

## **PATHOLOGY - I**

**PLACEMENT:** III SEMESTER

**THEORY:** 1 Credit (20 hours) (includes lab hours also)

**DESCRIPTION:** This course is designed to enable students to acquire knowledge of pathology of various disease conditions, understanding of genetics, its role in causation and management of defects and diseases and to apply this knowledge in practice of nursing.

**COMPETENCIES:** On completion of the course, the students will be able to

1. Apply the knowledge of pathology in understanding the deviations from normal to abnormal pathology.
2. Rationalize the various laboratory investigations in diagnosing pathological disorders.
3. Demonstrate the understanding of the methods of collection of blood, body cavity fluids, urine and feces for various tests.
4. Apply the knowledge of genetics in understanding the various pathological disorders.
5. Appreciate the various manifestations in patients with diagnosed genetic abnormalities.
6. Rationalize the specific diagnostic tests in the detection of genetic abnormalities.
7. Demonstrate the understanding of various services related to genetics.

## COURSE OUTLINE

### T – Theory

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
I	8 (T)	<p>Define the common terms used in pathology</p> <p>Identify the deviations from normal to abnormal structure and functions of body system</p>	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Importance of the study of pathology</li> <li>• Definition of terms in pathology</li> <li>• Cell injury: Etiology, pathogenesis of reversible and irreversible cell injury, Necrosis, Gangrene</li> <li>• Cellular adaptations: Atrophy, Hypertrophy, Hyperplasia, Metaplasia, Dysplasia, Apoptosis</li> <li>• Inflammation:               <ul style="list-style-type: none"> <li>○ Acute inflammation (Vascular and Cellular events, systemic effects of acute inflammation)</li> <li>○ Chronic inflammation (Granulomatous inflammation, systemic effects of chronic inflammation)</li> </ul> </li> <li>• Wound healing</li> <li>• Neoplasia: Nomenclature, Normal and Cancer cell, Benign and malignant tumors, Carcinoma in situ, Tumor metastasis: general mechanism, routes of spread and examples of each route</li> <li>• Circulatory disturbances: Thrombosis, embolism, shock</li> <li>• Disturbance of body fluids and electrolytes: Edema, Transudates and Exudates</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Explain using slides</li> <li>• Explain with clinical scenarios</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer</li> <li>• Objective type</li> </ul>
II	5 (T)	<p>Explain pathological changes in disease conditions of various systems</p>	<p><b>Special Pathology</b></p> <p><b>Pathological changes in disease conditions of selected systems:</b></p> <p><b>1. Respiratory system</b></p> <ul style="list-style-type: none"> <li>• Pulmonary infections: Pneumonia, Lung abscess, pulmonary tuberculosis</li> <li>• Chronic Obstructive Pulmonary Disease: Chronic bronchitis, Emphysema, Bronchial Asthma, Bronchiectasis</li> <li>• Tumors of Lungs</li> </ul> <p><b>2. Cardio-vascular system</b></p> <ul style="list-style-type: none"> <li>• Atherosclerosis</li> <li>• Ischemia and Infarction.</li> <li>• Rheumatic Heart Disease</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Explain using slides, X-rays and scans</li> <li>• Visit to pathology lab, endoscopy unit and OT</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer</li> <li>• Objective type</li> </ul>

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
			<ul style="list-style-type: none"> <li>• Infective endocarditis</li> <li><b>3. Gastrointestinal tract</b></li> <li>• Peptic ulcer disease (Gastric and Duodenal ulcer)</li> <li>• Gastritis-H Pylori infection</li> <li>• Oral mucosa: Oral Leukoplakia, Squamous cell carcinoma</li> <li>• Esophageal cancer</li> <li>• Gastric cancer</li> <li>• Intestinal: Typhoid ulcer, Inflammatory Bowel Disease (Crohn's disease and Ulcerative colitis), Colorectal cancer</li> <li><b>4. Liver, Gall Bladder and Pancreas</b></li> <li>• Liver: Hepatitis, Amoebic Liver abscess, Cirrhosis of Liver</li> <li>• Gall bladder: Cholecystitis.</li> <li>• Pancreas: Pancreatitis</li> <li>• Tumors of liver, Gall bladder and Pancreas</li> <li><b>5. Skeletal system</b></li> <li>• Bone: Bone healing, Osteoporosis, Osteomyelitis, Tumors</li> <li>• Joints: Arthritis - Rheumatoid arthritis and Osteoarthritis</li> <li><b>6. Endocrine system</b></li> <li>• Diabetes Mellitus</li> <li>• Goitre</li> <li>• Carcinoma thyroid</li> </ul>		

III	7 (T)	Describe various laboratory tests in assessment and monitoring of disease conditions	<b>Hematological tests for the diagnosis of blood disorders</b> <ul style="list-style-type: none"> <li>• Blood tests: Hemoglobin, White cell and platelet counts, PCV, ESR</li> <li>• Coagulation tests: Bleeding time (BT), Prothrombin time (PT), Activated Partial Prothrombin Time (APTT)</li> <li>• Blood chemistry</li> <li>• Blood bank: <ul style="list-style-type: none"> <li>○ Blood grouping and cross matching</li> <li>○ Blood components</li> <li>○ Plasmapheresis</li> <li>○ Transfusion reactions</li> </ul> </li> </ul> <p><b>Note:</b> Few lab hours can be planned for observation and visits (Less than 1 credit, lab hours are not specified separately)</p>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Visit to clinical lab, biochemistry lab and blood bank</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer</li> <li>• Objective type</li> </ul>
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### Bibliography – Pathology

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