

## PHL 351 PHARMACOLOGY -I (3 + 1)

**Prerequisite:** PHL 285, PHL 382, PHC 371

### **Course Description:**

This course deals with the introduction of basic principles of pharmacology and the pharmacological actions, therapeutic uses, mechanisms of actions, adverse effects, contraindications and drug interactions of: autonomic drugs, cardiovascular drugs and autacoids.

### **Course Contents:**

### **Hours**

A.	Pharmacological Principles:	6
	<ul style="list-style-type: none"><li>- Definition of Terms and Scope.</li><li>- Drug Receptors.</li> <li>- Drug-receptor Interactions.</li><li>- Dose-response Curves.</li><li>- Antagonists.</li><li>- Factors Modifying Drug Action.</li><li>- Absorption, Distribution &amp; Biotransformation and Elimination of Drugs.</li><li>- Drug Tolerance, Tachyphylaxis, Idiosyncrasy (Definitions).</li><li>- ED<sub>50</sub>, LD<sub>50</sub> Therapeutic Index.</li><li>- General Mechanisms of Drug Action.</li></ul>	
B.	Drugs Acting on the Autonomic Nervous System:	7
	1) Sympathetic Nervous System:	
	<ul style="list-style-type: none"><li>- Adrenergic transmission.</li><li>- Types &amp; Subtypes of Receptors.</li><li>- Pharmacological Actions, Uses and Side Effects of Direct and Indirect Adrenergic Agonists and Adrenergic Antagonists.</li></ul>	
	2) Parasympathetic Nervous System:	8
	<ul style="list-style-type: none"><li>- Cholinergic Transmission.</li><li>- Types and Subtypes of Receptors.</li><li>- Acetylcholine and other choline esters.</li><li>- Anticholinesterase &amp; Antimuscarinic Drugs.</li><li>- Ganglionic Stimulants and Blockers.</li><li>- Skeletal muscle relaxants:</li><li>- Central and Peripheral agents</li></ul>	
C.	Autacoids:	6

- Histamine and Antihistamines.
- Serotonin and Antiserotonin.
- Prostaglandins & Leukotrienes.
- Angiotensins, Kinins & Endorphins.

D. Drugs Acting on the Cardiovascular System: 10

- Cardiotonic Drugs
- Antihypertensive Drugs
- Antidysrhythmic Drugs

Diuretics: 3

- Osmotic Agents.
- Thiazides.
- Loop Diuretics.
- K-sparing Drugs.
- Carbonic Anhydrase Inhibitors.
- Aldosterone Antagonists

EXAMINATION: 2

Total Hours: 42  
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**PHL 351 PRACTICALS**  
**PHARMACOLOGY-I (3+1)**

<b><u>Experiment No.</u></b>	<b><u>Title</u></b>
Lab. 1.	Influence of smooth muscle stimulants on the isolated rabbit intestine. Influence of smooth muscle relaxants on the isolated rabbit intestine.
Lab. 2.	Influence of some blockers on effects induced by stimulants and relaxants on the isolated rabbit intestine.
Lab.3.	Influence of some stimulants and receptor blockers on the isolated guinea pig ileum.
Lab. 4	Influence of bronchoconstrictors and bronchodilators on the isolated guinea pig trachea.
Lab.5.	Effect of acetylcholine and neuromuscular blockers on the frog rectus abdominis muscle and effect of enzyme inducers on sleeping time of

hexobarbitone..

Lab. 6. Influence of various drugs on the arterial blood pressure and respiration of the rabbit.

Lab. 7. Influence of various drugs on the isolated rabbit heart (Langendorff) preparation.

Lab. 8 Antiarrhythmic drugs (ECG is employed).

. Examinations.

**Tutorials No.**

**Title**

Tut. 1. Introduction.

Tut. 2. Sympathetic Nervous System.

Tut. 3. Parasympathetic Nervous System.

Tut. 4. Cardiovascular System.

Each tutorial is followed by a Quiz.

**Textbook**

<b>Course</b>		<b>Name of the textbook</b>	<b>author</b>	<b>Publisher</b>
<b>PHL351</b>	<b>Pharmacology-1</b>	<b>Basic &amp; Clinical Pharmacology</b> <b>-Drug Information Handbook</b>	<b>Katzung B. Charles Lora, Naomi &amp; Leonard</b>	<b>-Churchil Livingstone</b> <b>-Lexi-Comp. Inc. 1100 Terex Road, Hudson, Ohio 44236</b>