



Course Syllabus
Gyanmanjari Pharmacy College
Semester-2(B.Pharm.)

Subject: Pathophysiology and Primary First aid (BPHBP12309)

Type of course: Ability Enhancement Courses (AEC)

Prerequisite: NA

Rationale: 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.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
CI	T	P		C	Theory Marks		Practical Marks	
			ESE		MSE	VP	CA	
3	-	-	3	75	25	-	-	100

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.



Course Content:

Chapter No	Course content	Hrs	% Weightage
1.	<p>Basic principles of Cell injury and Adaptation: 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 & Alkalosis, Electrolyte.</p> <p>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.</p>	10	40
2.	<p>Cardiovascular System: Hypertension, congestive heart failure, ischemic heart disease (angina, myocardial infarction, atherosclerosis and arteriosclerosis)</p> <p>Respiratory system: Asthma, Chronic obstructive airways diseases.</p> <p>Renal system: Acute and chronic renal failure</p>	6	15
3.	<p>Haematological Diseases: Iron deficiency, megaloblastic anemia (Vit B12 and folic acid), sickle cell anemia, Thalassemia, hereditary acquired anemia, hemophilia</p> <p>Endocrine system: Diabetes, thyroid diseases, disorders of sex hormones</p> <p>Nervous system: Epilepsy, Parkinson's disease, stroke, psychiatric disorders: depression, schizophrenia and Alzheimer's disease</p>	6	15
4.	<p>Gastrointestinal system: Peptic Ulcer , Inflammatory bowel diseases, jaundice, hepatitis (A,B,C,D,E,F) alcoholic liver disease</p> <p>Disease of bones and joints: Rheumatoid arthritis, osteoporosis and gout.</p>	6	15
5.	<p>Principles of cancer: classification, etiology and pathogenesis of cancer</p> <p>Infectious diseases: Meningitis, Typhoid, Leprosy, Tuberculosis Urinary tract infections</p> <p>Sexually transmitted diseases: AIDS, Syphilis, Gonorrhoea</p>	6	15
6.	<p>First Aid:</p> <p>A. Basic First Aid</p> <ul style="list-style-type: none"> • Aims of first aid & First aid and the law. • Dealing with an emergency, Resuscitation (basic CPR). • Recovery position, Initial top to toe assessment. • Hand washing and Hygiene • Types and Content of a First aid Kit 	6	15



	<p>B. First AID Technique</p> <ul style="list-style-type: none"> • Dressings and Bandages. • Fast evacuation techniques (single rescuer). • Transport techniques. <p>C. First aid related with Wounds and Injuries</p> <ul style="list-style-type: none"> • Type of wounds, Small cuts and abrasions • Head, Chest, Abdominal injuries • Amputation, Crush injuries, Shock <p>D. First aid related with respiratory system:</p> <ul style="list-style-type: none"> • No breathing or difficult breathing, Drowning, Choking, Strangulation and hanging, swelling within the throat, Suffocation by smoke or gases and Asthma. <p>E. First aid related with Bones, Joints Muscle related injuries</p> <ul style="list-style-type: none"> • Basics of The skeleton, Joints and Muscles, Fractures (injuries to bones). 		
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Suggested Specification table with Marks (Theory):75

Distribution of Theory Marks (Revised Bloom’s Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	50 %	20%	05%	05%	-

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course the students should be able to:	
CO1	Apply basic principles of Cell injury Adaptation and explain the concept of inflammation and repair and First aid treatment.
CO2	Recognize the etiology and pathogenesis of various disorders pertaining to CVS, respiratory and renal system.
CO3	Classify etiology and pathogenesis of cancer pertaining to Hematological, endocrine, GI and nervous system.
CO4	Learn the skill needed to assess the ill or injured person and learn the skills to provide CPR to infants, children and adults
CO5	Identify Mental Health status and Psychological First Aid.



Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

- [1] Vinay Kumar, Abul K. Abas, Jon C. Aster; Robbins & Cotran Pathologic Basis of Disease; South Asia edition; India; Elsevier; 2014.
- [2] Harsh Mohan; Text book of Pathology; 6th edition; India; Jaypee Publications; 2010.
- [3] Laurence B, Bruce C, Bjorn K. ; Goodman Gilman's The Pharmacological Basis of Therapeutics; 12th edition; New York; McGraw-Hill; 2011.
- [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;
- [5] William and Wilkins, Baltimore; 1991 [1990 printing].
- [6] Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston; Davidson's Principles and Practice of Medicine; 21st edition; London; ELBS/Churchill Livingstone; 2010.
- [7] Guyton A, John .E Hall; Textbook of Medical Physiology; 12th edition; WB Saunders Company; 2010.
- [8] Joseph DiPiro, Robert L. Talbert, Gary Yee, Barbara Wells, L. Michael Posey;
- [9] Pharmacotherapy: A Pathophysiological Approach; 9th edition; London; McGraw- Hill Medical; 2014.
- [10] V. Kumar, R. S. Cotran and S. L. Robbins; Basic Pathology; 6th edition; Philadelphia; WB Saunders Company; 1997.
- [11] Roger Walker, Clive Edwards; Clinical Pharmacy and Therapeutics; 3rd edition; London; Churchill Livingstone publication; 2003.

