

**Guru Nanak Institute of Pharmaceutical Science & Technology**  
**B. PHARM 2<sup>ND</sup> YEAR 4<sup>TH</sup> SEMESTER**

<b>CO label</b>	<b>Course Outcome (CO) statement</b>	<b>Bloom's Taxonomy Level (BTL)</b>
<b>CO405.1</b>	Define Pharmacognosy and its scope with different terms related to drugs from natural origin	2
<b>CO405.2</b>	Explain the classification of drugs from natural origin and indigenous system of medicines	4
<b>CO405.3</b>	List crude drugs as per their chemical nature for systematic study	2
<b>CO405.4</b>	Discuss the plant tissue culture, cultivation, collection, and evaluation of crude drugs	4
<b>CO404.1</b>	Explain the pharmacological actions of different categories of drugs	2
<b>CO404.2</b>	Explain the mechanism of drug action at organ system/sub cellular/macromolecular levels	2
<b>CO404.3</b>	Apply the basic pharmacological knowledge in the prevention and treatment of various diseases	3
<b>CO404.4</b>	Test the effect of drugs on animals by simulated experiments	6
<b>CO405.4</b>	Analyze correlation of pharmacology with other bio medical sciences	4
<b>CO403.1</b>	Students will be able to understand various physicochemical properties of drug molecules in the designing of dosage forms	2
<b>CO403.2</b>	Students will know the principles of chemical kinetics & how to use them for stability testing and determination of expiry date of formulations.	2,3
<b>CO403.3</b>	Students will be able to demonstrate the use of rheological properties in the formulation development and evaluation of dosage forms.	2,5
<b>CO403.4</b>	Students will be able to evaluate different physicochemical properties of coarse dispersions.	5
<b>CO403.5</b>	Students will be able to estimate the particle size distribution of a given sample and determine its inherent and derived properties	5,6
<b>CO. 413.1</b>	Explain the basic concept of medicinal chemistry related to drug action	2

<b>CO.413.2</b>	Illustrate the various phase I and phase II reactions of drug metabolism	4
<b>CO.413.3</b>	Classify the therapeutic agents, outline the synthetic route for the selective medicinal compounds of each category and acquire knowledge on the mechanism of action of agents acting on autonomous and central nervous system.	1, 2, 4
<b>CO.413.4</b>	Appraise about the relationship between the biological activity and structure of therapeutic agents.	6
<b>CO.414.1</b>	Illustrate Stereo-chemical features including conformation and stereo electronic effects of organic molecules.	4
<b>CO.414.2</b>	Comprehend the basic experimental principles of heterocyclic chemistry.	2
<b>CO.414.3</b>	Outline the structures and synthesis of simple five and six membered heterocyclic organic compounds.	4
<b>CO.414.4</b>	Describe detailed mechanisms for common naming reactions.	2

Course outcome	Program Outcome											
	O1	O2	O3	O4	O5	O6	O7	O8	O9	O10	O11	O12
CO405.1	3	3	3	3	2	1	1	2	1	1	2	3
CO405.2	3	3	3	3	2	1	1	2	1	1	2	3
CO405.3	3	2	2	1	2	2	2	2	3	3	3	3
CO405.4	3	3	2	1	3	2	2	2	3	3	3	3

CO404.1	3	1	1	2	1	2	1	1	1	1	1	1
CO404.2	3	1	2	1	1	2	1	1	1	1	1	1
CO404.3	3	2	3	1	1	2	3	1	1	1	1	1
CO404.4	3	3	3	2	2	2	2	1	1	1	1	1
CO405.4	3	3	2	2	1	1	3	1	1	1	1	1
CO403.1	3	3	1	2	3	2	1	2	3	2	2	3
CO403.2	3	3	2	2	3	1	2	2	1	2	2	2
CO403.3	3	3	1	2	3	2	2	1	3	3	3	3
CO403.4	3	3	1	2	3	2	1	2	3	2	2	3
CO403.5	3	3	2	2	3	3	1	2	3	1	2	2