INSTITUTE	**FACULTY OF PHARMACY**
PROGRAM	**BACHELOR OF PHARMACY**
SEMESTER	**6**
COURSE TITLE	**PHARMACOLOGY-III**
COURSE CODE	**13PH0602**
COURSE CREDITS	**6**

Objective:

1 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 the respiratory and gastrointestinal system, infectious diseases, immuno-pharmacology and also, emphasis on the principles of toxicology and chrono-pharmacology

2 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 the respiratory and gastrointestinal system, infectious diseases, immuno-pharmacology and also, emphasis on the principles of toxicology and chrono-pharmacology.

Course Outcomes: After completion of this course, student will be able to:

1 Understand the mechanism of drug action and its relevance in the treatment of respiratory, digestive and infectious diseases

2 Comprehend the principles of toxicology and treatment of various poisonings

3 Appreciate the correlation of pharmacology with related medical sciences

Pre-requisite of course: 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 the respiratory and gastrointestinal system, infectious diseases, immuno-pharmacology and also, emphasis on the principles of toxicology and chrono-pharmacology. Objective: 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. 3. Appreciate the correlation of pharmacology with related medical sciences.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	1	4	75	15	10	35	15

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Contents : Unit	Topics	Contact Hours
1	**Unit-1: Pharmacology of drugs acting on the respiratory system and Gastrointestinal Tract.** Anti-asthmatic drugs. b. Drugs used in the management of COPD. c. Expectorants and antitussives. d. Nasal decongestants. e. Respiratory stimulants., 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.	
2	**Unit-2: Chemotherapy** Chemotherapy: a. General principles of chemotherapy. b. Sulfonamides and cotrimoxazole. c. Antibiotics: Penicillins, cephalosporins, chloramphenicol, macrolides, quinolones, and fluoroquinolones, tetracycline, and aminoglycosides.	
3	**Unit-3: Chemotherapy** Chemotherapy: a. Antitubercular agents. b. Antileprotic agents.c. Antifungal agents. d. Antiviral drugs. e. Anthelmintics. f. Antimalarial drugs. g. Antiamoebic agents.	
4	**Unit-4: Chemotherapy** Chemotherapy: Urinary tract infections and sexually transmitted diseases, Chemotherapy of malignancy. a. Immunopharmacology: Immunostimulants, Immunosuppressant. b. Protein drugs, monoclonal antibodies, target drugs to antigen, biosimilars.	
5	**Unit-5: Principles of toxicology** 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, organo-phosphosphorus compound and lead, mercury, and arsenic poisoning. e. Chronopharmacology: Definition of rhythm and cycles. Biological clock and their significance leading to chronotherapy.	
Total Hours		

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Tutorials** Workshop no.1, Workshop no.2, Workshop no.3, Workshop no.4, Workshop no.5, Workshop no.6, Workshop no.7, Workshop no.8, Workshop no.9, Workshop no.10, Workshop no.11, Workshop no.12, Workshop no.13, Workshop no.14, Workshop no.15	

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
2	**Practicals** Experiment no.1, Experiment no.2, Experiment no.3, Experiment no.4, Experiment no.5, Experiment no.6, Experiment no.7, Experiment no.8, Experiment no.9, Experiment no.10, Experiment no.11, Experiment no.12, Experiment no.13, Experiment no.14, Experiment no.15	
Total Hours		

Textbook :

1 Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology, Churchill Livingstone, Elsevier., 2007

References:

1 Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc GrawHill.

2 Goodman and Gilman's, The Pharmacological Basis of Therapeutics.

3 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.

4 Mycek M. J, Gelnet S. B, and Perper M.M. Lippincott's Illustrated Reviews-Pharmacology.

5 K. D. Tripathi. Essentials of Medical Pharmacology, JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi.

6 Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher

7 Modern Pharmacology with Clinical Applications, by Charles R. Craig & Robert, Ghosh MN. Fundamentals of Experimental Pharmacology. Hilton & Company, Kolkata

8 Kulkarni SK. Handbook of experimental pharmacology. Vallabh Prakashan.

9 N. Udupa and P.D. Gupta, Concepts in Chronopharmacology.

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
20.00	35.00	20.00	15.00	10.00	0.00

Instructional Method:

1 The course delivery method will depend upon the requirement of content and the need of students. The teacher in addition to the conventional teaching method by the blackboard may also use any tools such as demonstration, role play, quiz, brainstorming, MOOCs etc.

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Instructional Method:

2 The internal evaluation will be done based on continuous evaluation of students in the laboratory and classroom.

3 Students will use supplementary resources such as online videos, NPTEL videos, MOOCs/ e-courses, virtual laboratories.

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