



Shree H. N. Shukla Institute of Pharmaceutical Education & Research

(Affiliated to Gujarat Technological University, Approved by PCI)

Shree H. N. Shukla College Campus, Nr. Lalpari Lake, B/H. Marketing Yard,
Amargadh – Bhichari, Raikot. Mo. 9099063150, 9727753360

Bachelor of Pharmacy

Subject Code: BP602TP

SEMESTER: VI

Subject Name: Pharmacology III

Scope: This subject is intended to impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on respiratory and gastrointestinal system, infectious diseases, immuno-pharmacology and in addition, emphasis on the principles of toxicology and chronopharmacology.

Objectives: Upon completion of this course the student should be able to:

1. understand the mechanism of drug action and its relevance in the treatment of different infectious diseases
2. comprehend the principles of toxicology and treatment of various poisonings and
3. Appreciate correlation of pharmacology with related medical sciences.

Teaching scheme and examination scheme:

| Teaching Scheme | | | | Evaluation Scheme | | | |
|-----------------|----------|-----------|-------|-------------------|----------|-----------|----------|
| Theory | Tutorial | Practical | Total | Theory | | Practical | |
| | | | | External | Internal | External | Internal |
| 3 | 1 | 4 | 6 | 80 | 20 | 80 | 20 |

| Sr No | Topics | % weightage |
|-------|--|-------------|
| 1. | Pharmacology of drugs acting on Respiratory system a. Anti -asthmatic drugs b. Drugs used in the management of COPD c. Expectorants and antitussives d. Nasal decongestants e. Respiratory stimulants | 10 |
| 2. | Pharmacology of drugs acting on the Gastrointestinal Tract a. Antiulcer agents. b. Drugs for constipation and diarrhoea. c. Appetite stimulants and suppressants. d. Digestants and carminatives. e. Emetics and anti-emetics. | 10 |
| 3. | Chemotherapy a. General principles of chemotherapy. b. Sulfonamides and cotrimoxazole. c. Antibiotics- Penicillins, cephalosporins, chloramphenicol, macrolides, quinolones and fluoroquinolins, tetracycline and aminoglycosides | 10 |
| 4. | Chemotherapy a. Antitubercular agents b. Antileprotic agents c. Antifungal agents d. Antiviral drugs e. Anthelmintics | 10 |



Shree H. N. Shukla Institute of Pharmaceutical Education & Research

(Affiliated to Gujarat Technological University, Approved by PCI)

Shree H. N. Shukla College Campus, Nr. Lalpari Lake, B/H. Marketing Yard,
Amargadh – Bhichari, Raikot. Mo. 9099063150. 9727753360

| | | |
|----|---|---|
| | f. Antimalarial drugs g. Antiamoebic agents | |
| 5. | Chemotherapy l. Urinary tract infections and sexually transmitted diseases. m. Chemotherapy of malignancy Immunopharmacology a. Immunostimulants b. Immunosuppressant Protein drugs, monoclonal antibodies, target drugs to antigen, biosimilars | 8 |
| 6 | Principles of toxicology a. Definition and basic knowledge of acute, subacute and chronic toxicity. b. Definition and basic knowledge of genotoxicity, carcinogenicity, teratogenicity and mutagenicity c. General principles of treatment of poisoning d. Clinical symptoms and management of barbiturates, morphine, organophosphorus compound and lead, mercury and arsenic poisoning | 7 |
| 7 | Chronopharmacology a. Definition of rhythm and cycles. b. Biological clock and their significance leading to chronotherapy. | |

Practical

1. Dose calculation in pharmacological experiments
 2. Antiallergic activity by mast cell stabilization assay
 3. Study of anti-ulcer activity of a drug using pylorus ligand (SHAY) rat model and NSAIDS induced ulcer model.
 4. Study of effect of drugs on gastrointestinal motility
 5. Effect of agonist and antagonists on guinea pig ileum
 6. Estimation of serum biochemical parameters by using semi- autoanalyser
 7. Effect of saline purgative on frog intestine
 8. Insulin hypoglycemic effect in rabbit
 9. Test for pyrogens (rabbit method)
 10. Determination of acute oral toxicity (LD50) of a drug from a given data
 11. Determination of acute skin irritation / corrosion of a test substance
 12. Determination of acute eye irritation / corrosion of a test substance
 13. Calculation of pharmacokinetic parameters from a given data
 14. Biostatistics methods in experimental pharmacology(student's t test, ANOVA)
 15. Biostatistics methods in experimental pharmacology (Chi square test, Wilcoxon Signed Rank test)
- *Experiments are demonstrated by simulated experiments/videos*

Recommended Books (Latest Editions)

1. Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology, Churchill Livingstone Elsevier
2. Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw- Hill
3. Goodman and Gilman's, The Pharmacological Basis of Therapeutics
4. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs. The Point Lippincott Williams &Wilkins
5. Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's Illustrated Reviews- Pharmacology
6. K.D.Tripathi. Essentials of Medical Pharmacology, , JAYPEE Brothers Medical Publishers (P) Ltd,



Shree H. N. Shukla Institute of Pharmaceutical Education & Research

(Affiliated to Gujarat Technological University, Approved by PCI)

Shree H. N. Shukla College Campus, Nr. Lalpari Lake, B/H. Marketing Yard,
Amargadh – Bhichari, Raikot. Mo. 9099063150. 9727753360

New Delhi.

7. Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher
8. Modern Pharmacology with clinical Applications, by Charles R.Craig & Robert, Ghosh MN. Fundamentals of Experimental Pharmacology. Hilton & Company, Kolkata,
9. Kulkarni SK. Handbook of experimental pharmacology. VallabhPrakashan,
10. N.Udupa and P.D. Gupta, Concepts in Chronopharmacology.

LEARNING OUTCOMES:

| UNIT | LEARNING OUTCOME |
|------|---|
| 1 | Fundamental knowledge on various pharmacological aspects of selected drugs acting in different systems of body. |
| 2 | Understanding the mechanism of drug action and its relevance in the treatment of different diseases and infections. |
| 3 | Knowledge of immunopharmacology- immunostimulants and immunosuppressants. |
| 4 | Fundamental knowledge about principles of toxicology and treatment of poisoning. |
| 5 | Understanding the concept and ability to perform bioassays. |

BOOK LIST:

| Sr. no | Book name | Price (Rs.) |
|--------|--|-------------|
| 1 | Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology, Churchill Livingstone Elsevier. | 3,300/- |
| 2 | Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw-Hill. | 1,400/- |
| 3 | Goodman and Gilman's, The Pharmacological Basis of Therapeutics. | 13,130/- |
| 4 | Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's Illustrated Reviews- Pharmacology. | 1,323/- |
| 5 | K.D.Tripathi. Essentials of Medical Pharmacology, , JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi. | 2,995/- |
| 6 | Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher . | 810/- |
| 7 | Modern Pharmacology with clinical Applications, by Charles R.Craig & Robert, Ghosh MN. Fundamentals of Experimental Pharmacology. Hilton & Company, Kolkata. | 1,478/- |
| 8 | Kulkarni SK. Handbook of experimental pharmacology. VallabhPrakashan, | 210/- |
| 9 | N.Udupa and P.D. Gupta, Concepts in Chronopharmacology. | 3,218/- |