



**Faculty of Pharmacy**  
**Bachelor of Pharmacy (B. Pharm.)**  
**(W. E. F.: 2023-24)**  
**Document ID: SUTEPHB-01**

<b>Name of Faculty</b>	:	Faculty of Pharmacy
<b>Name of Program</b>	:	Bachelor of Pharmacy
<b>Course Code</b>	:	2BPH04
<b>Course Title</b>	:	Pathophysiology
<b>Type of Course</b>	:	Basic Pharmaceutical Sciences
<b>Year of Introduction</b>	:	2023-24

<b>Prerequisite</b>	:	Zeal to learn the subject
<b>Course Objective</b>	:	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.
<b>Course Outcomes</b>	:	At the end of this course, students will be able to:
	CO1	To remember the basic principles of cell injury and adaptation along with mechanism involved in process of inflammation and repair.
	CO2	To know the Pathogenesis of the cardiovascular diseases, infectious diseases, sexually transmitted diseases, thyroid diseases, renal diseases, disease of bones and hematological diseases.
	CO3	Understand the signs, symptoms, classification, etiology and pathogenesis and complications of the cancer, peptic ulcer, respiratory diseases and nervous diseases.
	CO4	To analyse disease type based on the signs and symptoms. To frame an outline for rational treatment for the disease.

**Teaching and Examination Scheme**

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	SEE	CIA	SEE	CIA	
03	01	00	04	75	25	00	00	100

*Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P - Practical, C - Credit, SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)*

**Course Content**

Unit No.	Topics	Teaching Hours	Weightage	Mapping with Cos
1	<p><b>Basic principles of Cell injury and Adaptation:</b> 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</p> <p><b>Basic mechanism involved in the process of inflammation and repair:</b> 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	22.22%	CO1
2	<p><b>Cardiovascular System:</b> Hypertension, congestive heart failure, ischemic heart disease (angina, myocardial infarction, atherosclerosis and arteriosclerosis)</p> <p><b>Respiratory system:</b> Asthma, Chronic obstructive airways diseases.</p> <p><b>Renal system:</b> Acute and chronic renal failure</p>	10	22.22%	CO2 CO4
3	<p><b>Haematological Diseases:</b> Iron deficiency, megaloblastic anemia (Vit B12 and folic acid), sickle cell anemia, thalasemia, hereditary acquired anemia, hemophilia</p> <p><b>Endocrine system:</b> Diabetes, thyroid diseases, disorders of sex hormones</p> <p><b>Nervous system:</b> Epilepsy, Parkinson's disease, stroke, psychiatric disorders: depression, schizophrenia and Alzheimer's disease.</p> <p><b>Gastrointestinal system:</b> Peptic Ulcer</p>	10	22.22%	CO3 CO4

4	Inflammatory bowel diseases, jaundice, hepatitis (A,B,C,D,E,F) alcoholic liver disease. <b>Disease of bones and joints:</b> Rheumatoid arthritis, osteoporosis and gout <b>Principles of cancer:</b> classification, etiology and pathogenesis of cancer <b>Diseases of bones and joints:</b> Rheumatoid Arthritis, Osteoporosis, Gout <b>Principles of Cancer:</b> Classification, etiology and pathogenesis of Cancer	08	17.77%	CO2 CO3 CO4
5	<b>Infectious diseases:</b> Meningitis, Typhoid, Leprosy, Tuberculosis Urinary tract infections <b>Sexually transmitted diseases:</b> AIDS, Syphilis, Gonorrhoea	07	15.55%	CO2 CO4

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	25	50	0	25	0	0

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

#### Suggested Learning Websites

Sr. No.	Name of Website
1	<a href="https://pci.nic.in/pdf/Syllabus_B_Pharm.pdf">https://pci.nic.in/pdf/Syllabus_B_Pharm.pdf</a>
2	<a href="https://www.aicte-india.org/downloads/bpharma.pdf">https://www.aicte-india.org/downloads/bpharma.pdf</a>
3	<a href="https://www.ipc.gov.in/">https://www.ipc.gov.in/</a>
4	<a href="https://www.ayush.gov.in/">https://www.ayush.gov.in/</a>
5	<a href="https://ayudmla.gujarat.gov.in/home.php">https://ayudmla.gujarat.gov.in/home.php</a>
6	<a href="https://www.fda.gov/">https://www.fda.gov/</a>
7	<a href="https://www.pharmacopoeia.com/">https://www.pharmacopoeia.com/</a>
8	<a href="https://ipapharma.org/">https://ipapharma.org/</a>
9	<a href="https://gpat.nta.nic.in/">https://gpat.nta.nic.in/</a>
10	<a href="https://drnaitiktrivedi.com/">https://drnaitiktrivedi.com/</a>
11	<a href="https://gdc4gpat.com/course/gpat/">https://gdc4gpat.com/course/gpat/</a>
12	<a href="https://niscpr.res.in/">https://niscpr.res.in/</a>
13	<a href="https://delnet.in/">https://delnet.in/</a>
14	<a href="https://ihubgujarat.in/">https://ihubgujarat.in/</a>
15	<a href="https://www.ssipgujarat.in/">https://www.ssipgujarat.in/</a>

**Reference Books**

Sr. No.	Name of 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; 6 <sup>th</sup> edition; India; Jaypee Publications; 2010.
3	Laurence B, Bruce C, Bjorn K. ; Goodman Gilman's The Pharmacological Basis of Therapeutics; 12 <sup>th</sup> 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; 12 <sup>th</sup> 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; 21 <sup>st</sup> edition; London; ELBS/Churchill Livingstone; 2010.
7	Guyton A, John .E Hall; Textbook of Medical Physiology; 12 <sup>th</sup> edition; WB Saunders Company; 2010.
8	Joseph DiPiro, Robert L. Talbert, Gary Yee, Barbara Wells, L. Michael Posey; Pharmacotherapy: A Pathophysiological Approach; 9 <sup>th</sup> edition; London; McGraw-Hill Medical; 2014.
9	V. Kumar, R. S. Cotran and S. L. Robbins; Basic Pathology; 6 <sup>th</sup> edition; Philadelphia; WB Saunders Company; 1997.
10	Roger Walker, Clive Edwards; Clinical Pharmacy and Therapeutics; 3 <sup>rd</sup> edition; London; Churchill Livingstone publication; 2003.