



# Study Guide

**FOURTH PROFESSIONAL MBBS**

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**STUDY GUIDE**

**Pathology**

**4th PROFESSIONAL MBBS**



**Pak Red Crescent Medical & Dental College**

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48-KM Multan Road, Lahore-Pakistan.

TITLE	PATHOLOGY
INTRODUCTION	<p>Pathology is a branch of medical science that involves the study and diagnosis of disease through the examination of samples from organs, tissues and body fluids. Pathology not only helps in making diagnosis of various diseases but it also explains pathophysiology of diseases including risk factors, etiology and mechanism of progression at microscopic level. It is the bridge between science and medicine. Pathology is further divided into four disciplines: Microbiology, Chemical Pathology, Hematology and Histopathology. These four disciplines are included in the medical lessons for medical students. A medical student should have a sound knowledge of various aspects of pathology to understand basic mechanisms of disease and its clinical expression of symptoms as correct diagnosis of disease depends upon correlation of various signs and symptoms. Medical students should also know about gross and microscopic pathological features related to infective, inflammatory and neoplastic diseases; these are the major part of the basic sciences of medicine and surgery. Many of the clinical specialists consider having enough knowledge of pathology a prerequisite for performing safe and competent interventions in medicine and surgery. It is very important for medical students to learn various aspects of pathology practically to develop directed clinical approach. No doubt, having a sound knowledge of pathology, could lead them towards excellence in their clinical skills.</p>
Target Students	4th year MBBS
Course to be studied in Fourth year MBBS	<ul style="list-style-type: none"> <li>• Blood Vessels</li> <li>• The Heart</li> <li>• Diseases of White Blood Cells, Lymph Nodes, Spleen, and Thymus</li> <li>• Red Blood Cell and Bleeding Disorders</li> <li>• The Lung</li> <li>• Head and Neck</li> <li>• The Gastrointestinal Tract</li> <li>• Liver and Gallbladder</li> <li>• The Pancreas</li> <li>• The Kidney</li> <li>• The Lower Urinary Tract and Male Genital System</li> <li>• The Female Genital Tract</li> <li>• The Breast</li> <li>• The Endocrine System</li> <li>• The Skin</li> <li>• Bones, Joints, and Soft Tissue Tumor</li> <li>• Peripheral Nerves and Skeletal Muscles</li> <li>• The Central Nervous System</li> </ul>

Assessment	<ul style="list-style-type: none"> <li>• By Professional exams, MCQs, SEQs, Viva and practical exam</li> </ul>
Recommended Book	Pathologic Basis of Disease by Robbins & Cotran
Course Title	<b>1. BLOOD VESSELS</b>
Duration	2.5 weeks
Out comes	<ul style="list-style-type: none"> <li>• Know the diseases of blood vessels.</li> <li>• Know the diseases of heart.</li> <li>• Diagnose and interpret diseases of cardiovascular system.</li> </ul>
Objectives	<p><b>At the end of the course, student must be able to:</b></p> <p>Structure and Function of Blood Vessels</p> <ul style="list-style-type: none"> <li>• Vascular Organization</li> <li>• Endothelial Cells</li> </ul> <p>Vascular Smooth Muscle Cells</p> <p>Congenital Anomalies</p> <p>Blood Pressure Regulation &amp; Hypertensive Vascular Disease</p> <ul style="list-style-type: none"> <li>• Epidemiology of Hypertension</li> <li>• Mechanisms of Essential Hypertension</li> <li>• Vascular Wall Response to Injury</li> <li>• Intimal Thickening: A Stereotypical Response to Vascular Injury</li> </ul> <p>Arteriosclerosis</p> <p>Atherosclerosis</p> <ul style="list-style-type: none"> <li>• Epidemiology of Atherosclerosis</li> </ul> <p>Clinicopathologic Consequences of Atherosclerosis</p> <p>Aneurysms and Dissections</p> <ul style="list-style-type: none"> <li>• Abdominal Aortic Aneurysm</li> <li>• Thoracic Aortic Aneurysm</li> </ul> <p>Aortic Dissection</p> <p>Vasculitis</p> <ul style="list-style-type: none"> <li>• Noninfectious Vasculitis</li> </ul> <p>Infectious Vasculitis</p> <p>Disorders of Blood Vessel Hyperreactivity</p> <ul style="list-style-type: none"> <li>• Raynaud Phenomenon</li> </ul> <p>Myocardial Vessel Vasospasm</p>

	<ul style="list-style-type: none"> <li>• Thrombophlebitis and Phlebothrombosis</li> </ul> <p>Superior and Inferior Vena Cava Syndromes</p> <p>Lymphangitis and Lymphedema</p> <p>Tumors</p> <ul style="list-style-type: none"> <li>• Benign Tumors and Tumor-Like Conditions</li> <li>• Intermediate-Grade (Borderline) Tumors</li> </ul> <p>Malignant Tumors</p> <p>Pathology of Vascular Intervention</p> <ul style="list-style-type: none"> <li>• Endovascular Stenting</li> </ul> <p>Vascular Replacement</p>
<p><b>Course Title</b></p>	<p><b>2. HEART</b></p>
<p><b>Duration</b></p>	<p>2.5 weeks</p>
<p><b>Out comes</b></p>	<ul style="list-style-type: none"> <li>• Know the development and maintenance of hemopoietic tissues.</li> <li>• Know leucopenia.</li> <li>• Describe the reactive disorders of white blood cells.</li> <li>• Describe the neoplastic disorders of white blood cells.</li> <li>• Know disorders of spleen.</li> <li>• Know the clinical presentation of different disorders of white blood cells, lymph nodes, spleen and thymus.</li> </ul>
<p><b>Objectives</b></p>	<p><b>At the end of the course, student must be able to:</b></p> <p>. Heart Failure</p> <ul style="list-style-type: none"> <li>• Left-Sided Heart Failure</li> <li>• Right-Sided Heart Failure</li> <li>• Malformations Associated With Left-to-Right Shunts</li> <li>• Malformations Associated With Right-to-Left Shunts</li> <li>• Malformations Associated With Obstructive Lesions</li> </ul> <p>Ischemic Heart Disease</p> <ul style="list-style-type: none"> <li>• Angina Pectoris</li> <li>• Myocardial Infarction</li> <li>• Chronic Ischemic Heart Disease</li> <li>• Cardiac Stem Cells</li> <li>• Arrhythmias</li> <li>• Sudden Cardiac Death</li> </ul> <p>Hypertensive Heart Disease</p> <ul style="list-style-type: none"> <li>• Systemic (Left-Sided) Hypertensive Heart Disease</li> </ul>

	<ul style="list-style-type: none"> <li>• Pulmonary Hypertensive Heart Disease—Cor Pulmonale</li> </ul> <p>Valvular Heart Disease</p> <ul style="list-style-type: none"> <li>• Degenerative Valve Disease</li> <li>• Rheumatic Valvular Disease</li> <li>• Infective Endocarditis</li> </ul> <ul style="list-style-type: none"> <li>• Noninfected Vegetations</li> </ul> <p>Cardiomyopathies and Myocarditis</p> <ul style="list-style-type: none"> <li>• Dilated Cardiomyopathy</li> <li>• Arrhythmogenic Right Ventricular cardiomyopathy</li> <li>• Hypertrophic Cardiomyopathy</li> <li>• Restrictive Cardiomyopathy</li> </ul> <ul style="list-style-type: none"> <li>• Myocarditis</li> <li>• Pericardial Disease</li> <li>• Pericardial Effusion and Hemopericardium</li> </ul> <ul style="list-style-type: none"> <li>• Pericarditis</li> <li>• Cardiac Tumors</li> <li>• Primary Neoplasms</li> </ul> <ul style="list-style-type: none"> <li>• Cardiac Effects of Noncardiac Neoplasms</li> </ul> <p>Cardiac Transplantation</p>
<p><b>Course title</b></p>	<p><b>3. HEMATOPOIETIC AND LYMPHOID SYSTEM</b></p>
<p><b>Duration</b></p>	<p>3 weeks</p>
<p><b>Outcomes</b></p>	<ul style="list-style-type: none"> <li>• Know the development and maintenance of hemopoietic tissues.</li> <li>• Based on their knowledge can understand morphology of red blood cells.</li> <li>• Identify and diagnose common types of anemias.</li> </ul>
<p><b>Objectives:</b></p>	<p><b>At the end of the course, student must be able to:</b></p> <p><b>Red Cell Disorders</b></p> <ul style="list-style-type: none"> <li>• Anemia of Blood Loss: Hemorrhage</li> <li>• Hemolytic Anemia</li> <li>• Hereditary Spherocytosis</li> <li>• Sickle Cell Anemia</li> <li>• Thalassemia</li> <li>• Glucose-6-Phosphate Dehydrogenase Deficiency</li> <li>• Paroxysmal Nocturnal Hemoglobinuria</li> <li>• Immuno-hemolytic Anemia</li> <li>• Hemolytic Anemia Resulting From Mechanical Trauma to Red Cells</li> <li>• Malaria</li> <li>• Anemia of Diminished Erythropoiesis</li> <li>• Iron Deficiency Anemia</li> <li>• Anemia of Chronic Inflammation</li> <li>• Megaloblastic Anemias</li> <li>• Aplastic Anemia</li> <li>• Myelophthisic Anemia</li> </ul>

	<p>Polycythemia</p> <p><b>White Cell Disorders</b></p> <ul style="list-style-type: none"> <li>• Nonneoplastic Disorders of White Cells</li> <li>• Leukopenia</li> <li>• Reactive Leukocytosis</li> <li>• Reactive Lymphadenitis</li> <li>• Neoplastic Proliferations of White Cells</li> <li>• Lymphoid Neoplasms</li> <li>• Myeloid Neoplasms</li> </ul> <p>Histiocytic Neoplasms</p> <p><b>Bleeding Disorders</b></p> <ul style="list-style-type: none"> <li>• Disseminated Intravascular Coagulation</li> <li>• Thrombocytopenia</li> <li>• Immune Thrombocytopenic Purpura</li> <li>• Heparin-Induced Thrombocytopenia</li> <li>• Thrombotic Microangiopathies: Thrombotic Thrombocytopenic Purpura and Hemolytic Uremic Syndrome</li> <li>• Coagulation Disorders</li> </ul> <p>Deficiencies of Factor VIII–von Willebrand Factor Complex</p> <p><b>Complications of Transfusion</b></p> <ul style="list-style-type: none"> <li>• Allergic Reactions</li> <li>• Hemolytic Reactions</li> <li>• Transfusion-Related Acute Lung Injury</li> </ul> <p>Infectious Complications</p> <p><b>Disorders of the Spleen and Thymus</b></p> <ul style="list-style-type: none"> <li>• Splenomegaly</li> <li>• Disorders of the Thymus</li> <li>• Thymic Hyperplasia</li> </ul> <p>Thymoma</p>
<b>Course Title</b>	<b>4. LUNG</b>
Duration	0.25 week
Outcomes	<ul style="list-style-type: none"> <li>• Can identify healthy donors.</li> <li>• Promote safe blood transfusion.</li> </ul>
Objectives:	<p><b>At the end of the course, student must be able to:</b></p> <ul style="list-style-type: none"> <li>• Atelectasis (Collapse)</li> <li>• Acute Respiratory Distress Syndrome</li> <li>• Obstructive Versus Restrictive Pulmonary Diseases</li> <li>• Obstructive Lung (Airway) Diseases</li> <li>• Emphysema</li> <li>• Chronic Bronchitis</li> <li>• Asthma</li> <li>• Bronchiectasis</li> </ul>

	<ul style="list-style-type: none"> <li>• Chronic Interstitial (Restrictive, Infiltrative) Lung Disease</li> <li>• Fibrosing Diseases</li> <li>• Granulomatous Diseases</li> <li>• Pulmonary Eosinophilia</li> <li>• Smoking-Related Interstitial Diseases             <ul style="list-style-type: none"> <li>• Pulmonary Diseases of Vascular Origin</li> <li>• Pulmonary Embolism, Hemorrhage, and Infarction</li> <li>• Pulmonary Hypertension</li> </ul> </li> <li>• Diffuse Alveolar Hemorrhage Syndromes</li> <li><b>Pulmonary Infections</b> <ul style="list-style-type: none"> <li>• Community-Acquired Bacterial Pneumonias</li> <li>• Community-Acquired Viral Pneumonias</li> <li>• Hospital-Acquired Pneumonias</li> <li>• Aspiration Pneumonia</li> <li>• Lung Abscess</li> <li>• Chronic Pneumonias</li> <li>• Tuberculosis</li> <li>• Histoplasmosis, Coccidioidomycosis, and Blastomycosis</li> <li>• Pneumonia in the Immunocompromised Host</li> <li>• Opportunistic Fungal Infections</li> </ul> </li> <li>• Pulmonary Disease in Human Immunodeficiency Virus Infection</li> <li><b>Lung Tumors</b> <ul style="list-style-type: none"> <li>• Carcinomas</li> </ul> </li> <li>• Carcinoid Tumors</li> <li><b>Pleural Lesions</b> <ul style="list-style-type: none"> <li>• Pleural Effusion and Pleuritis</li> <li>• Pneumothorax, Hemothorax, and Chylothorax</li> </ul> </li> <li>• Malignant Mesothelioma</li> <li>Lesions of the Upper Respiratory Tract             <ul style="list-style-type: none"> <li>• Acute Infections</li> <li>• Nasopharyngeal Carcinoma</li> </ul> </li> <li>• Laryngeal Tumors</li> </ul>
<p><b>Course Title</b></p>	<p><b>5. KIDNEY, ITS COLLECTING SYSTEM AND LOWER URINARY SYSTEM</b></p>
<p><b>Duration</b></p>	<p>0.25 week</p>
<p><b>Outcomes</b></p>	<ul style="list-style-type: none"> <li>• Have a knowledge of coagulation tests.</li> <li>• Identify bleeding disorders</li> </ul>
<p><b>Objectives:</b></p>	<p><b>At the end of the course, student must be able to:</b></p> <ul style="list-style-type: none"> <li>• Clinical Manifestations of Renal Diseases</li> <li>• Glomerular Diseases</li> </ul> <p>Mechanisms of Glomerular Injury and Disease</p> <p><b>Diseases Affecting Tubules and Interstitium</b></p> <ul style="list-style-type: none"> <li>• Tubulointerstitial Nephritis</li> </ul> <p>Acute Tubular injury/Necrosis</p>

	<p><b>Diseases Involving Blood Vessels</b></p> <ul style="list-style-type: none"> <li>• Nephrosclerosis</li> <li>• Malignant Hypertension</li> </ul> <p>Thrombotic microangiopathies</p> <ul style="list-style-type: none"> <li>• Chronic Kidney Disease</li> <li>• Cystic Diseases of the Kidney</li> <li>• Simple Cysts</li> <li>• Autosomal Dominant (Adult) Polycystic Kidney Disease</li> <li>• Autosomal Recessive (Childhood) Polycystic Kidney Disease</li> </ul> <p>Medullary Diseases With Cysts</p> <ul style="list-style-type: none"> <li>• Urinary Outflow Obstruction</li> <li>• Renal Stones (Urolithiasis)</li> <li>• Hydronephrosis</li> </ul> <p>Congenital and Developmental Anomalies</p> <p>Neoplasms of the Kidney</p> <p>Ureter, Bladder, and Urethra</p> <p>Urinary Bladder</p>
<p><b>Course Title</b></p>	<p><b>6. ORAL CAVITIES AND GASTROINTESTINAL TRACT</b></p>
<p><b>Duration</b></p>	<p>1.5 Weeks</p>
<p><b>Learning Out comes</b></p>	<ul style="list-style-type: none"> <li>• Have a knowledge of lung diseases including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
<p><b>Learning Objectives</b></p>	<p><b>At the end of the course student must be able to:</b></p> <p><b>Oral Cavity</b></p> <ul style="list-style-type: none"> <li>• Diseases of Teeth and Supporting Structures</li> <li>• Oral Inflammatory Lesions</li> <li>• Aphthous Ulcers (Canker Sores)</li> <li>• Herpes Simplex Virus Infections</li> <li>• Oral Candidiasis (Thrush)</li> <li>• Proliferative and Neoplastic Lesions of the Oral Cavity</li> <li>• Fibrous Proliferative Lesions</li> <li>• Leukoplakia and Erythroplakia</li> </ul> <p>Squamous Cell Carcinoma</p> <ul style="list-style-type: none"> <li>• Diseases of Salivary Glands</li> <li>• Xerostomia</li> <li>• Sialadenitis</li> <li>• Neoplasms</li> </ul> <p>Odontogenic Cysts and Tumors</p> <p><b>Esophagus</b></p> <ul style="list-style-type: none"> <li>• Obstructive and Vascular Diseases</li> <li>• Mechanical Obstruction</li> </ul>

	<ul style="list-style-type: none"> <li>• Functional Obstruction</li> <li>• Ectopia</li> <li>• Esophageal Varices</li> <li>• Esophagitis</li> <li>• Esophageal Lacerations, Mucosal Injury, and Infections</li> <li>• Reflux Esophagitis</li> <li>• Eosinophilic Esophagitis</li> <li>• Barrett Esophagus</li> <li>• Esophageal Tumors</li> <li>• Adenocarcinoma</li> </ul> <p>Squamous Cell Carcinoma</p> <p><b>Stomach</b></p> <ul style="list-style-type: none"> <li>• Gastropathy and Acute Gastritis</li> <li>• Stress-Related Mucosal Disease</li> <li>• Chronic Gastritis</li> <li>• Helicobacter pylori Gastritis</li> <li>• Autoimmune Gastritis</li> <li>• Complications of Chronic Gastritis</li> <li>• Peptic Ulcer Disease</li> </ul> <p>Mucosal Atrophy and Intestinal Metaplasia</p> <ul style="list-style-type: none"> <li>• Dysplasia</li> <li>• Gastric Polyps and Tumors</li> <li>• Gastric Polyps</li> <li>• Gastric Adenocarcinoma</li> <li>• Lymphoma</li> <li>• Neuroendocrine (Carcinoid) Tumor</li> </ul> <p>Gastrointestinal Stromal Tumor</p> <p><b>Small and Large Intestines</b></p> <ul style="list-style-type: none"> <li>• Intestinal Obstruction</li> <li>• Intussusception</li> <li>• Hirschsprung Disease</li> <li>• Abdominal Hernia 609</li> </ul> <p>Vascular Disorders of Bowel</p> <ul style="list-style-type: none"> <li>• Ischemic Bowel Disease</li> </ul> <p>Hemorrhoids</p> <ul style="list-style-type: none"> <li>• Diarrheal Disease</li> <li>• Malabsorptive Diarrhea</li> <li>• Infectious Enterocolitis</li> <li>• Inflammatory Intestinal Disease</li> <li>• Sigmoid Diverticulitis</li> </ul> <p>Inflammatory Bowel Disease</p> <p><b>Colonic Polyps and Neoplastic Disease</b></p> <ul style="list-style-type: none"> <li>• Inflammatory Polyps</li> <li>• Hamartomatous Polyps</li> <li>• Hyperplastic Polyps</li> </ul>
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	<ul style="list-style-type: none"> <li>• Adenomas</li> </ul> <p>Familial Syndromes Adenocarcinoma</p> <p><b>Appendix</b></p> <ul style="list-style-type: none"> <li>• Acute Appendicitis</li> </ul> <p>Tumors of the Appendix</p>
<b>Title</b>	<b>7. LIVER AND GALLBLADDER</b>
<b>Duration</b>	1 week
<b>Learning Out comes</b>	<ul style="list-style-type: none"> <li>• Have a knowledge of diseases of Head &amp; Neck including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
<b>Learning Objectives</b>	<p><b>At the end of the course student must be able to understand:</b></p> <ul style="list-style-type: none"> <li>• General Features of Liver Disease</li> <li>• Mechanisms of Injury and Repair</li> <li>• Liver Failure</li> <li>• Infectious Disorders</li> <li>• Viral Hepatitis</li> <li>• Bacterial, Parasitic, and Helminthic Infections</li> <li>• Autoimmune Hepatitis</li> <li>• Drug- and Toxin-Induced Liver Injury</li> <li>• Alcoholic and Nonalcoholic Fatty Liver Disease</li> <li>• Alcoholic Liver Disease</li> <li>• Nonalcoholic Fatty Liver Disease</li> <li>• Inherited Metabolic Liver Diseases</li> <li>• Hemochromatosis</li> <li>• Wilson Disease</li> <li>• <math>\alpha</math>1-Anti-Trypsin Deficiency</li> <li>• Cholestatic Syndromes</li> <li>• Bilirubin and Bile Formation</li> <li>• Pathophysiology of Jaundice</li> <li>• Defects in Hepatocellular Bilirubin Metabolism</li> <li>• Cholestasis</li> <li>• Neonatal Cholestasis</li> <li>• Biliary Atresia</li> <li>• Autoimmune Cholangiopathies</li> </ul> <p><b>Circulatory Disorders</b></p> <ul style="list-style-type: none"> <li>• Impaired Blood Flow Into the Liver</li> <li>• Impaired Blood Flow Through the Liver</li> <li>• Hepatic Venous Outflow Obstruction</li> <li>• Passive Congestion and Centrilobular Necrosis</li> </ul> <p>Nodules and Tumors</p>

	<ul style="list-style-type: none"> <li>• Focal Nodular Hyperplasia</li> <li>• Benign Neoplasms</li> <li>• Malignant Neoplasms</li> </ul> <p><b>Gallbladder</b></p> <ul style="list-style-type: none"> <li>• Gallstone Disease</li> <li>• Cholecystitis</li> <li>• Acute Calculous Cholecystitis</li> <li>• Acute Acalculous Cholecystitis</li> <li>• Chronic Cholecystitis</li> <li>• Carcinoma of the Gallbladder</li> </ul>
<b>Title</b>	<b>8. PANCREAS</b>
<b>Duration</b>	2.5 Weeks
<b>Learning Out comes</b>	<ul style="list-style-type: none"> <li>• Have a knowledge of diseases of Gastrointestinal Tract including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
	<p><b>At the end of the course student must be able to:</b></p> <ul style="list-style-type: none"> <li>• Congenital Anomalies</li> <li>• Agenesis</li> <li>• Pancreas Divisum</li> <li>• Annular Pancreas</li> <li>• Ectopic Pancreas</li> <li>• Congenital Cysts</li> </ul> <p>Pancreatitis</p> <ul style="list-style-type: none"> <li>• Acute Pancreatitis</li> </ul> <p>Chronic Pancreatitis</p> <p>Pancreatic Neoplasms</p> <ul style="list-style-type: none"> <li>• Cystic Neoplasms</li> </ul> <p>Pancreatic Carcinoma</p>
<b>Title</b>	<b>9. MALE GENITAL SYSTEM</b>
<b>Duration</b>	3 Weeks
<b>Learning Out comes</b>	<ul style="list-style-type: none"> <li>• Have a knowledge of diseases of Liver and Gall Bladder including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
<b>Learning Objectives</b>	<p><b>At the end of the course student should be able to:</b></p> <p>Penis</p> <ul style="list-style-type: none"> <li>• Malformations</li> <li>• Inflammatory Lesions</li> <li>• Neoplasms</li> </ul> <p>Scrotum, Testis, and Epididymis</p> <ul style="list-style-type: none"> <li>• Cryptorchidism and Testicular Atrophy</li> </ul>

	<ul style="list-style-type: none"> <li>• Inflammatory Lesions</li> <li>• Vascular Disturbances</li> </ul> <p>Testicular Neoplasms</p> <p>Prostate</p> <ul style="list-style-type: none"> <li>• Prostatitis</li> <li>• Benign Prostatic Hyperplasia</li> </ul> <p>Carcinoma of the Prostate</p> <p>Sexually Transmitted Diseases</p> <ul style="list-style-type: none"> <li>• Syphilis</li> <li>• Gonorrhea</li> <li>• Nongonococcal Urethritis and Cervicitis</li> <li>• Lymphogranuloma Venereum</li> <li>• Chancroid (Soft Chancre)</li> <li>• Granuloma Inguinale</li> <li>• Trichomoniasis</li> <li>• Genital Herpes Simplex</li> </ul> <p>Human Papillomavirus Infection</p>
<b>Title</b>	<b>10. FEMALE GENITAL TRACT</b>
<b>Duration</b>	0.25 Week
<b>Learning Out comes</b>	<ul style="list-style-type: none"> <li>• Have a knowledge of diseases of Exocrine Pancreas including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
	<p><b>At the end of the course student must be able to:</b></p> <p><b>. Vulva</b></p> <ul style="list-style-type: none"> <li>• Vulvitis</li> <li>• Nonneoplastic Epithelial Disorders</li> </ul> <p>Tumors</p> <ul style="list-style-type: none"> <li>• Condylomas</li> <li>• Carcinoma of the Vulva</li> <li>• Extramammary Paget Disease</li> </ul> <p><b>Vagina</b></p> <ul style="list-style-type: none"> <li>• Vaginitis</li> </ul> <p>Malignant Neoplasms</p> <ul style="list-style-type: none"> <li>• Squamous Cell Carcinoma</li> <li>• Clear Cell Adenocarcinoma</li> <li>• Sarcoma Botryoides</li> </ul> <p><b>Cervix</b></p> <ul style="list-style-type: none"> <li>• Cervicitis</li> </ul> <p>Neoplasia of the Cervix</p> <ul style="list-style-type: none"> <li>• Squamous Intraepithelial Lesion (SIL, Cervical Intraepithelial Lesion)</li> <li>• Invasive Carcinoma of the Cervix</li> </ul>

	<ul style="list-style-type: none"> <li>• Endocervical Polyp</li> </ul> <p><b>Uterus</b></p> <ul style="list-style-type: none"> <li>• Endometritis</li> <li>• Adenomyosis</li> <li>• Endometriosis</li> <li>• Abnormal Uterine Bleeding</li> <li>• Proliferative Lesions of the Endometrium and Myometrium</li> <li>• Endometrial Hyperplasia</li> </ul> <p>Endometrial Polyps Endometrial Carcinoma Leiomyoma</p> <ul style="list-style-type: none"> <li>• Leiomyosarcoma</li> </ul> <p><b>Fallopian Tubes</b></p> <p><b>Ovaries</b></p> <ul style="list-style-type: none"> <li>• Follicle and Luteal Cysts</li> <li>• Polycystic Ovarian Syndrome</li> </ul> <p>Tumors of the Ovary</p> <ul style="list-style-type: none"> <li>• Serous Tumors</li> <li>• Mucinous Tumors</li> <li>• Endometrioid Tumors</li> <li>• Brenner Tumor</li> </ul> <ul style="list-style-type: none"> <li>• Other Ovarian Tumors</li> </ul> <p><b>Diseases of Pregnancy</b></p> <ul style="list-style-type: none"> <li>• Placental Inflammations and Infections</li> <li>• Ectopic Pregnancy</li> </ul> <p>Gestational Trophoblastic Disease</p> <ul style="list-style-type: none"> <li>• Hydatidiform Mole: Complete and Partial</li> <li>• Invasive Mole</li> <li>• Gestational Choriocarcinoma</li> <li>• Placental Site Trophoblastic Tumor</li> </ul> <ul style="list-style-type: none"> <li>• Preeclampsia/Eclampsia (Toxemia of Pregnancy)</li> <li>•</li> </ul>
<b>Course Title</b>	<b>11. BREAST</b>
Duration	3 weeks
Out comes	<ul style="list-style-type: none"> <li>• Have a knowledge of diseases of Kidney including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
Objectives	<p><b>At the end of the course, student must be able to:</b></p> <ul style="list-style-type: none"> <li>• Clinical Presentations of Breast Disease</li> </ul> <p>Inflammatory Processes</p> <p>Stromal Neoplasms</p> <p>Benign Epithelial Lesions</p> <p>Carcinoma</p> <p>Epidemiology and Risk Factors</p>

Course Title	<b>12. ENDOCRINE SYSTEM</b>
Duration	1 week
Learning Outcomes	<ul style="list-style-type: none"> <li>• Have a knowledge of diseases of Lower Urinary Tract and Male Genital System including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
Learning Objectives	<p><b>At the end of the course, student must be able to:</b></p> <p><b>Pituitary</b></p> <ul style="list-style-type: none"> <li>• Anterior Pituitary Tumors</li> <li>• Pituitary Adenomas: General Features</li> <li>• Functioning Adenomas and Hyperpituitarism</li> </ul> <p>Other Anterior Pituitary Neoplasms Hypopituitarism</p> <ul style="list-style-type: none"> <li>○ Posterior Pituitary Syndromes</li> </ul> <p><b>Thyroid</b></p> <ul style="list-style-type: none"> <li>• Hyperthyroidism</li> <li>• Hypothyroidism</li> <li>• Autoimmune Thyroid Disease</li> <li>• Chronic Lymphocytic (Hashimoto) Thyroiditis</li> <li>• Subacute Granulomatous (de Quervain) Thyroiditis</li> <li>• Subacute Lymphocytic Thyroiditis</li> <li>• Other Forms of Thyroiditis</li> <li>• Graves Disease</li> <li>• Diffuse and Multinodular Goiter</li> </ul> <p>Thyroid Neoplasms</p> <ul style="list-style-type: none"> <li>• Adenomas</li> <li>○ Carcinomas</li> </ul> <p><b>Parathyroid Glands</b></p> <p>Hyperparathyroidism</p> <ul style="list-style-type: none"> <li>• Primary Hyperparathyroidism</li> <li>• Secondary Hyperparathyroidism</li> <li>○ Hypoparathyroidism</li> </ul> <p><b>Endocrine Pancreas</b></p> <p>Diabetes Mellitus</p> <ul style="list-style-type: none"> <li>• Normal Insulin Physiology and Glucose Homeostasis</li> <li>• Pathogenesis of Type 1 Diabetes</li> <li>• Pathogenesis of Type 2 Diabetes</li> <li>• Monogenic Forms of Diabetes</li> <li>• Other Subtypes of Diabetes</li> <li>• Acute Metabolic Complications of Diabetes</li> <li>• Chronic Complications of Diabetes</li> </ul> <p>Pancreatic Neuroendocrine Tumors</p> <ul style="list-style-type: none"> <li>• Insulinomas</li> <li>○ Gastrinomas</li> </ul> <p><b>Adrenal Cortex</b></p>

	<p>Adrenocortical Hyperfunction:</p> <ul style="list-style-type: none"> <li>• Hyperadrenalism</li> <li>• Hypercortisolism: Cushing Syndrome</li> <li>• Hyperaldosteronism</li> </ul> <p>Adrenogenital Syndromes</p> <p>Adrenal Insufficiency</p> <ul style="list-style-type: none"> <li>• Acute Adrenocortical Insufficiency</li> <li>• Chronic Adrenocortical Insufficiency: Addison Disease</li> <li>• Secondary Adrenocortical Insufficiency</li> <li>○ Adrenocortical Neoplasms</li> </ul> <p><b>Adrenal Medulla</b></p> <p>Tumors of the Adrenal Medulla</p> <ul style="list-style-type: none"> <li>• Pheochromocytoma</li> <li>○ Neuroblastoma and Other Neuronal Neoplasms</li> </ul> <p><b>Multiple Endocrine Neoplasia (MEN) Syndromes</b></p> <ul style="list-style-type: none"> <li>• Multiple Endocrine Neoplasia Type 1</li> <li>○ Multiple Endocrine Neoplasia Type 2</li> </ul>
<p><b>Course Title</b></p>	<p><b>13. BONES, JOINTS AND SOFT TISSUE TUMORS</b></p>
<p><b>Duration</b></p>	<p>2 weeks</p>
<p><b>Learning outcomes</b></p>	<ul style="list-style-type: none"> <li>• Have a knowledge of diseases of Female Genital Tract including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
<p><b>Learning objectives</b></p>	<p><b>At the end of the course, student must be able to:</b></p> <p>Basic Structure and Function of Bone</p> <ul style="list-style-type: none"> <li>• Matrix</li> <li>• Cells</li> <li>• Development</li> <li>○ Homeostasis and Remodeling</li> </ul> <p>Congenital Disorders of Bone and Cartilage</p> <ul style="list-style-type: none"> <li>• Achondroplasia</li> <li>• Thanatophoric Dysplasia</li> <li>• Type I Collagen Diseases (Osteogenesis Imperfecta)</li> <li>• Osteopetrosis</li> </ul> <p>Metabolic Disorders of Bone</p> <ul style="list-style-type: none"> <li>• Osteopenia and Osteoporosis</li> <li>• Rickets and Osteomalacia</li> <li>• Hyperparathyroidism</li> <li>○ Paget Disease of Bone (Osteitis Deformans)</li> </ul> <p>Fractures</p> <p>Healing of Fractures</p> <p>Osteonecrosis (Avascular Necrosis)</p> <p>Osteomyelitis</p> <ul style="list-style-type: none"> <li>• Pyogenic Osteomyelitis</li> <li>○ Mycobacterial Osteomyelitis</li> </ul>

	<p><b>Bone Tumors and Tumorlike Lesions</b></p> <ul style="list-style-type: none"> <li>• Bone-Forming Tumors</li> <li>• Cartilage-Forming Tumors</li> <li>• Tumors of Unknown Origin</li> <li>• Lesions Simulating Primary Neoplasms</li> <li>○ Metastatic Tumors</li> </ul> <p><b>Joints</b></p> <p><b>Arthritis</b></p> <ul style="list-style-type: none"> <li>• Osteoarthritis</li> <li>• Rheumatoid Arthritis</li> <li>• Juvenile Idiopathic Arthritis</li> <li>• Seronegative Spondyloarthropathies</li> <li>• Infectious Arthritis</li> <li>• Lyme Arthritis</li> <li>• Crystal-Induced Arthritis</li> </ul> <p><b>Joint Tumors and Tumorlike Conditions</b></p> <ul style="list-style-type: none"> <li>• Ganglion and Synovial Cysts</li> <li>○ Tenosynovial Giant Cell Tumor</li> </ul> <p><b>Soft Tissue Tumors</b></p> <p><b>Tumors of Adipose Tissue</b></p> <ul style="list-style-type: none"> <li>• Lipoma</li> <li>• Liposarcoma</li> <li>•</li> </ul> <p><b>Fibrous Tumors</b></p> <ul style="list-style-type: none"> <li>• Nodular Fasciitis</li> <li>• Fibromatoses</li> </ul> <p><b>Skeletal Muscle Tumors</b></p> <ul style="list-style-type: none"> <li>• Rhabdomyosarcoma</li> </ul> <p><b>Smooth Muscle Tumors</b></p> <ul style="list-style-type: none"> <li>• Leiomyoma</li> <li>• Leiomyosarcoma</li> </ul> <p><b>Tumors of Uncertain Origin</b></p> <ul style="list-style-type: none"> <li>• Synovial Sarcoma</li> <li>○ Undifferentiated Pleomorphic Sarcoma</li> <li>○</li> </ul>
<p><b>Course Title</b></p>	<p><b>14. PERIPHERAL NERVES AND MUSCLES</b></p>
<p><b>Duration</b></p>	<p>1 week</p>
<p><b>Learning Out comes</b></p>	<ul style="list-style-type: none"> <li>• Have a knowledge of diseases of Breast including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
<p><b>Learning Objectives</b></p>	<p><b>At the end of the course, student must be able to:</b></p> <p>Disorders of Peripheral Nerves                  Patterns of Peripheral Nerve Injury                  Disorders Associated With Peripheral Nerve Injury                  Disorders of Neuromuscular Junction</p> <ul style="list-style-type: none"> <li>• Myasthenia Gravis</li> </ul>

	<ul style="list-style-type: none"> <li>● Lambert-Eaton Syndrome                             <ul style="list-style-type: none"> <li>○ Miscellaneous Neuromuscular Junction Disorders</li> </ul> </li> </ul> Disorders of Skeletal Muscle Patterns of Skeletal Muscle Injury and Atrophy Inherited Disorders of Skeletal Muscle <ul style="list-style-type: none"> <li>○ Acquired Disorders of Skeletal Muscle</li> </ul> Peripheral Nerve Sheath Tumors <ul style="list-style-type: none"> <li>● Schwannomas and Neurofibromatosis Type 2</li> <li>● Neurofibromas</li> <li>● Neurofibromatosis Type 1</li> <li>● Malignant Peripheral Nerve Sheath Tumors</li> <li>○ Traumatic Neuroma</li> </ul>
<b>Title</b>	<b>15. CENTRAL NERVOUS TUMORS</b>
<b>Duration</b>	2 Weeks
<b>Learning Out comes</b>	<ul style="list-style-type: none"> <li>● Have a knowledge of diseases of The Endocrine System including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
<b>Learning Objectives</b>	<p><b>At the end of the course student must be able to:</b></p> <ul style="list-style-type: none"> <li>● <b>Adrenal Glands</b> <ul style="list-style-type: none"> <li>○ Discuss Cushing Syndrome.</li> <li>○ Describe etiology, pathogenesis clinical features and laboratory diagnosis of Conn’s syndrome and Adrenogenital syndrome.</li> <li>○ Enlist causes of hypofunction of adrenal cortex.</li> <li>○ Describe etiology, pathogenesis and clinical features of Addison disease.</li> <li>○ Enlist tumors of adrenal medulla and cortex.</li> <li>○ Discuss morphology, clinical features and diagnosis of pheochromocytoma.</li> </ul> </li> </ul>
<b>Title</b>	<b>16. Skin</b>
<b>Duration</b>	0.25 week
<b>Learning Out comes</b>	<ul style="list-style-type: none"> <li>● Have a knowledge of diseases of Skin including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
<b>Learning Objectives</b>	<p><b>At the end of the course student must be able to understand:</b></p> Hydrocephalus Cerebral Edema Hydrocephalus Herniation Cerebrovascular Diseases Hypoxia, Ischemia, and Infarction Intracranial Hemorrhage <ul style="list-style-type: none"> <li>○ Other Vascular Diseases</li> </ul> Central Nervous System Trauma <ul style="list-style-type: none"> <li>● Traumatic Parenchymal Injuries</li> <li>● Traumatic Vascular Injury</li> </ul> Congenital Malformations and Perinatal Brain Injury <ul style="list-style-type: none"> <li>● Malformations</li> </ul>

	<ul style="list-style-type: none"> <li>○ Perinatal Brain Injury</li> <li>Infections of the Nervous System             <ul style="list-style-type: none"> <li>● Epidural and Subdural Infections</li> <li>● Meningitis</li> <li>● Parenchymal Infections</li> <li>● Prion Diseases</li> </ul> </li> <li>Diseases of Myelin             <ul style="list-style-type: none"> <li>● Multiple Sclerosis (MS)</li> <li>● Other Acquired Demyelinating Diseases</li> </ul> </li> <li>○ Leukodystrophies</li> <li>Genetic Metabolic Diseases</li> <li>Acquired Metabolic and Toxic Disturbances             <ul style="list-style-type: none"> <li>● Nutritional Diseases</li> <li>● Metabolic Disorders</li> <li>● Toxic Disorders</li> </ul> </li> <li>Neurodegenerative Diseases             <ul style="list-style-type: none"> <li>● Alzheimer Disease</li> <li>● Frontotemporal Lobar Degeneration</li> <li>● Parkinson Disease</li> <li>● Huntington Disease</li> <li>● Spinocerebellar Ataxias</li> </ul> </li> <li>○ Amyotrophic Lateral Sclerosis</li> <li>Tumors             <ul style="list-style-type: none"> <li>● Gliomas</li> <li>● Neuronal Tumors</li> <li>● Embryonal (Primitive) Neoplasms</li> <li>● Other Parenchymal Tumors</li> </ul> </li> <li>Meningiomas</li> <li>Metastatic Tumors             <ul style="list-style-type: none"> <li>○ Familial Tumor Syndromes</li> </ul> </li> </ul>
<b>Title</b>	<b>1. SKIN</b>
Duration	1 Week
Learning Outcomes	<ul style="list-style-type: none"> <li>● Have a knowledge of diseases of Bones, Joints and Soft Tissue Tumors including, etiology, pathogenesis, risk factors, morphology, clinical features, complications and diagnosis.</li> </ul>
Learning Objectives	<p><b>At the end of the course student must be able to understand:</b></p> <p>Acute Inflammatory Dermatoses</p> <ul style="list-style-type: none"> <li>● Urticaria</li> <li>● Acute Eczematous Dermatitis</li> <li>● Erythema Multiforme</li> </ul> <p>Chronic Inflammatory Dermatoses</p> <ul style="list-style-type: none"> <li>● Psoriasis</li> <li>● Lichen Planus</li> </ul> <p>Lichen Simplex Chronicus</p> <p>Infectious Dermatoses</p> <ul style="list-style-type: none"> <li>● Bacterial Infections</li> </ul>

	<ul style="list-style-type: none"><li>• Fungal Infections</li><li>• Verrucae (Warts)</li></ul> Blistering (Bullous) Disorders <ul style="list-style-type: none"><li>• Pemphigus (Vulgaris and Foliaceus)</li><li>• Bullous Pemphigoid</li></ul> Dermatitis Herpetiformis  Tumors of the Skin <ul style="list-style-type: none"><li>• Benign and Premalignant Epithelial Lesions</li><li>• Malignant Epidermal Tumors</li></ul> Melanocytic Proliferations
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PRC/MC

**STUDY GUIDE**

**COMMUNITY MEDICINE**

**FOURTH PROFESSIONAL MBBS**



**Pak Red Crescent Medical & Dental College**

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48-KM Multan Road, Lahore-Pakistan.

Title	Community Medicine
Introduction	<p>The art and science of application of technical knowledge and skills to the delivery of healthcare to a given community, designed in collaboration with related professions as well as human and social sciences on the one hand, and community on the other.</p> <p>Community Medicine is the branch of medicine concerned with the health of populations. It strives to protect and promote the health and well-being of the community through Primary Health Care approach.</p> <p>Community medicine is the field concerned with the study of health and disease in the defined community or group. Its goal is to identify the health problems and needs of people (community diagnosis) and to plan, implement and evaluate the effectiveness of health care system.</p> <p>Community Medicine as a reformed discipline from public health and preventive medicine, which was started for the first time in Iran in late 1960’s and early 1970’s. The initiation of this department was based on the gross misdistribution of health care facilities in Iran, when at the time 70% of population was residing in rural communities and almost 90% of all health facilities were concentrated in Tehran and larger cities. The main reason why Shiraz was among the institutions in Iran, that initiate this reform was the fact that at the time up to 90% of its medical graduate were being deployed to Western countries particularly the United States. At the time it was argued that Shiraz University Medical school as an institution has medical curricula not relevant for the needs of overwhelming majority of Iranian communities and need drastic revision of curriculum as well as a fundamental revision of the “mission of institution”.</p> <p>Based on such idea the department of Community Medicine was established in 1971 in Shiraz. The initial proposal which was submitted to authorities for the department of Community Medicine was:</p> <ol style="list-style-type: none"> <li>1-To train physicians who will be able to deal with community as a whole, be able to measure the needs of population, plan and administer the services and take appropriate measure to meet the health needs of their prospective community.</li> <li>2-To be able to plan and administer the research plan to identify the health need of community, set priority in allocating the resources to the most relevant need of the majority and vulnerable group of population</li> </ol>

	<p>3-To be able to teach and persuade medical students toward the need of society as whole verses tertiary and hospital care.</p> <p>4-Since the need of society constantly change the specialist of this field must be able to be flexible and change the direction based on evolving need and to do research to find the changes; also be able to apply the new needs in the field of Community Medicine.</p>
Vision	It envisions excellence in public health teaching, training and capacity building through providing broad perspectives of health and health-care and innovation, critical-thinking and lifelong learning skills into health-care settings.
Mission	<p>Contribute to the development of a well-rounded (holistic) medical professional, who will demonstrate knowledge and competence with compassion in dealing with primary health care, desire for lifelong learning, evidence-based practice, interdisciplinary team work, and professional and ethical behaviour in practice in order to improve and sustain the health of the population</p> <p>Preserve, promote, and improve the health and well-being of populations, communities, and individuals.</p>
Target Students	4th Year MBBS
Course to be studied in Community Medicine	<ul style="list-style-type: none"> <li>• Introduction to Public Health and Health Systems in Pakistan</li> <li>• Concept of Health &amp; Disease</li> <li>• Epidemiology and disease control</li> <li>• Biostatistics</li> <li>• Demography and Population dynamics</li> <li>• Food and Nutrition</li> <li>• Reproductive and Child Health</li> <li>• Health of school age children</li> <li>• Environmental Health Sciences</li> <li>• Occupational Health</li> <li>• Arthropods and their public health importance</li> <li>• Prevention and control of Parasitic diseases of public health importance</li> <li>• Snake Bites: Personal protection and management</li> <li>• Mental Health</li> <li>• Behavioural Sciences and lifestyle</li> <li>• Information, Education and Communication (IEC)</li> <li>• Disaster</li> <li>• Medical Ethics</li> </ul>
<b>Topic/Lecture – Learning Objectives</b>	
i. Research work	Student should have practical experience in questionnaire development, data collection, compilation, presentation, analysis and report writing
ii. Field visits	a) Visit to BHU and RHC

	<p>b) Visit to an NGO</p> <p>c) Visit to a primary school to assess the nutritional status of school children</p> <p>d) Visit to MCH/Reproductive Health Centre to observe the organization, and function of the centre and to demonstrate counselling skills in one of the following</p> <ul style="list-style-type: none"> <li>• Nutritional counselling for children, pregnant and lactating women</li> <li>• Antenatal Care</li> <li>• Family planning services</li> <li>• Immunization, others</li> </ul> <p>e) Visit to a hospital to see the hospital waste disposal</p> <p>f) Visit to an industry</p> <p>g) Visit to a physical/mental/social rehabilitation center</p>
<p>iii. Skills development lab</p>	<p>a. Water purification at domestic level</p> <p>b. Contraceptives</p> <p>c. Vaccination including the cold chain</p> <p>d. Oral Rehydration solution</p>
<p>Learning Domains</p>	<p>Cognitive, Psychomotor and Affective domains in all components of curriculum</p>
<p>Outcomes</p>	<p>a. Focus shift from treatment of sick</p> <p>b. Prevention of diseases</p> <p>c. Promotion of health</p> <p>d. Quality of life improvement for individuals &amp; groups</p> <p>After completing the Community Medicine course, students will be able to,</p> <ol style="list-style-type: none"> <li>1. Appraise health promotion, disease prevention and public health as major components of health and appraise the role of public health in providing individual healthcare.</li> <li>2. Apply appropriate statistical techniques for presentation, analysis and interpretation of health data and critically appraise the statistical analysis in medical literature.</li> <li>3. Identify the demographic changes in the community by accessing the demographic data sources and critically appraise the causal factors and implications of such changes pertaining to public health.</li> </ol>

	<p>4. Describe the basic concepts of maternal and child health, promote maternal and child health through practical application of these concepts.</p> <p>5. Describe the distribution and determinants of health related events in a community by using appropriate epidemiological measures, explain basic concepts of causation and critically appraise the epidemiological methods used in scientific literature.</p> <p>6. Explain the epidemiology of common communicable diseases in the global and local context and apply the knowledge for the control and prevention of the communicable diseases in the community in parallel with the public health system.</p> <p>7. Explain the epidemiology of common non communicable diseases in the global and local context and to apply the knowledge for the control and prevention of the non-communicable diseases in the community by addressing the modifiable and non- modifiable risk factors in the context of the national program.</p> <p>8. Explain nutrition related problems in the community/individuals by conducting appropriate nutritional assessment methods and/or by interpreting secondary data to formulate appropriate strategies to address immediate, underlying and basic causative factors in parallel with the public health policy context.</p> <p>9. Apply the basic concepts in occupational health to promote health in working places and to prevent common hazard at work settings.</p> <p>10. Recognize the environmental health issues at household and community levels and to formulate appropriate environmental friendly interventions.</p> <p>11. Access and appraise scientific information, design and carry out simple epidemiological research by identifying gaps in scientific literature and present the findings of the research in a scientific format.</p> <p>12. Promote health of individuals and families focusing on priority health needs and health related problems at individual/family level considering the given social, cultural, economic and demographic context.</p>
<p>Learning Objectives</p>	<p>Define law</p> <p>Name Legal System of the Country</p> <p>Enumerate different types of Law</p> <p>Describe criminal law</p> <p>What do you know about law of substantial crime</p> <p>Memorize witness, evidence &amp; oath.</p>

	<p>Rationalize testimony and testamentary capacity</p> <p>Tabulate difference of Dying Declaration &amp; Dying Deposition</p> <p>Observe the basis of Civil &amp; Criminal Law</p> <p>Identify an Ordinance and an Act</p> <p>Classify different level of courts</p> <p>Record medical evidence</p> <p>Examination of Witness in court of law</p>
<b>Course Title</b>	<b>Medical Jurisprudence</b>
Course duration	<b>2 weeks</b>
Outcomes	<p>Improve the health of populations</p> <p>Contribute to the health of the public through assessment of health and health needs, policy formulation, and assurance of the availability of services</p>
Learning objectives	<p>At the end of the course, the learner shall be:</p> <p>1 Summarize medical aspects of law and legal aspects of medicine</p> <p>Demonstrate consent and its types</p> <p>Infer how privileged communication differ from consent</p> <p>Distinguish between medical malpractice and therapeutic misadventure</p> <p>Associate professional misconduct and medical negligence</p> <p>Correlate professional secrecy and medical treatment</p> <p>Discuss medical documentation – Reporting and Certification</p> <p>Generalize PMC Ordinance 2019</p> <p>Contrast Medical ethics and Unethical Practices.</p> <p>Paraphrase legal aspects of Medical Practice.</p>
<b>Course Title</b>	<b>Forensic Psychiatry &amp; Criminal Responsibility</b>
Course duration	2 weeks
Outcomes	<p>According to WHO Outcome measures a change in the health of an individual, group of people, or population that is attributable to an intervention or series of interventions.” Outcome measures (mortality, readmission, patient experience, etc.) are the quality and cost targets healthcare organizations are</p>

	<p>trying to improve.</p> <p>The goal of measuring, reporting, and comparing healthcare outcomes is to achieve the quadruple aim of health care:</p> <ol style="list-style-type: none"> <li>1.Improve the patient experience of care.</li> <li>2.Improve the health of populations.</li> <li>3.Reduce the per capita cost of healthcare.</li> <li>4.Reduce clinician and staff burnout.</li> </ol>
Learning Objectives	<p>Define forensic psychiatry</p> <p>Emphasize the scope and limitations of forensic psychiatry</p> <p>State insanity and Legal aspects of insanity</p> <p>Reproduce what is meant by medical treatment of mentally ill person</p> <p>Summarize McNaughton’s Rule and Insanity</p> <p>Predict how the plea of insanity works</p> <p>Relate how lunatic asylum act covers the medical need of lunatics</p> <p>Compare criminal responsibility and factors negating it</p>
<b>Course Title</b>	<b>Personal Identity</b>
Course duration	4 weeks
Outcomes	<ul style="list-style-type: none"> <li>• Explain and practise some key techniques in epidemiology</li> <li>• Understand some routine methods of data analysis</li> <li>• Apply these techniques in a practical sense.</li> </ul>
Learning Objectives	<ol style="list-style-type: none"> <li>(1) Define Personal Identification</li> <li>(2) Classify the parameters of Identification</li> <li>(3) Compare partial identification with complete identification</li> <li>(4) Enlist methods of Identification in detail</li> <li>(5) Discuss Locard’s Exchange Principal and Trace Evidence</li> <li>(6) Explain Dactylography and Anthropometry</li> <li>(7) Enumerate the components of identification</li> <li>(8) Interpret Forensic Photography &amp; Radiology, Blood Grouping and Examination of DNA</li> <li>(9) Recognition of Disaster Victim Identification (DVI) System</li> <li>(10) Describe salient Features of Footprints, Scars, Tattoos and Poroscopy</li> </ol>
<b>Course Title</b>	<b>Postmortem Examination</b>
Course Duration	4 weeks

<p>Learning Outcomes</p>	<ul style="list-style-type: none"> <li>• Select from, use and interpret results of, descriptive statistical methods effectively.</li> <li>• Demonstrate an understanding of the central concepts of modern statistical theory and their probabilistic foundation.</li> <li>• Select from, use, and interpret results of, the principal methods of statistical inference and design.</li> <li>• Communicate the results of statistical analyses accurately and effectively.</li> <li>• Make appropriate use of statistical software.</li> <li>• Read and learn new statistical procedures independently</li> </ul>
<p>Learning Objectives</p>	<p>Identify Legal Aspects of Postmortem Examination</p> <p>Enumerate Objectives of Medicolegal Autopsy</p> <p>Discuss Essentials &amp; Authorization.</p> <p>Describe Specimen Collection, Preservation &amp; Dispatch</p> <p>Infer Postmortem Report Writing</p> <p>Paraphrase Exhumation</p> <p>Classify Postmortem Artifacts</p> <p>Demonstrate Negative Autopsy</p>
<p><b>Course Title</b></p>	<p><b>Thanatology</b></p>
<p>Course Duration</p>	<p>1 week</p>
<p>Outcomes</p>	<ul style="list-style-type: none"> <li>• Explain and practice some key techniques in demography</li> <li>• Understand some routine methods of demographic data analysis</li> <li>• Apply these techniques in a practical sense.</li> </ul>
<p>Learning Objectives</p>	<ul style="list-style-type: none"> <li>• Express Introduction, Definition of Death &amp; Types of Death</li> <li>• Indicate Clinical Diagnosis of Death</li> <li>• Memorize Certification of Death – Natural &amp; Unnatural</li> <li>• Enlist Cause, Mode &amp; Manner of Death</li> <li>• Reproduce Brain Death &amp; Organ Transplantation</li> <li>• Discuss the Postmortem Changes – Immediate, Early &amp; Late Changes</li> <li>• Estimations regarding Forensic Entomology</li> <li>• Infer Calculation of Postmortem Interval</li> <li>• Sketch the Study &amp; Identification of Human Remains</li> <li>• Construct information about Cause, Manner &amp; Mode of Death</li> <li>• Construct Cause, Manner, Mode &amp; TSD information in sudden Deaths</li> </ul>
<p><b>Course Title</b></p>	<p><b>SEXUAL OFFENCES AND RELATED CRIMES</b></p>
<p>Course Duration</p>	<p>2 weeks</p>
<p>Outcomes</p>	<ul style="list-style-type: none"> <li>• The students shall know about the classification of nutrients.</li> <li>• They should have a clear concept about the diseases related to nutrients and minerals</li> </ul>

	<ul style="list-style-type: none"> <li>• They should have an adequate knowledge about balance diet, food guide pyramid</li> <li>• They should know how the nutritional status to be assessed and knowledge about community nutritional programmes</li> </ul>
Learning Objectives	<p>To learn about</p> <p>a Classify the Sexual Offences and Related Crimes</p> <p>Analyze the Laws related to various Sexual Assaults</p> <p>Enumerate the Natural &amp; Unnatural means of Sex</p> <p>Enlist the Perversion States and Society Concerns</p> <p>Discuss the various states of Sterility &amp; Infertility</p> <p>Demonstrate Marriage &amp; Divorce</p> <p>Examine the cases of Sexual Assault Victims &amp; Assailants</p> <p>Experiment the Specimen Collection, Preservation &amp; Dispatch</p> <p>Demonstrate the Criminal Abortion &amp; Relevant Laws</p> <p>Summarize the Causative Methods of Abortion</p> <p>Examine the Fetus &amp; Mother in case of Criminal Abortion</p> <p>Explain the Medicolegal Aspects of Sex</p>
Course Title	<b>GENERAL TRAUMATOLOGY</b>
Course Duration	2 weeks
Outcomes	The students shall be able to define & explain Reproductive and Child Health (RCH) services as an integrated approach of providing healthcare to all individuals within the context of the primary health care strategies. Although the focus is on women and children, services provided are assemblage of curative, preventive, promotional and rehabilitative for improving the health of the population regarding morbidity & mortality.
Learning Objectives	<ul style="list-style-type: none"> <li>• Define trauma</li> </ul> <p>Assess scope of Forensic aspects of Trauma</p> <p>Emphasize Legal Aspects of Trauma &amp; Classification</p> <p>Evaluate Swelling, Contusions, Hematoma &amp; Skull Injuries</p> <p>Describe Abrasions, Bruises, Lacerations, Stab &amp; Incised Wounds</p> <p>Differentiate between Antemortem &amp; Postmortem Injuries</p>

	Explain Injury as Cause of Death
<b>Course Title</b>	<b>SPECIAL TRAUMATOLOGY</b>
Course Duration	1 week
Outcomes	At the end of lecture student shall be able to apply their study regarding <ul style="list-style-type: none"> <li>• Health education</li> <li>• School environment</li> <li>• Health services</li> <li>• Physical education</li> <li>• School food &amp; nutrition</li> </ul>
Learning Objectives	<ol style="list-style-type: none"> <li>a. Assess trauma by different weapons</li> <li>b. Visualization of vital reaction</li> <li>c. Demonstrate difference between antemortem and postmortem wounds</li> <li>d. Interpretation of criminalistics with special reference to wounds</li> </ol>
<b>Course Title</b>	<b>REGIONAL TRAUMA</b>
Course Duration	3 weeks
Outcomes	At the end of this module and associated reading students will: <ul style="list-style-type: none"> <li>• Understand basic terminology and concepts;</li> <li>• Demonstrate a knowledge and understanding of essential physical, biological, chemical, and engineering concepts in relation to non-infectious environmental hazards</li> <li>• Evaluate the scope and limitations of available incident information, and identify the need for further information such as by environmental sampling</li> </ul>
Learning Objectives	<p>1 Assess Cause effect relationship on soft tissues</p> <p>Assess cause effect relationship on bony tissues</p> <p>Demonstrate injuries on cavities with special reference to coup – and – countre coup injuries</p> <p>Explain injuries on limbs</p> <p>Categorize the injuries in Police Custody</p>
<b>Course Title</b>	<b>TRANSPORTATION INJURIES</b>
Course Duration	1 week
Outcomes	<ul style="list-style-type: none"> <li>• Describe risk management as a process and discuss different risk control measures</li> <li>• Evaluate different incident prevention theories</li> <li>• Motivate the use of occupational HSE management systems</li> <li>• Advise on different legislative requirements</li> </ul>

	<ul style="list-style-type: none"> <li>Describe the environmental impact of industrial operations</li> <li>Write risk-based standards for an occupational HSE management system</li> <li>Achieve continual improvement within an occupational HSE management system</li> </ul>
Learning Objectives	<ul style="list-style-type: none"> <li>Define motor vehicle accidents</li> <li>Define Bird claw foot, dicing, tailgating and roll-over injuries</li> <li>Examine injuries sustained by Pedestrians, Cyclists, Motorcyclists</li> <li>Demonstrate different impacts of injuries</li> <li>Examine injuries sustained to skull and limbs</li> <li>Discuss legal aspects of motor vehicle accidents</li> <li>Examine injuries sustained to drivers, rare and front seat occupants</li> <li>Assess Airbag and Seat – belt Injuries</li> <li>Usage of Alcohol in Vehicular Accidents</li> </ul>
Course Title	<b>FIRE ARM INJURIES</b>
Course Duration	2 weeks
Outcomes	<p>The students would be able to;</p> <ol style="list-style-type: none"> <li>Know about arthropods and especially insects with their morphological features</li> <li>Identify insects of medical importance</li> <li>be aware of diseases spread by arthropods and their prevention</li> </ol>
Learning Objectives	<p>Classify Firearm Weapons &amp; Types of Ammunition</p> <p>Explain Mechanism of Fire, Interior, Exterior and Terminal Ballistics</p> <p>Compare and Contrast Rifled &amp; Smoothbore Entry Wounds</p> <p>Demonstrate Track of Injuries</p> <p>Differentiate between Exit Wound at Various Distance</p> <p>Tabulate Smooth Bore Firearm Injuries</p> <p>Sketch Radiological Examination in case of Firearm Injuries</p> <p>Describe the Examination of Hands &amp; Cloths</p> <p>State the Mechanisms leading to Death due to Firearm Injuries</p> <p>Analyze the Homicidal &amp; Suicidal Accidents in Firearms</p> <p>Experiment the Fabricated Firearm Injuries</p> <p>Correlation of the Study of Blast Injuries and Firearm Wounds</p> <p>Interpret the Legal Aspects in Blast &amp; Firearm Injuries</p>

<b>Course Title</b>	<b>ACCIDENTS IN HOME ENVIRONMENT</b>
Course Duration	1 week
Outcomes	<p>After completing this course, student should be able to:</p> <ul style="list-style-type: none"> <li>• Discuss how important parasites can be classified according to kingdom and phylum</li> <li>• State the meaning of commonly-used terms</li> <li>• Describe how parasitic infections affect communities in poor countries and that knowledge of their life cycle is necessary for effective prevention and control</li> <li>• Discuss the epidemiology, basic life cycle, clinical presentation, management and control of some important parasitic infections</li> </ul>
Learning Objectives	<p>Define burns, drowning, hypo - &amp; - hyperthermia, starvation and trench foot.</p> <p>Evaluate the Dry Burns &amp; Scalds</p> <p>Examine the Hypothermia &amp; Hyperthermia</p> <p>Differentiate the Frostbite &amp; Trench Foot of Cold Environment</p> <p>Compare the Electrocution &amp; Lightning</p> <p>Contrast the Salt water Drowning &amp; Fresh water Drowning</p> <p>Generalize Starvation and Related Death</p>
<b>Course Title</b>	<b>General Toxicology</b>
Course Duration	1 week
Outcomes	<p>Know the importance of the medical ethics in medical practice. The students shall;</p> <p>Have the clear concepts about the four disciplines of medical ethics &amp; guidelines according to PM&amp;DC code of ethics at national level.</p>
Learning Objectives	<p>Introduce the Forensic Toxicology</p> <p>Classify the Poisons of Domestic and Commercial Origin</p> <p>Estimate Lethal Doses and Lethal Periods</p> <p>Summarize the Diagnosing a general poisonous case Demonstrate the Management &amp; Treatment of a general case of Toxicology</p> <p>Summarize the Legal Duties of Medicolegal Officer</p> <p>Estimate the Manners of Poisoning</p>

	<p>Explain the Poison as cause of Death</p> <p>Analyze the Legal Aspects in Poisoning</p> <p>Enlist Duties of Doctor in Dealing a case of poison</p>
<b>Course Title</b>	<b>Special Toxicology CORROSIVES</b>
Course Duration	1 week
Outcomes	At the end of this chapter the students shall be able to understand, apply the knowledge regarding different mental illnesses and their causes to prevent the mental diseases common in our society and also understand the different types of addictions and crimes in our society and apply this knowledge to prevent and manage these problems
Learning Objectives	<p>At the end of this chapter students shall be able to</p> <p>Define corrosives.</p> <p>Differentiate between acids and alkalies</p> <p>Classify acids.</p> <p>Classify mineral acids and organic acids</p> <p>Describe mechanism of poisoning by corrosives</p> <p>Explain management, medicolegal features and postmortem features of corrosive poisoning</p>
<b>Course Title</b>	<b>IRRITANTS</b>
Course Duration	1 week
Outcomes	<p>a.Acquire basic knowledge of shaping, motivation, stress, and life-span development</p> <p>b.Acquire basic theories and methodologies for maintaining and promoting health and basic knowledge of social stress and health.</p> <p>c.Acquire basic knowledge of the effects of social and cultural factors on health.</p> <p>d.Understand the role of communication in (1) maintaining and promoting health and (2) acquire methods for promoting it.</p> <p>e.Acquire theory and actual knowledge related to responses to stress (stress coping and stress management).</p> <p>f. Develop the ability to devise (1) strategies for treating hypothetical cases of difficult situations and (2) guidance strategies for maintaining and promoting</p>

	<p>health by applying the above knowledge and theoretical understanding.</p> <p>g. Develop the ability to motivate and offer guidance to people so that they can behave in a way that will help them to live healthy lives</p>
Learning Objectives	<p>Differentiate between metallic and non – metallic irritants</p> <p>Classify irritants</p> <p>Classify plant and animal irritants</p> <p>Describe mechanism of poisoning by an irritant</p> <p>Explain management, medicolegal features and postmortem features of irritant poisoning</p>
Course Title	<b>POISONS ACTING ON CNS</b>
Course Duration	1 week
Outcomes	<p>At the end of this chapter the students shall be able to understand, apply, basic concepts, levels, roles, principles and type of communication used in health education and health promotion in order to improve the health of individual and community</p>
Learning Objectives	<p>Classify poisons acting on CNS.</p> <p>Classify different CNS Stimulants and CNS Depressants</p> <p>Describe mechanism of poisoning by drug or poison acting on CNS</p> <p>Explain management, medicolegal features and postmortem features of CNS poisoning</p>
Course Title	<b>CARDIAC POISONS</b>
Course Duration	1 week
Outcomes	<p>a. Capacity to integrate knowledge and to analyse, evaluate and manage the different public health aspects of disaster events at a local and global levels, even when limited information is available.</p> <p>b. Capacity to describe, analyse and evaluate the environmental, social, cultural, economic, legal and organisational aspects influencing vulnerabilities and capacities to face disasters.</p> <p>c. Capacity to work theoretically and practically in the processes of disaster management (disaster risk reduction, response, and recovery) and relate their interconnections, particularly in the field of the Public Health aspects of the</p>

	<p>disasters.</p> <p>d. Capacity to manage the Public Health aspects of the disasters.</p> <p>e. Capacity to obtain, analyse, and communicate information on risks, relief needs and lessons learned from earlier disasters in order to formulate strategies for mitigation in future scenarios with the ability to clearly present and discuss their conclusions and the knowledge and arguments behind them.</p> <p>f. Capacity to design and perform research on the different aspects of the emergencies and disaster events while demonstrating insight into the potential and limitations of science, its role in society and people’s responsibility for how it is used.</p> <p>g. Capacity to analyse and evaluate research work on the field of emergencies and disaster while demonstrating insight into the potential and limitations of science, its role in society and people’s responsibility for how it is used.</p>
Learning Objectives	<p>Classify Cardiac Poisons</p> <p>Classify cardiac stimulants and cardiac depressants</p> <p>Describe mechanism of poisoning by a cardiac poison</p> <p>Explain management, medicolegal features and postmortem features of cardiac poisoning</p>
Course Title	<b>INSECTICIDES</b>
Course Duration	1 week
Outcomes	<p>Know the importance of the medical ethics in medical practice. The students shall</p> <p>Have the clear concepts about the four disciplines of medical ethics &amp; guidelines according to PM&amp;DC code of ethics at national level.</p>
Learning Objectives	<p>Classify insecticides.</p> <p>Classify Domestic and commercial insecticides</p> <p>Describe mechanism of poisoning by an insecticides</p> <p>Explain management, medicolegal features and postmortem features of insecticide poisoning</p>
Course Title	<b>ASPHYXIANTS</b>

Course Duration	1 week
Outcomes	Interactive Lectures, SGD, TBL, Flip Class Sessions, Tutorial & Visit to Medicolegal Clinics and Forensic Science Agency
Learning Objectives	<p>Classify asphyxiants</p> <p>Demonstrate general signs and symptoms by asphyxiant poisons</p> <p>Describe mechanism of poisoning by an asphyxiant poisons</p> <p>Explain management, medicolegal features and postmortem features of asphyxiant poisoning</p>

**STUDY GUIDE**  
**ENT**  
**FOURTH PROFESSIONAL MBBS**



**Pak Red Crescent Medical & Dental College**

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48-KM Multan Road, Lahore-Pakistan.

TITLE	ENT
<b>INTRODUCTION</b>	The curriculum of ENT is designed to outline the learning objectives in ENT that should be achieved during undergraduate training. Having achieved these objectives, the student (and subsequent doctor) will then be competent to recognise common ENT conditions and institute appropriate initial treatments/management. Doctors practising in General Practice, Acute Medicine, Accident and Emergency Medicine, Paediatrics and Care of the Elderly will find this knowledge especially helpful.
<b>Target Students</b>	4th year MBBS
<b>Duration</b>	
<b>AIM</b>	<p>To acquire sufficient knowledge of ENT conditions to be able to</p> <ul style="list-style-type: none"> <li>• recognize common problems and when and what to refer.</li> <li>• To learn the skills required to examine patients with ear, nose, and throat diseases and to make a presumptive diagnosis.</li> <li>• To learn how to prioritize and manage different ENT conditions.</li> <li>• To become stimulated and interested in the specialty of ENT.</li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• To learn the signs and symptoms of common ENT problems.</li> <li>• To learn the techniques of ear, nose, throat and neck examination.</li> <li>• To demonstrate an understanding of the basic anatomy and physiology of the ear and upper aero-digestive tract, and relate this knowledge to the signs and symptoms of ENT disease.</li> <li>• To understand the medical and surgical treatment of common ENT Conditions.</li> <li>• To be familiar with the commonly used medications for treating ENT problems, and their side effects.</li> <li>• To understand the risks and complications of ENT surgery.</li> <li>• To recognize the different ways in which head and neck malignancy can present, and to understand that early diagnosis of head and neck cancer leads to improved survival.</li> <li>• To learn the ways in which ENT related communication difficulties can arise and be overcome.</li> <li>• To appreciate and be sensitive to the impact of ENT conditions on patients and their families.</li> <li>• To communicate effectively with the patient, the family and the community regarding ENT diseases and its related issues.</li> <li>• To understand medical ethics and its application pertaining to otorhinolaryngology and maintain the confidentiality of the patient.</li> <li>• To understand the prevalence and prevention of the Common Public Health Problem related to Otorhinolaryngology in the community.</li> <li>• To understand the principles of medical research including fundamentals of Information Technology.</li> </ul>

<b>Outcome</b>	<b>Practical skills</b> <ul style="list-style-type: none"><li>• Use of the otoscope to examine the external auditory meatus and tympanic membrane.</li><li>• Basic examination of the nose.</li><li>• Examination of the oropharynx, nasopharynx and laryngopharynx.</li><li>• Examination of the neck.</li><li>• Management of nosebleed and oral bleeding. Instil nose and ear drops/medication.</li><li>• Take swab from ear, nose and throat.</li><li>• Tuning fork tests</li></ul>
<b>Recommended books</b>	<ol style="list-style-type: none"><li>1. Text book of ENT by Logan Turner. Latest Ed.</li><li>2. Diseases of ENT by Dhengra. Latest Ed.</li><li>3. Text Book of ENT by Masud.</li><li>4. Oxford Hand Book of ENT by Prescott.</li><li>5. Online Journals and Reading Materials through HEC Digital Library Facility.</li></ol>

**STUDY GUIDE**

**OPHTHALMOLOGY**

**FOURTH PROFESSIONAL MBBS**



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<b>OPHTHALMOLOGY</b>	
INTRODUCTION	Examination of the eye and adnexa is an important part of the general examination of a patient. The eye may reveal a wide variety of systemic diseases and eye pathology is ever more common in the aging population for whom we need to provide care. An understanding of the effects of eye disease is critical to holistic patient care. Reduced visual function can have wide spread implications on the mobility, independence and psychological wellbeing of all patients. A number of acute ophthalmological conditions can be readily treated if recognized in their early stages and all doctors should be able to recognize these. In addition, sight loss is an increasing health concern in Pakistan with an aging population. An essential part of clinical work is to effectively diagnose, treat and refer people with an eye condition.
Target Students	Fourth year MBBS
Assessment methods	Knowledge of students is assessed by MCQS, SEQs , VIVA and OCSE
<b>Course Title</b>	<b>Basic Anatomy and the functions of the Eyeball and Orbit</b>
Duration	1 week
Out comes	The students should have knowledge of the following aspects of Anatomy and Physiology: <ul style="list-style-type: none"> <li>• Anatomy of the eye and orbit</li> <li>• Anatomy of the carotid artery system in relationship to ocular disorders</li> <li>• Anatomy of the neuronal pathways for the pupils</li> <li>• Anatomy of chiasm/optic tract/optic radiation/visual cortex</li> <li>• Anatomy of the extraocular muscles and their association with cranial nerve palsies.</li> <li>• Aqueous humor production and intraocular pressure</li> <li>•Ciliary muscles/accommodation</li> <li>• Lens and presbyopia</li> <li>• Retinal function</li> </ul>
<b>Course Title</b>	<b>Basics of eye</b>
Duration	1 week
Out comes	To attain sufficient knowledge of proptosis and its causes
Specific Objectives	The students should: <ul style="list-style-type: none"> <li>• Anatomy of eyeball</li> <li>• Physiology of eyeball</li> <li>• Pathophysiology of eyeball</li> </ul>
<b>Course Title</b>	<b>Orbit</b>
Duration	2 week
Out comes	To attain sufficient knowledge of common eyelid diseases
Specific Objectives	<ul style="list-style-type: none"> <li>• The students of 4<sup>th</sup> year should:</li> <li>• Be able to examine a case of proptosis</li> <li>• Be able to diagnose Orbital cellulitis</li> <li>• Have sufficient knowledge of managment plan of thyroid eye</li> </ul>

	disease
<b>Course Title</b>	<b>Eyelids and concerned diseases</b>
Duration	2 week
Out comes	To attain sufficient knowledge of common conjunctival diseases
Specific Objectives	The students of fourth year should be able to diagnose and manage following diseases <ul style="list-style-type: none"> <li>The students should be able to examine,diagnose and manage ptosis,chalazion,sty,blepharitis,entropion,extropion and trichiasis</li> </ul>
<b>Course Title</b>	<b>Cornea</b>
Duration	2 week
Out comes	To attain sufficient knowledge of risk factors and complications of corneal ulcers, episcleritis and scleritis
Specific Objectives	<ul style="list-style-type: none"> <li>The students of 4<sup>th</sup> year should be able to examine,diagnose, various corneal diseases like Keratitis,Corneal ulcer and abscess.</li> </ul>
<b>Course Title</b>	<b>Sclera</b>
Duration	1 week
Out comes	To attain sufficient knowledge of Composition and functions of Tear film
Specific Objectives	The students of fourth year should be able to diagnose the following problems of lacrimal system <ul style="list-style-type: none"> <li>The students of 4<sup>th</sup> year should be able to examine,diagnose and mannage scleritis and episcleritis</li> </ul>
<b>Course Title</b>	<b>Conjunctivae</b>
Duration	1 week
Out comes	To attain knowledge of drugs used in common ophthalmic conditions
Specific Objectives	The students of 4 <sup>th</sup> year should be able to examine and diagnose various types of conjunctivitis,trachoma,subconjunctival haemorrhage and hypophion
<b>Course Title</b>	<b>Uveal tract</b>
Duration	1 week
Out comes	To attain sufficient knowledge of ocular manifestations of Vitamin A deficiency
Specific Objectives	To obtain sufficient knowledge about uveal diseases and its association with systemic diseases
<b>Course Title</b>	<b>Lens</b>
Duration	3 weeks
Out comes	To attain sufficient knowledge of white pupil with reference to cataract and its classification
Specific Objectives	The students of fourth should be able: <ul style="list-style-type: none"> <li>To diagnose congenital, senile and secondary cataract</li> <li>To explain management and visual rehabilitation of cataract surgery to the patient</li> </ul>
<b>Course Title</b>	<b>Glaucoma</b>
Duration	3 weeks
Out comes	To attain basic knowledge of raised intraocular pressure and classification of glaucomaincludingPrimary open angle, closed angle glaucoma and Secondary glaucoma due to hyper-mature cataract and uveitis.

Specific Objectives	The students should be aware of the principles of medical and surgical management of different types of glaucoma
<b>Course Title</b>	<b>Vitro-Retina</b>
Duration	2 week
Out comes	To attain sufficient knowledge of common vitreo-retinal diseases
Specific Objectives	The students should be able to clinically diagnose the following diseases <ul style="list-style-type: none"> <li>• Posterior vitreous detachment</li> <li>• Primary retinal detachment</li> <li>• Diabetic Retinopathy</li> <li>• Hypertensive Retinopathy,</li> <li>• Retinitis Pigmentosa</li> <li>• Retinoblastoma</li> </ul>
<b>Course Title</b>	<b>Neuro-Ophthalmology</b>
Duration	2 weeks
Out comes	To attain sufficient knowledge of <ul style="list-style-type: none"> <li>• Pupillary reflexes and their common abnormalities</li> <li>• Papilloedema, Optic Neuritis</li> <li>• Optic Atrophy</li> <li>• Visual Field defects in the lesions of Chiasma and visual Pathway.</li> </ul>
Specific Objectives	The students should be able to check and interpret <ul style="list-style-type: none"> <li>• Papillary reflexes</li> <li>• Optic nerve functions</li> <li>• Visual fields by confrontation method</li> </ul>
<b>Course Title</b>	<b>Injuries</b>
Duration	1 week
Out comes	To attain sufficient knowledge of <ul style="list-style-type: none"> <li>• Extraocular Foreign Bodies</li> <li>• Closed globe injuries</li> <li>• Open globe injuries with or without retained Intra ocular foreign bodies</li> <li>• Burns and Chemical Injuries</li> <li>• Sympathetic Ophthalmitis</li> </ul>
Specific Objectives	The students of fourth year should be able to <ul style="list-style-type: none"> <li>• Remove superficial conjunctival foreign bodies</li> <li>• Manage superficial chemical injuries in emergency</li> </ul>
<b>Course Title</b>	<b>Squint and Amblyopia</b>
Duration	2 week
Out comes	To attain basic knowledge of definition and classification of squint and amblyopia
Specific Objectives	The students should be able to identify a case of squint and must be acquainted with the principles of management of squint and amblyopia
<b>Course Title</b>	<b>Errors of Refraction</b>
Duration	1 week
Out comes	To attain sufficient knowledge of Optical System of Normal Eye and errors of refraction
Specific Objectives	The students should be acquainted with the principles of management of errors of refraction
<b>Course Title</b>	<b>Clinical Competence</b>

Duration	4 weeks
Out comes	<p>The fourth year students should be competent in:</p> <ul style="list-style-type: none"> <li>• Taking a comprehensive history</li> <li>• Performing basic ocular examination</li> <li>• Formulate differential diagnosis and Management plan</li> <li>• Document clearly and proficiently</li> <li>• Demonstrate the best practices in communication with patients, families in a professional and competent manner.</li> </ul>
Specific Objectives	<p><b>History Taking</b></p> <ul style="list-style-type: none"> <li>• Defects in Vision</li> <li>• Pain in and around the Eye</li> <li>• Discharging Eye</li> <li>• Abnormal appearance of the Eye and Orbit</li> </ul> <p><b>Examination</b></p> <ul style="list-style-type: none"> <li>• Visual Acuity, for distance and near</li> <li>• Use of a pinhole</li> <li>• Examination of Adnexa and anterior segment of the eye.</li> <li>• Eversion of the upper Eye Lid</li> <li>• Lacrimal regurgitation Test</li> <li>• Detection of the deviated Eye</li> <li>• Ocular Movement</li> <li>• Pupillary Reflexes (Afferant Pupillary defects)</li> <li>• Measurement of Intra ocular pressure.</li> <li>• Digital Tonometry</li> <li>• Distant Direct Ophthalmoscopy for Identification of defects in Ocular Media</li> <li>• Familiarization with Direct Ophthalmoscopy</li> <li>• Confrontation test for field of vision</li> <li>• Familiarization with Retinoscopy</li> <li>• Familiarization with Indirect Ophthalmoscopy,</li> <li>• Slit Lamp and its Uses</li> <li>• Visual Fields and Use of Laser in Ophthalmology</li> </ul> <p><b>Procedures</b></p> <ul style="list-style-type: none"> <li>• Irrigation of eye</li> <li>• Instillation of eye drops</li> <li>• Staining for corneal ulcer</li> <li>• Removal of superficial foreign bodies</li> <li>• Rational use of topical anaesthesia</li> <li>• Preparation for operation and post operative management</li> <li>• Understand medical ethics and maintain the confidentiality of the patient</li> </ul>
<b>Recommended Books</b>	<ol style="list-style-type: none"> <li>1. Parson’s Diseases of the Eye by RamanjitSihala and RadhikaTandor. 3rd Ed</li> <li>2. Ophthalmology by RenuJogi</li> <li>3. Clinical Textbook of Ophthalmology by Dr. Saleem Akhter</li> <li>4. Kanski’s Ophthalmology</li> <li>5. Ophthalmology Principles and Concepts Newill F. W.</li> <li>6. Online Journals and Reading Materials through HEC Digital Library Facility.</li> </ol>