Subject name: Pathophysiology
Subject code: 13PH0304

Scope: Pathophysiology is the study of causes of diseases and reactions of the body to such disease producing causes. This course is designed to impart a thorough knowledge of the relevant aspects of pathology of various conditions with reference to its pharmacological applications, and understanding of basic pathophysiological mechanisms. Hence it will not only help to study the syllabus of pathology, but also to get baseline knowledge required to practice medicine safely, confidently, rationally and effectively.

Objectives: Upon completion of the course, the student shall be able to:
1. Describe the etiology and pathogenesis of the selected disease states;
2. Name the signs and symptoms of the diseases; and
3. Mention the complications of the diseases.

Theory:

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<th>Sr.</th>
<th>Topics</th>
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<td>1.</td>
<td><strong>Basic principles of Cell injury and Adaptation:</strong></td>
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<td></td>
<td>Introduction, definitions, Homeostasis, Components and Types of Feedback systems, Causes of cellular injury, Pathogenesis (Cell membrane damage, Mitochondrial damage, Ribosome damage, Nuclear damage), Morphology of cell injury – Adaptive changes (Atrophy, Hypertrophy, hyperplasia, Metaplasia, Dysplasia), Cell swelling, Intra cellular accumulation, Calcification, Enzyme leakage and Cell Death Acidosis &amp;Alkalosis, Electrolyte imbalance. Basic mechanism involved in the process of inflammation and repair: Introduction, Clinical signs of inflammation, Different types of Inflammation, Mechanism of Inflammation – Alteration in vascular permeability and blood flow, migration of WBC’s, Mediators of inflammation, Basic principles of wound healing in the skin, Pathophysiology of Atherosclerosis.</td>
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<td><strong>Cardiovascular System:</strong></td>
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<td>Hypertension, congestive heart failure, ischemic heart disease (angina, myocardial infarction, atherosclerosis and arteriosclerosis). Respiratory system: Asthma, Chronic obstructive airways diseases. Renal system: Acute and chronic renal failure.</td>
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<td><strong>Haematological Diseases:</strong></td>
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<td>4.</td>
<td><strong>Inflammatory bowel diseases, jaundice, hepatitis (A, B, C, D, E, F) alcoholic liver disease. Disease of bones and joints:</strong> Rheumatoid arthritis, osteoporosis and gout. <strong>Principles of cancer:</strong> classification, etiology and pathogenesis of cancer.</td>
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<td>Diseases of bones and joints:</td>
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<td>Rheumatoid Arthritis, Osteoporosis, Gout.</td>
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**Principles of Cancer:**
Classification, etiology and pathogenesis of Cancer.

5. **Infectious diseases:**
Meningitis, Typhoid, Leprosy, Tuberculosis, Urinary tract infections.  
**Sexually transmitted diseases:**
AIDS, Syphilis, Gonorrhea.

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**Recommended books (Latest editions):**

1. Vinay Kumar, Abul K. Abas, Jon C. Aster; Robbins & Cotran Pathologic Basis of Disease; South Asia edition; India; Elsevier; 2014.
4. Best, Charles Herbert 1899-1978; Taylor, Norman Burke 1885-1972; West, John B (John Burnard); Best and Taylor’s Physiological basis of medical practice; 12th ed; united states; 1991 [1990 printing].
5. William and Wilkins, Baltimore; 1991 [1990 printing].
9. V. Kumar, R. S. Cotran and S. L. Robbins; Basic Pathology; 6th edition; Philadelphia; WB Saunders Company; 1997.

**Recommended Journals:**

1. The Journal of Pathology. ISSN: 1096-9896 (Online).
2. The American Journal of Pathology. ISSN: 0002-9440.
3. Pathology. 1465-3931 (Online).
5. Indian Journal of Pathology and Microbiology. ISSN-0377-4929.