention and control of obesity.<br>• Diagnose clinically the nutritional problems including iodine deficiency, anemia, fluoride deficiency, Marasmus & Kwashiorkor with their prevention on the basis of signs and symptoms according to relevant algorithm/ standard<br>• Assess anemia clinically | adulteration and preservation.<br>• Food borne diseases/ Food poisoning.<br>• Assessment of nutritional status of a community. | | | |

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| | • Assess nutritional status in a community by anthropometry<br>• Inspect slaughter house, and observe characteristics of fresh meat, fish, eggs etc.<br>• Advise on restructuring or modifying the energy requirements (through diet) in relation to physiological states<br>• Communicate effectively, especially regarding behavior and life-style modification<br>• Motivate and inform the individuals and community for prevention of obesity<br>• Revise/restructure and communicate diet plan, nutritional and lifestyle modification | | | | |
| **Non-communicable diseases** | • Classify biological and social epidemiology of different chronic non-communicable diseases and determine their risk factors<br>• Formulate and suggest preventive measures for these diseases in individuals and populations at-risk<br>• Relate different risk factors to particular patients and general population<br>• Estimate the extent of damage to individuals and community in terms of morbidity and mortality burden | • Common endemic non-communicable diseases (diagnosis and management); Asthma, HTN, DM, ischemic heart diseases, nutritional deficiency anemia, pneumonia, thalassemia<br>• Hypertension / Stroke ii) Coronary heart disease<br>• Cancers<br>• Diabetes mellitus<br>• Rheumatic fever and heart disease<br>• Asthma<br>• Thalassemia | **12%** | | |

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| | • Revise/restructure and communicate diet plan, nutritional and lifestyle modification | • Blindness<br>• Genetically transmitted disease | | | |
| **Snake bite** | • Differentiate between signs and symptoms of different snake-bites<br>• Recommend preventive measures against snake bites in particular situations.<br>• Educate regarding snake-bite prevention | • Snakebite Epidemiology, Personal protection and management<br>• Types of snakes according to toxin production: hemolytic toxins, Musculo-toxins and neurotoxin | **1%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Injuries and accidents** | • Categorize different types of accidents<br>• Define and explain epidemiology and control of different types of accidents<br>• Relate risk factors with types of accident<br>• Formulate a health education program for local school/ community/ hospital/ workplace on prevention of accidents and promotion of safety measures<br>• Impart health education and knowledge for prevention of accidents and treatment of victims | • Types, etiology, specific environments and at-risk populations<br>• Preventive and safety measures<br>• | **2%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |
| **Disaster management** | • Define, classify and differentiate between different disasters<br>• List duties of a disaster & emergency-management health team and relate the role of medical officer in disaster setting<br>• Advise on Re-habilitation and re-construction<br>• Manage disaster utilizing knowledge of disaster | • Definition, classification of disasters: Natural disasters like earthquake and floods; Manmade disasters and thermo nuclear warfare<br>• Magnitude and effects of disasters and public health consequences<br>• Disaster preparedness and management<br>• | **4%** | • Lectures<br>• CBL | • MCQ<br>• SAQ/SEQ<br>• Structured viva |

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| | management (POSDCORB), disaster impact and response, mitigation<br>• Relate the application of National Disaster Management and Preparedness guidelines according to given scenario | | | | |
| **End Block Assessment to be taken by concerned institute itself**<br>**Assessment tools: MCQs & SAQs/SEQs** | | | **100** | | |

# Schedule of Visits

| **Visits in Block III** |
|---|
| Visit to NGO |
| Visit to family planning center |
| Visit to School |

**Learning Resources:**

Park's Text Book of Preventive and Social Medicine 24th Edition, Public Health & Community Medicine by Muhammad Iliyas 8th Edition, Internet, Lecture Handouts, Material from Tutorial, CBL

# SECTION - III

# ENT

## Overview

1. **Introduction:**
   a. Minimum 150 hours are allocated to ENT in the year IV. At least 30 hours are for theory content which is covered in lectures and CBLs in three blocks throughout the academic year. End block examination is taken at the end of each block by the respective institute which is counted in internal assessment at the end of fourth year.
   b. Minimum 120 hours are for clinical training in outpatient and indoor patients' departments, which is covered in 09 weeks of clinical rotation. TOACS / Mock exam is held at the end of clinical rotation which is counted in internal assessment at the end of fourth year. Log book is maintained during the rotation
   c. Each group would spend four days a week in ENT for at least 3.5 hours daily.
   d. Pre annual examination of theory and clinical is taken on the pattern of fourth professional.
2. **General Outcome**

   General outcome of this teaching is to equip the average student with minimum essential knowledge, skill and attitude to make him enable to **-:**
   a. Identify common ear diseases specially emergencies, provide primary health care, refer to an appropriate center and do the follow-up of patients of his area.
   b. Perform minor procedures safely and be capable to communicate effectively with patient and family regarding disease and its relevant issues.
   c. Practice ethics specially to maintain patient confidentiality

**Skills**

a. By the end of the rotation in the Department of ENT, the student should be able to:
   1) Obtain an appropriate history.
   2) Perform a complete ear examination.
   3) Identify common ear problems for a given patient and

Outline appropriate management plans

| Ear | | | | | |
|---|---|---|---|---|---|
| **Theme/ Topic** | **Learning out comes At the end of this block, student will be able to:** | **Course content** | **% Weightage** | **Instr Strategies** | **Assessment tool** |
| **Basic of hearing and balance** | • Revisit the applied anatomy and physiology of hearing and balance as well as Eustachian tube and its role in hearing<br>• Recall the pathophysiology of vertigo | • Anatomy and physiology of hearing and balance<br>• Effects of Eustachian tube malfunction<br>• Pathophysiology of vertigo | **05%** | Problem based teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | MCQ/SAQ/ SEQ/ OSCE/ Structured Viva |
| **Discharge & Deafness** | Suggest a management plan for a patient with ear discharge after interpreting relevant investigations if needed | **Discharge Ear**<br>DD of Discharging Ear<br>Overview and Classification of Otitis Media<br>**<u>Diseases</u>***<br>• Acute Supparative Otitis Media<br>• Chronic Supparative Otitis Media<br>CSF Ottorrhoea<br><br>Bleeding from Ear [<br>Trauma Base of Skull | **40%** | Problem based teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | MCQ/SAQ/ SEQ/ OSCE/ Structured Viva |
| | • Differentiate between various types of deafness on the basis of history and examination<br>• Interpret appropriate investigations to reach the final diagnosis<br>• Suggest appropriate plan for treatment and rehabilitation | **Deafness**<br>Overview of Deafness<br>• Causes [Unilateral/Bilateral/Sudden/Children]<br>• DD<br>• Social/Medico legal aspects<br>**<u>Diseases Causing</u>**<br><u>Conductive deafness</u><br>• Wax<br>• FB<br>• Fluid in Middle Ear [ Sec OM]<br>• Trauma to ear [Traumatic | | Problem based teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | MCQ/SAQ/ SEQ/ OSCE/ Structured Viva |

| | | | | | |
|---|---|---|---|---|---|
| | • Retell medico legal and social aspects of deafness | Perforation of TM Haemotympanum/Os sicular disruption<br>• Otosclerosis<br>**<u>Diseases Causing Senso Neural Deafness</u>**<br>• Presbyacusis<br>• Drug Induced Deafness<br>• Noise Induced Deafness and Acoustic Trauma<br>Psychogenic Deafness<br>Deaf-Mutism in Children<br>Rehabilitation of the Deaf<br>Hearing Aid<br>Cochlear implant | | | |
| **Otalgia** | • Differentiate between referred otalgia and that arising from local conditions of ear<br>• Suggest appropriate treatment after the interpretation of relevant investigations if needed | **Causes and Differential Diagnosis of Otalgia**<br>*Eiology/ Pathogenesis, Signs Symptoms, Investigations, treatment Complications Follow-up<br>• Boil<br>• Otitis Externa<br>• Ac Otitis media<br>• Herpes Simplex<br>• Perichondritis<br>• Traumatic conditions of external and middle ears<br>• Referred otalgia<br>• Barotrauma<br>• Complications of CSOM<br>• Ca- Middle Ear?? | **20%** | Problem based teaching /practical sessions/tutorials<br>Clinical rotations, ward visits, lectures<br>CPC's and seminars | MCQ/SAQ/ SEQ/ OSCE/ Structured Viva |
| **Vertigo & Tinnitus** | 1. Differentiate between various types of vertigo in relation to its pathophysiology<br>2. Suggest appropriate treatment including rehabilitation after the interpretation of investigations if needed | **Overview of Vertigo**<br>• Differentiation between True rotator vertigo, Dizziness and Unsteadiness<br>• Causes of vertigo<br><u>Diseases Causing Vertigo</u><br>(BPPV,Vestibular Neuronitis,Meniere,S Disease) | **25%** | Problem based teaching /practical sessions/tutorials<br>Clinical rotations, ward visits, lectures<br>CPC's and seminars | MCQ/SAQ/ SEQ/ OSCE/ Structured Viva |
| | 3. Diagnose a case presenting with | **Overview of Tinnitus** | | Problem based | MCQ/SAQ/ SEQ/ |

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| | tinnitus on the basis of signs, symptoms and appropriate investigations<br>4. Suggest thorough management plan | • Causes of Tinnitus<br>• How to investigate and manage a case of Tinnitus<br>• Acoustic Neuroma | | teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | OSCE/ Structured Viva |
| **Facial disfigurement** | Identify the lesions of facial nerve relating to its etiology | • Anatomy of Facial Nerve<br>• Electrophysiological Test for Facial Nerve<br>• Differentiation between upper and lower motor Neuron lesion<br>• Causes and work-up in a case of Facial Paralysis<br>• Treatment/ Complications and Follow-up<br>• facial nerve palsy (secondary to ear surgery, trauma, bell's palsy and Attic disease), Unsafe chronic otitis media, Fracture Temporal bone | **10%** | Problem based teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | MCQ/SAQ/ SEQ/ OSCE/ Structured Viva |
| | Recognize the salient features of common tumors of Ear | Presentation, features and diagnosis of Basal cell carcinoma of pinna, Squamous cell carcinoma of external and middle ear, Glomus tumor and Acoustic neuroma | | Problem based teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | MCQ/SAQ/ SEQ/ OSCE/ Structured Viva |
| **Total** | | | **100** | | |
| **End Block/rotation Assessment to be taken by concerned institute itself**<br>**Assessment tools: MCQs & SAQs/SEQs/ OSCE** | | | | | |

| ENT – NOSE & PARANASAL SINUSES | | | | | |
|---|---|---|---|---|---|
| **Theme/Topic** | **Learning outcome** At the end of this block, student will be able to: | **Course Content** | **% Weightage** | **Instr Strategies** | **Assessment tool** |
| **Basic of Nose and Para nasal Sinuses** | Revisit the applied anatomy and physiology of nose and Paranasal sinuses | **Anatomy of Nose & Para-Nasal Sinuses**<br>• Basic concepts in clinical anatomy of nose & Para-nasal sinuses<br>• Anatomical routes of extensions of disease of nose and PNS into oral cavity, nose, orbit and skull base.<br>**Physiology of Nose & Para-Nasal Sinuses**<br>• Basic concepts in clinical physiology of nose & Para-nasal sinuses<br>• Patho-physiology and extensions of diseases of nose and PNS into oral cavity, nose orbit and skull base | **10%** | Problem based teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | MCQ/SAQ/ SEQ/ OSCE/ Structured Viva |
| **Nasal obstructions** | • Enlist different causes of unilateral and bilateral obstruction<br>• Suggest appropriate plan of investigations and management | **Overview of Nasal Obstruction [unilateral/Bilateral/Adults/Children/Neonate]**<br>Diseases causing Obstruction<br>• DNS<br>• Nasal Polypi [ in Children, adults, Elderly]<br>• FB Nose<br>• Septal Haematoma/Abscess<br>• ADENOIDS<br>• Obstructive Sleep Apnoea | **40%** | Problem based teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | MCQ/SAQ/ SEQ/OSCE/ Structured Viva |

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| | | • Congenital abnormalities as Choanal Atresia/ Menigocele /Encephalocele<br>• Tumors of Nose [Classification + special Emphasis on Angofibroma, Ca-Maxilla and Ca-Nasopharynx] | | | |
| **Discharge and Epistaxis** | • Differentiate between various types of Rhinitis on the basis of signs and symptoms<br>• Interpret necessary investigations<br>• Suggest symptomatic and curative treatment | • Overview of Rhinitis<br>Rhinitis*<br>○ Allergic rhinitis<br>○ Vasomotor Rhinitis<br>○ Infective rhinitis [Viral, Bacterial]<br>○ Rhinitis Medica Mentosa<br>○ Atrophic Rhinitis<br>○ Wegners Granuloma and list of other Granulomatous diseases<br>• Etiology of Nasal Allergy<br>• Symptoms and signs of Allergic Rhinitis.<br>• Examination of patients of Allergic Rhinitis.<br>• Investigation of Allergic Rhinitis<br>Symptomatic and curative treatment options | **30%** | Problem based teaching /practical sessions/tutorials<br>Clinical rotations, ward visits, lectures<br>CPC's and seminars | MCQ/SAQ/ SEQ/OSCE/ Structured Viva |
| | • Suggest thorough management plan in case of Epistaxis<br>• Suggests measures to | • Blood Supply of Nose<br>• Epistaxis<br>• Angiofibroma | | Problem based teaching /practical sessions/tutorials | MCQ/SAQ/SEQ/OSCE/ Structured Viva |

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| | control refractory epistaxis | | | Clinical rotations, ward visits, lectures CPC's and seminars | |
| **Headache and facial pains** | • Differentiate between various causes of Facial Pain and Headache on the basis of history and clinical examination<br>• Advise necessary investigations if needed<br>• Suggest appropriate treatment plan | Overview of Facial Pain and headache<br>**Acute and Chronic Sinusitis**<br>• Patho-physiology of sinus infection<br>• Signs and symptoms of sinus disease.<br>• Detailed Investigation of sinus infection / how to read a sinus CT scan<br>• Medical & Surgical treatment of sinus infection<br>• Basics of FESS its indication /procedure/ complications<br>**Complications of Sinusitis**<br>• Common orbital, nasal, oral, dental and intra-cranial complication of Sinus pathology and its management.<br>• Fungal Sinusitis and its management.<br>• Atypical facial pains<br>• Granulomatous diseases and Tumors<br>• Sinus barotrauma | **20%** | Problem based teaching /practical sessions/tutorials Clinical rotations, ward visits, lectures CPC's and seminars | MCQ/SAQ/ SEQ/OSCE/ Structured Viva |
| **Total** | | | **100** | | |
| **End Block/rotation Assessment to be taken by concerned institute itself**<br>**Assessment tools: MCQs & SAQs/SEQs/ OSCE** | | | | | |

| ENT - THROAT & LARYNX | | | | | |
|---|---|---|---|---|---|
| **Theme/Topic** | **Learning Outcomes** At the end of this block, student will be able to | **Course Contents** | **% Weightage** | **Instr Strategies** | **Assessment tool** |
| **Sore throat and pain** | • Manage acute and chronic tonsillitis<br>• Identify need of tonsillectomy in a case of chronic tonsillitis | **Acute & Chronic Tonsillitis**<br>• symptoms and signs of Acute and Chronic Tonsillitis<br>• important investigations<br>• medical and surgical treatment options<br>• Indications and technique of tonsillectomy | **40%** | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |
| | • Revisit the applied anatomy and physiology of pharynx | **Acute & Chronic Pharyngitis**<br>• Basic anatomy and physiology of pharynx and oesophagus and its clinical importance<br>symptoms, signs, investigations and management of sore throat and recurrent throat infections | | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |

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| | • Manage acute and chronic Pharyngitis<br>• Manage the common disorders of oral cavity<br>• Suspect a tumor of oropharynx on the basis of signs and symptoms | **Common disorders of oral cavity.**<br>Basic understanding of the common disorders of oral cavity | | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/** |
| | | **Tumors of Oro-pharynx**<br>• Common sites of tumor of oro-pharynx<br>• Symptoms, signs, investigations and management of these tumors | | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **SEQ/OSCE/ Structured Viva** |
| **Dysphagia and Odynophagia** | • Differentiate between various types of dysphagia basing on its etiology and patho physiology<br>• Suspect abscesses around the pharynx on the | **Dysphagia & Disorders of Oesophagus** –<br>• Normal swallowing mechanism<br>• Types of dysphagia<br>• Causes and patho-physiology of each cause<br>**Abscesses around Pharynx** (Retro-Pharyngeal Abscess & Peri-Tonsiller Abscess<br>• Symptoms of Acute Retero-pharyngeal abscess, and possible | **30%** | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |

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| | basis of symptoms and signs<br>• Suggest treatment for these abscesses<br>• Recognize mass arising from lateral margin of tongue<br>• Suggest different treatment modalities on the basis of biopsy | complications if this condition is not recognized in time<br>• Emergency investigations and management of this condition<br><br>**Oropharyngeal tumors**<br>Carcinoma Tongue & Oral Cavity CBL – symptoms, signs and examination of CA. Tongue emergency investigations and management of this condition | | | |
| **Hoarseness and stridor** | • Differentiate between different causes of hoarseness and stridor on the basis of signs and symptoms<br>• Outline relevant investigations<br>• Suggest treatment modalities for hoarseness and stridor | Congenital Lesions of Larynx & Stridor –<br>Basic differences between anatomy and physiology of larynx of a child as compared to the adult<br>Pathophysiology of congenital lesions of larynx | **20%** | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |
| | | Acute & Chronic Laryngitis CBL:<br>• Symptoms, signs and examination of Acute Laryngitis<br>• Emergency investigations and | | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |

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| | | management of this condition | | **CPC's and seminars** | |
| | | Laryngeal Paralysis, Voice & Speech Disorders –<br>• Patho-physiology of Laryngeal paralysis<br>• Patho-physiology of Voice and speech disorders | | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |
| | | Carcinoma of Larynx –<br>• symptoms, signs and examination of a patient suspected to have CA. Larynx<br>• emergency investigations and different management plan of this condition | | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |
| **Neck masses** | • Differentiate between different types of neck masses on the basis of signs and symptoms<br>• Advise relevant Investigations and management plan | • Distribution and drainage area of Neck Lymph Nodes<br>• DD of Lateral Neck Masses<br>• DD of Lymph Node enlargement in Neck<br>• Work-up for a suspected Metastatic Lymph Node<br>• Thyroid gland- | | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |

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| **Advances in ENT/Neck surgeries** | Reproduce the basic concept about recent trends in different ENT treatment modalities | Laser Surgery, Cryosurgery, HIV Infection/ AIDS & ENT Managements –<br>• Physics and physiology of LASER surgery and Cryosurgery<br>• Basics of HIV and AIDS infection<br><br>Radiotherapy / Chemotherapy for Head & Neck Cancers – Basics of Radiotherapy and Chemotherapy in head and neck cancers | **10%** | Problem based teaching /practical sessions/tutorials **Clinical rotations, ward visits, lectures CPC's and seminars** | **MCQ/SAQ/ SEQ/OSCE/ Structured Viva** |
| **Total** | | | **100** | | |
| **End Block/rotation Assessment to be taken by concerned institute itself**<br>**Assessment tools: MCQs & SAQs/SEQs/ OSCE** | | | | | |

## SCHEDULE OF CLINICAL TRAINING

| S. No | LEARNING OUTCOMES | ACTIVITY |
|---|---|---|
| | At the end of 09 weeks training, the student will be able to: | |
| | **Ear** | |
| 1 | **Special Skills**<br>➢ Take history of a patient with Ear pathology<br>➢ Demonstrate the use of Otoscope to aid in examination of the external auditory canal and the tympanic membrane and learn (Use of Seigle's speculum).<br>➢ Demonstrate the use of tuning forks and interpret the findings.<br>➢ Demonstrate Syringing of ear.<br>➢ Reproduce steps of recording tympanogram and hearing levels on audiogram<br>➢ Interpret audiogram and tympanogram<br>➢ Identify all common Ear instruments used in OPD | **OPD / Ward**<br>➢ Video clip of examination of ear.<br>➢ Demonstration of clinical examination of ear.<br>➢ Practical session of examination of ear<br>➢ Examination of ear on patients<br>➢ Assessment of Hearing<br>➢ Audiogram / Tympanogram, practical demonstration & discussion<br>**Instruments**<br>Students must be shown ear instruments used in OPD |
| 2 | ➢ Perform OT scrub for surgery according to the protocol<br>➢ Reproduce the procedure of the operations, mentioned in column III, including their indications and post-operative care<br>➢ Identify all common Ear instruments used in OT<br>➢ | **OT**<br>➢ How to enter the operation theatre.<br>➢ How to behave in OT<br>➢ Steps of washing and preparation for operation<br>➢ Students should observe the following operations<br>• Myringotomy<br>• I/D of hematoma ear<br>• Removal of Foreign body ear<br>• Removal of wax |

| | | |
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| | | • Myringoplasty and Mastoidectomy<br>• Abscess incision drainage/Hematoma ear<br><br>**Instruments**<br><br>➢ Students must be shown ear instruments used in above mentioned surgeries |
| **Nose** | | |
| 3 | **Special Skills**<br><br>➢ Take history of a patient with nasal pathology<br>➢ Perform basic examination of nose and paranasal sinuses in a stepwise fashion<br>➢ Diagnose a case of Nasal Polypi on the basis of glistening appearance of nasal polypi in anterior rhinoscopy<br>➢ Interpret a simple X-Ray / CT Scan for Sinus, Paranasal Sinus, Nasopharynx and other simple ENT pathologies<br>➢ Identify all common Nasal instruments used in OPD | **OPD / Ward**<br><br>➢ Examinatin of nose and para nasal sinuses. The steps and logic behind it<br>➢ Video clip of examination of nose and para nasal sinuses.<br>➢ Demonstration of nose and para nasal sinuses<br>➢ Practical session of examination of nose and para nasal sinuses in patients<br>➢ Nasal Polypi – demonstration on patient<br>➢ Simple X-Ray / CT Scan for Sinus, Paranasal Sinus, Nasopharynx and other simple ENT pathologies |

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|---|---|---|
| 4 | ➢ Reproduce the procedure of the operations, mentioned in column III, including their indications and post-operative care<br>➢ Identify all common Nasal instruments used in OT | **OT**<br>➢ Students should observe the following operations<br>➢ Tonsillectomy<br>➢ Adenoidectomy<br>➢ Septoplasty<br>➢ How to carry out anterior nasal packing<br>➢ Sinus lavage, electrocautery<br>➢ SMR, procedure, indications and post-operative care<br>➢ Observation of SMR procedure<br>➢ FESS, indications, procedure and post-operative care<br>➢ Observation of FESS procedure<br>➢ Epistaxis and its management<br>**Instruments**<br>Students must be shown instruments used in above mentioned surgeries |
| **Throat & Larynx** | | |
| 3 | **Special Skills**<br>➢ Take history of a patient with throat and laryngeal pathology<br>➢ Perform examination of throat<br>➢ Perform basic examination of larynx in a clinical setting<br>➢ Identify all common instruments used in OPD | **OPD / Ward**<br>➢ Clinical examination of throat, the steps and logic behind it<br>➢ Video clip of throat examination.<br>➢ Demonstration of examination of throat<br>➢ Practical session of examination of throat on patients<br>➢ Laryngeal Disorders – Ward demonstration |

| | | |
|---|---|---|
| 4 | ➢ Reproduce the procedure of the operations, mentioned in column III, including their indications and post-operative care<br>➢ Perform tracheostomy in emergency situations<br>➢ Identify all common instruments used in OT | **OT**<br>➢ Students should observe the following operations<br>• Tracheostomy, procedure, indications and post-operative care<br>**Instruments**<br>Students must be shown instruments used in above mentioned surgeries |
| **WARD TEST** | | |

# SECTION-IV

# Ophthalmology (EYE)

## Overview

1. **Introduction:**
   a. Minimum 150 hours are allocated to ophthalmology in the year IV. At least 30 hours are for theory content which is covered in lectures and CBLs in three blocks throughout the academic year. End block examination is taken at the end of each block by the respective institute which is counted in internal assessment at the end of fourth year.
   b. Minimum 120 hours are for clinical training in outpatient and indoor patients' departments, which is covered in 09 weeks of clinical rotation. TOACS / Mock exam is held at the end of clinical rotation which is counted in internal assessment at the end of fourth year. Log book is maintained during the rotation
   c. Each group would spend four days a week in ophthalmology for at least 3.5 hours daily.
   d. Pre annual examination of theory and clinical is taken on the pattern of fourth professional.

2. **General Outcome**

   General outcome of this teaching is to equip the average student with minimum essential knowledge, skill and attitude to make him enable to **-:**

   a. Identify common ophthalmological diseases specially emergencies, provide primary health care, refer to an appropriate center and do the follow-up of patients of his area.
   b. Perform minor procedures safely and be capable to communicate effectively with patient and family regarding disease and its relevant issues.
   c. Understand ethics specially to maintain patient confidentiality

3. **Instructional Strategy**
   a. Instructional strategy to achieve above-mentioned goals will be
   b. Interactive lectures
   c. Small group discussions
   d. Problem based teaching
   e. Clinical rotations, ward visits
   f. Tutorials
   g. CPCs and seminars

4. **Skills**

   By the end of the rotation in the Department of Ophthalmology, the student should be able to:
   a. Obtain an appropriate history
   b. Perform routine examination
   c. Identify common eye problems for a given patient and
   d. Outline appropriate management plans.

# OPHTHALMOLOGY - BLOCK I

**CODE- Y4B1**

**Written Internal Assessment**

**Duration: 12 Weeks**

**By the end of Block-1, the Student will be able to:**

| Theme | Learning Outcomes | Contents | Weightage % |
|---|---|---|---|
| **Eye Lid & adnexa** | Identify conditions like ptosis, lid Tumors and benign lesions, Entropion, Ectropion , dry eyes etc based on their clinical assessment and make a referral to ophthalmologist. | Ptosis and its classification, Blephritis, lid tumors & benign lesions, Entropion, Ectropion, Acute and chronic dacrocystitis, evaluation of dry eye | 30 |
| **Conjunctiva, Episclera& sclera** | 1. Recognize conditions like Pterygium,Pingecula, conjunctivitis episcleritis and scleritis<br>2. Identify red eye causing common conditions for their initial management. | Bacterial, Viral Allergic, and other types of conjunctivitis, Pterygium, Pingecula, Ophthalmianeonatorum, Episcleritis, Scleritis. | 30 |
| **Orbit** | 1. Recognize proptosis and its common causes like thyroid eye disease, orbital inflammatory disease and orbital tumors.<br>2. Advise common investigations required for its evaluation. | Proptosis and its common causes, Thyroid eye disease.<br>Orbital tumors, Cellulitis | 20 |

| | | | |
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| | 3. Summarize various medical and surgical management options. | | |
| **Uveitis** | 1. Identify uveitis as a cause of decreased vision.<br>2. Recognize signs and symptoms of acute uveitis for giving its initial treatment | Uveitis and its Classification<br>Acute Anterior uveitis and its initial treatment | 20 |
| **End Block Assessment** | **End Block Assessment to be taken by concerned institute itself**<br>**Assessment tools: MCQs & SAQs/SEQs** | | |

| OPHTHALMOLOGY - BLOCK II | | | |
|---|---|---|---|
| **CODE- Y4B2** | | | |
| **Written Internal Assessment** | | | |
| **Duration: 12 Weeks** | | | |
| **By the end of Block-2, the Student will be able to:** | | | |
| **Theme** | **Learning Outcomes** | **Contents** | **Weightage/ %** |
| **Corneal Diseases** | • Identify corneal ulcers for giving initial treatment.<br>• Summarize principles of corneal disease management. | Bacterial, Fungal, Viral, Corneal Ulcers and use of antibiotics/ cycloplegics<br>Keratoconus | 20 |
| **Lens** | • Identify different types of cataract and recognize type of visual deterioration in each type of cataract.<br>• Justify different types of surgical options of cataract including phacoemulsification<br>• Indicate possible complications of cataract Surgery | Types of cataracts and their evaluation,<br>ECCE/ Phaco emulsification,<br>Complications of cataract Surgery | 30 |
| **Refractive errors& Refractive Surgery** | • Identify common refractive conditions of the eye like myopia, hypermetropia and astigmatism<br>• Summarize various treatment options. | • Refractive Errors- Types and Management<br>• Introduction to refractive surgery and keratoplasty | 20 |
| **Glaucoma and ocular therapeutics** | • Differentiate between various types of Glaucoma,its clinical signs, investigations, common VF defects and various anti Glaucoma medications.<br>• Enlist other options of Glaucoma management including laser filtration | Types of glaucoma & Evaluation, Classification, POAG, PACG, Surgery, Drugs,<br>Lasers to treat glaucoma | 30 |

| | | | |
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| | surgery, cyclo-destructive procedures and implants.<br>• Identify shallow anterior chamber for avoiding mydriatic eye drops to prevent acute congestive glaucoma.<br>• Suggest emergency treatment of acute angle closure glaucoma. | | |
| **End Block Assessment** | **End Block Assessment to be taken by concerned institute itself Assessment tools: MCQs & SAQs/SEQs** | | |

# OPHTHALMOLOGY – BLOCK- III

**CODE- Y4B3**

**Written Internal Assessment**

**Duration: 12 Weeks**

**By the end of Block-3 , the Students will be able to :**

| Topics | Learning Outcomes | Contents | Weightage/ % |
|---|---|---|---|
| **Retinal vascular diseases, Retinal Detachment,**<br>**Common Fundus Pathologies,** | 1. Correlate symptoms with signs of retinal vascular diseases, ocular tumors and fundus pathologies<br>2. Identify retinal disorder as a cause of reduce vision.<br>3. Suggest common treatment option of retinal diseases.<br>4. Discuss broad outline of management of RD, diabetic retinopathy and AMD and use of lasers in ophthalmology | Conditions affecting retinal vasculature and their Evaluation, Hypertensive Retinopathy, Diabetic Retinopathy, CRVO, BRVO, CRAO, AMD, RP<br>Types of retinal detachment, clinical exam, investigations and surgical options<br>Vitrectomy and its<br>Indications use of lasers | 40 |
| **Strabismus**<br>**&**<br>**Neuro Ophthalmology** | 1. Differentiate between comitant and non-comitant strabismus<br>2. Perform cover & uncover test.<br>3. Enlist surgical and non-surgical treatment of strabismus.<br>4. Reproduce Cranial nerve pathway and nerve supply of extra ocular muscles<br>5. Enlist relevant laboratory investigations and imaging & surgical and non-surgical treatment options. | Types of squint and its Management,<br>Cranial nerves palsies, tumors, papilledema, visual field in various optic pathway lesions<br>Pupillary disorders associated with nerve palsies and systemic diseases. | 30 |

| | | | |
|---|---|---|---|
| **Ocular trauma & Emergencies** | 1. Differentiate between penetrating and non-penetrating ocular injuries.<br>2. Discuss different types of chemicals damaging eye (Acid/alkali/Alcohol/elfy) and its symptoms and signs.<br>3. Manage chemical injuries of the eye Identify ophthalmic emergencies and their management | Types of ocular injuries initial Evaluation and management of ocular trauma and<br>Chemical injury<br>Red eye<br>• Painful<br>• Painless<br>Causes of sudden Vision loss<br>• Painful<br>• Painless | 30 |
| **Total** | | | **100** |
| **End Block Assessment** | **End Block Assessment to be taken by concerned institute itself Assessment tools: MCQs & SAQs/SEQs** | | |

## Clinical Trg / List of Competencies

| **Learning Outcomes** | **List of Competencies** |
|---|---|
| **By the end of 08 weeks clinical rotation, the Students will be able to:** | |
| Establish rapport with the patient | How to greet and council Patients? |
| Assess level of vision | Visual Acuity Adults), colour vision, |
| Examine visual field by confrontation | Visual Fields |
| Examine anterior segments | Torch/Slit lamp examination |
| Describe common eye drops keeping in mind contraindications of dilating drops | Ocular Pharmacology |
| Enlist common ophthalmic instruments Like cataract surgery instruments, DCR surgery instruments, Ophthalmoscope, retinoscope etc | Ophthalmic Instruments |
| Enumerate laser use in ophthalmology | Introduction to Lasers |

| | |
|---|---|
| Enlist helpful investigation | Ocular Investigations an overview |
| Identification of squint | Ocular movements and squint assessment |
| Examine the pupils | Pupillary Reactions |
| Observe common Ophthalmic surgical procedures/ Instruments including Cataract, Glaucoma, Oculoplastics, Retinal Detachment and other common procedures and instruments. | common Ophthalmic surgical procedures/ Instruments |
| How to use Ophthalmoscope/Retinoscope - basic methods | Perform Ophthalmoscopy steps |

## PATIENT SAFETY

**Total contact hours: 25 hours in 4th year**

**Preamble:** Patient safety is the prevention of errors and adverse effects to patients associated with health care". Patient safety is about being mindful of an expectation that mistakes can happen and consistently looking to prevent them

This document provides guidelines for MBBS/BDS students so that they can understand the importance of patient safety and apply their knowledge to reduce the incidence of medical errors and adverse events in clinical settings

| Topics | Learning Outcomes | Course Content |
|---|---|---|
| **Introduction to Patient Safety** | Recognize adverse events occurring in clinical settings and ensure patients' safety | • Understanding Adverse Events and Patient Safety<br>• Your Role in a Culture of Safety<br>• Your Role in Building Safer, More Reliable Systems |
| **From Error to Harm** | Prevent the occurrence of errors to avoid patients' harm | • The Swiss Cheese Model<br>• Understanding Unsafe Acts<br>• A Closer Look at Harm |
| **Human Factors and Safety** | Design Principles to reduce Human Error and ensure safety | • Understanding the Science of Human Factors<br>• Principles to Reduce Human Error<br>• The Risks and Rewards of Technology |
| **Teamwork and Communication** | Practice team work and effective communication | • Fundamentals of Teamwork and Communication<br>• Tools and Techniques for Effective Communication<br>• Safety During Transitions Across the Continuum of Care |

| | | |
|---|---|---|
| **Responding to Adverse Events** | Effectively respond to an adverse event through effective communication | • Responding to an Adverse Event: A Step-by-Step Approach<br>• Communication, Apology, and Resolution |
| **Root Cause Analyses and Actions** | Analyze the adverse event and act accordingly | • Preparing for Root Cause Analyses and Actions<br>• Conducting Root Cause Analyses<br>• Actions to Build Safer Systems |
| **Achieving Total Systems Safety** | Accomplish total system safety | • Eight Recommendations for Total Systems Safety<br>• Supporting the Health Care Workforce with Patients and Families |
| **Pursuing Professional Accountability and a Just Culture** | Improve organizational culture | • A Just Culture Case Study<br>• Building a Culture of Safety<br>• Understanding and Improving Organizational Culture |

**Responsibility**: Because safety of the patient and infection control is a joint responsibility, students should be taught by experts from various relevant disciplines.

**Proposed Teaching Strategies**: Some of the suggested methods of teaching are:

1. Bedside / chair-side teaching
2. Demonstrations and discussions in laboratories, wards, clinics, emergency rooms, operation theatres etc.
3. Independent, guided learning
4. Lectures
5. Practice in Skills Lab (for example as role plays/ simulation)
6. Small group discussions (as case-based learning or reflective writing sessions)
7. Team-based learning
8. Tutorials
9. Workshops (e.g. aseptic techniques)

**Assessment**:

Formative assessment: Skill lab, end of rotation tests

Summative assessment:

Practical with clinical subjects

OSCE = 1 x station in Medicine

1 x station in Surgery