**Course Title**: PHARMACOLOGY- II  

**Course Code**: PH505  

**Course Credit**  
- Lecture : 3  
- Practical : 3  
- Total : 6  

**Course Objectives**  
Pharmacology II will give detailed knowledge about the pharmacokinetics, pharmacodynamics, receptor mechanisms, drug interactions, contraindications and adverse drug reactions of various drugs used for CNS disorders like parkinsonism, epilepsy, pain, migraine, psychoses, insomnia, anesthesia, CNS stimulation, sedation, etc. It will also provide thorough information about pharmacology of drugs used in gout and rheumatoid arthritis, drugs used for gastrointestinal and respiratory and endocrinal disorders and of immunomodulators.  

**Detailed Syllabus**  

<table>
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<tr>
<th>Sr. No.</th>
<th>Name of Chapter &amp; Details</th>
<th>Hours Allocated</th>
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<tr>
<td><strong>Section-I</strong></td>
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<tr>
<td>1</td>
<td><strong>Drugs acting on Central Nervous system:</strong></td>
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<td>a. Neuronal transmitters in CNS</td>
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<td>b. General Anesthetics</td>
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<td>c. Ethyl and Methyl Alcohols</td>
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<td>2</td>
<td><strong>Non-steroidal anti-inflammatory drugs and drugs used in management of gout and rheumatoid arthritis</strong></td>
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<td><strong>Section-II</strong></td>
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<tr>
<td>3</td>
<td><strong>Pharmacology of Endocrine system</strong></td>
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<td>a. Hypothalamic &amp; pituitary hormones</td>
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<td>b. Thyroid and antithyroid drugs, parathormone, calcitonin and vitamin D and other agents that affect bone mineral homeostasis</td>
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<td>c. Glucagon, insulin, Antidiabetic drugs and oral hypoglycaemic drugs</td>
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<td>d. Corticosteroids</td>
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<td>e. Gonadal Hormones and inhibitors</td>
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<td>f. Oxytocics and Tocolytics</td>
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<td>4</td>
<td><strong>Pharmacology of drugs acting on Respiratory system</strong></td>
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<td>a. Drugs used in bronchial asthma</td>
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<td>b. Drugs used in cough</td>
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d. Sedatives and Hypnotics  
e. Anxiolytic Agents and antidepressants  
f. Centrally acting Muscle Relaxants  
g. Antipsychotics  
h. Antimaniacs  
i. Antiepileptic Drugs  
j. Antiparkinsonian Drugs  
k. Opioids Analgesics and Antagonists  
l. CNS Stimulants, Respiratory stimulants and Psychotomimetic Agents  
m. Drug Dependence and Drug abuse
Drug Acting on the Gastrointestinal Tract
   a. Anti-ulcer drugs (Antacids, Anti-secretory agents etc.) and Gastro-Esophageal Reflux Disease (GERD)
   b. Drugs used as Emetics and Anti-emetics

Immunomodulators

Pharmacology-II Practical

Experiments:
1. Study of Analgesic and Anti-Inflammatory Activity of drugs
2. Study of the Effects of CNS Stimulant (Coffee/Tea) on Human Volunteers.
3. Study of effects of CNS Stimulants and Depressants on spontaneous motor activity in mice using Actophotometer
5. To study the effect of drugs on behavioral changes in rat/mice (stereotypic behavior, catatonia, anxiety by plus maze apparatus)
6. To study the effect of anticonvulsant drugs in mice
7. To study the effect of drugs on histamine induced bronchospasm
8. To study the effect of antiulcer drugs using rats
9. To find out the nature of Unknown Drugs (Acetylcholine, Histamine, Bacl2, Physostigmine, Atropine, Mepyramine and Papaverine) using Rat/Guinea Pig Ileum Preparation.

Demonstration experiments
1. To demonstrate the effect of anti-motility drugs using mice/rat
2. To demonstrate bioassay of oxytocin using rat uterus
3. To demonstrate effect of L-thyronine on respiration rate
4. To demonstrate the effect of hypoglycemic agents on blood sugar level (metformin,
glibenclamide/Insulin) using experimental animals.

### Instructional Method and Pedagogy:

- Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
- Assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval.
- Surprise tests/Quizzes/Seminar/Tutorials will be conducted.
- The course includes language practices such as Group Discussion, Interviews etc to develop the communication skills of the students.

### Students Learning Outcomes:

1. Know the details of pharmacology of drugs used in various CNS, respiratory, gastrointestinal, endocrinial disorders and of immunomodulators.
2. Know various alternatives available for a single disease which can be because of multiple pathophysiliogies.
3. To study the detailed pharmacokinetics and pharmacodynamics including drug interactions, precautions, contraindications and adverse drug reactions of all the category of drugs.

### Text Books:

1. Essentials of medical pharmacology --K. D. Tripathi
2. Pharmacology-Rang and Dale
5. Handbook of Experimental Pharmacology- Goyal R.K.

**Reference Books:**

1. Pharmacological basis of Therapeutics-Goodman and Gilman
3. Principles of Pharmacology – Paul L. Munson
4. Modern Pharmacology with clinical applications- Craig, Charles R.
5. Principles of pharmacology.--H. L. Sharma
6. Pharmacology and Toxicology- Kale S.R.

**Additional Resources**

- Soft copies of pharmacology and pathophysiology books are available on websites.
- Latest informations are available from scientific journals available in library and on websites.