



# Paramedical Program

<b>Specialization</b>	<b>Medical Laboratories</b>
<b>Course Number</b>	<b>21107211</b>
<b>Course Title</b>	<b>Pathology</b>
<b>Credit Hours</b>	<b>(3)</b>
<b>Theoretical Hours</b>	<b>(3)</b>
<b>Practical Hours</b>	<b>(0)</b>



**Brief Course Description:**

This course deals with the causes and mechanisms of human diseases, Therefore it is one of main foundations of medicine, and it serves to bridge basic medical disciplines with clinical sciences. Moreover, it introduces the basic concepts, terminology, etiology, and characteristics of pathological processes.

**Course Objectives:**

Upon the completion of the course, the student should be able to:

1. Understand basic tissue reactions to different types of injuries
2. Know the etiology of major diseases
3. Know the pathogenesis (how) of the diseases
4. Describe the morphologic effects produced by the disease
5. Describe the effects of the disease on the function of organs
6. Know the outcome and possible complications of the disease
7. Know the signs and symptoms of disease – **Clinical features.**



**Detailed Course Description:**

Unit Number	Unit Name	Unit Content	Time Needed
1	Introduction	<ul style="list-style-type: none"> <li>- Definition of Pathology</li> <li>- Homeostasis</li> <li>- Types, Causes &amp; Mechanism of Cell Injury</li> <li>- Cellular Adaptation: Atrophy, Hypertrophy, Hyperplasia and Metaplasia</li> <li>- Cell Death: Necrosis, Apoptosis, Gangrene</li> </ul>	
2	Inflammation	<ul style="list-style-type: none"> <li>- Causes, Mechanism and Signs of inflammation</li> <li>- Inflammatory cells</li> <li>- Vascular and Cellular Response</li> <li>- Acute and Chronic inflammation</li> <li>- Edema - Inflammatory Exudates</li> </ul>	
3	Neoplasia	<ul style="list-style-type: none"> <li>- Benign and Malignant neoplasm</li> <li>- Invasion and Metastasis</li> <li>- Carcinogenesis</li> <li>- Histological appearance of neoplasm</li> <li>- Naming of Neoplasms Childhood Cancers</li> </ul>	
4	Genetics and Congenital Disorders	<ul style="list-style-type: none"> <li>- Pattern of Inheritance</li> <li>- Type of Congenital disorders: Genetic Disorders, Malformations, Multifactorial</li> <li>- Disorders due to Environmental Influences</li> <li>- Irradiations, Chemical and Drugs, Infectious Agents</li> </ul>	
5	Diseases of hematopoietic and lymphatic system	<ul style="list-style-type: none"> <li>- Megaloblastic Anemia Aplastic anemia and hemolysis ,Common disorders of WBC</li> <li>- Neoplastic disorders of Marrow Leukemia, Lymphomas( Hodgkin,s and Non-Hodgkin ), Myeloma</li> </ul>	

6	Hemodynamic (Circulatory) Disorders,	<ul style="list-style-type: none"> <li>- Edema , congestion, arterial and vein occlusions.</li> <li>- Blood Clotting and Coagulation and hemorrhage</li> <li>- Thrombosis ,Embolism- Types of Embolism. DIC</li> <li>- Ischemia and Infarction</li> <li>- Shock- Mechanism and Common types of shock</li> </ul>	
7	Heart and Blood Vessels Pathology	<ul style="list-style-type: none"> <li>- Arteriosclerosis; Risk factors</li> <li>- Coronary Heart Disease, Ischemic Heart Disease, Angina Pectoris. Myocardial infarction. Congenital Valvular heart disease , Rheumatic Heart Disease ,Pericarditis, Cardiomyopathy</li> <li>- Burger's Disease. Reynolds phenomena. Thrombophlebitis , " Varicose veins, Aneurysm</li> </ul>	
8	Pulmonary Pathology	<ul style="list-style-type: none"> <li>- Rhinitis,Pharyngitis,Sinusitis,Laryngitis,Bronchitis, Pneumonias, , Pleurality ,Emphysema, Bronchiectasis ,Interstitial Lung DiseasesAtelectasis</li> <li>- Allergy and Asthma</li> <li>- Tuberculosis</li> <li>- Pneumoconiosis, Silicosis, Asbestosis</li> <li>-Lung cancers:- Squamous carcinoma, Adenocarcinoma , Small cell carcinoma, Oat cell carcinoma</li> </ul>	
9	Gastrointestinal Pathology	<ul style="list-style-type: none"> <li>- Esophagus: Obstruction, Reflux , Varices.Cancer</li> <li>- Stomach : Gastritis.Peptic Ulcer, Gastric cancer..</li> <li>- Disorders of Intestines: Obstruction, Mal-absorption, Inflammations – Infections ,Neoplasms and cancer. Polyps. Appendicitis</li> </ul>	
10	Hepatobiliary and Pancreas Pathology	<ul style="list-style-type: none"> <li>- Liver: Hepatitis- Viral Hepatitis- Alcoholic Hepatitis , Fatty liver ,Cirrhosis Bilirubin-Conjugated &amp; Un-conjugated Bilirubin - Jaundice or icterus, Jaundice</li> <li>-Gallbladder and Biliary tract: Chole-cystitis</li> </ul>	

		<p>Chole-lithiasis</p> <p>-Tumors of Liver: Hepatoma, Hepatocellular carcinoma</p> <p>- Pancreas: acute and chronic pancreatitis. Tumors</p>	
11	Renal & Male Reproductive Pathology	<p>- Urinary Tract Infection</p> <p>- Pyelonephritis</p> <p>- Glomerulonephritis</p> <p>- Renal failure</p> <p>- Nephrosclerosis</p> <p>- Hydronephrosis</p> <p>- Urolithiasis</p> <p>- Tumors of Kidney: clearcellular ca, Wilm's tumor</p> <p>- Prostate: hypertrophy and cancer</p> <p>- Testis: Hernia, Hydrocele and cancer</p>	
12	Breast Pathology	<p>- Galactorrhea and Mastitis</p> <p>- Fibroadenoma and Fibrocystic disease,</p> <p>- Breast Cancer</p>	
13	Bone Pathology	<p>- Acute and Chronic Osteomyelitis</p> <p>- Osteoporosis</p> <p>- Osteomalacia and Rickets</p> <p>- Bone diseases associated with hyperparathyroidism</p> <p>- Bone tumors</p>	
14	Central Nervous System Pathology	<p>- Cerebral edema, hemorrhage , Hydrocephalus;</p> <p>- Ischemia &amp; Cerebral infarction, Meningitis;</p> <p>- Tumors: Glioma , Meningioma</p>	





**Evaluation Strategies:**

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Homeworks	10%	--/--/----
	Final Exam	50%	--/--/----

**Teaching Methodology:**

- ❖ Lectures
- ❖ Slides and posters
- ❖ Practice inside labs

**Text Books & References:**

**Reference**

1. Kumar, Cotran, Robbins, Basic Pathology. W.B. Saunders, 7th ed., 2004.
2. Pathology Picture Book. Stevens, Lowe, Kirk; Mosby, 1st ed, 1997.
3. David Levison, Macsween and Robin Reid: Muir's Textbook of Pathology 14<sup>th</sup> edition 2008
4. Essentials of Pathophysiology: Concepts of Altered Health States (Lippincott Williams & Wilkins) 2<sup>nd</sup> edition 2006



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