INSTITUTE	**FACULTY OF PHARMACY**
PROGRAM	**BACHELOR OF PHARMACY**
SEMESTER	**5**
COURSE TITLE	**PHARMACOLOGY-II**
COURSE CODE	**13PH0502**
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 different systems of the body and in addition, emphasis on the basic concepts of bioassay.

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 different systems of body and in addition,emphasis on the basic concepts of bioassay.

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

1 Upon completion of the course, the student shall be able to understand the mechanism of drug action and its relevance in the treatment of different diseases.

2 Appreciate correlation of pharmacology with related medical sciences

Pre-requisite of course: 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 different systems of body and in addition,emphasis on the basic concepts of bioassay.

Teaching and Examination Scheme

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

Contents : Unit	Topics	Contact Hours
1	**Unit-1: Pharmacology of drugs acting on cardio vascular system** Pharmacology of drugs acting on cardio vascular system: Introduction to hemodynamic and electrophysiology of heart. Drugs used in congestive heart failure. Anti-hypertensive drugs. Anti-anginal drugs. Anti-arrhythmic drugs. Anti-hyperlipidemic drugs.	10

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Contents : Unit	Topics	Contact Hours
2	**Unit-2: Pharmacology of drugs acting on cardio vascular system** Pharmacology of drugs acting on cardio vascular system: Drug used in the therapy of shock. Hematinics, coagulants and anticoagulants. Fibrinolytics and anti-platelet drugs. Plasma volume expanders. Pharmacology of drugs acting on urinary system: Diuretics, Anti-diuretics	10
3	**Unit-3: Autocoids and related drugs** Autocoids and related drugs: Introduction to autacoids and classification. Histamine, 5-HT and their antagonists. Prostaglandins, Thromboxanes and Leukotrienes. Angiotensin, Bradykinin and Substance P. Non-steroidal anti-inflammatory agents. Anti-gout drugs. Antirheumatic drugs.	10
4	**Unit-4: Pharmacology of drugs acting on endocrine system** Pharmacology of drugs acting on endocrine system: Basic concepts in endocrine pharmacology. Anterior Pituitary hormones- analogues and their inhibitors. Thyroid hormones- analogues and their inhibitors. Hormones regulating plasma calcium levelParathormone, Calcitonin and Vitamin-D. Insulin, Oral Hypoglycemic agents and glucagon. ACTH and corticosteroids.	8
5	**Unit-5: Pharmacology of drugs acting on endocrine system** Pharmacology of drugs acting on endocrine system: Androgens and Anabolic steroids. Estrogens, progesterone and oral contraceptives. Drugs acting on the uterus. Bioassay: Principles and applications of bioassay. Types of bioassay. Bioassay of insulin, oxytocin, vasopressin, ACTH,d-tubocurarine,digitalis, histamine and 5-HT	7
Total Hours		**45**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Tutorial** Workshop 1, Workshop 2, Workshop 3, Workshop 4, Workshop 5, Workshop 6, Workshop 7, Workshop 8, Workshop 9, Workshop 10, Workshop 11, Workshop 12, Workshop 13, Workshop 14, Workshop 15	15
2	**Practical** 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	60
Total Hours		**75**

Textbook :

1 Rang and Dale's Pharmacology,, Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's, Churchil Livingstone Elsevier., 2015

References:

1 Katzung Basic And Clinical Pharmacology , Katzung Basic And Clinical Pharmacology , Katzung B. G., Masters S. B., Trevor A. J., , Tata McGrawHill., 2010

2 GOODMAN AND GILMAN'S THE PHARMACOLOGICAL BASIS OF THERAPEUTICS , GOODMAN AND GILMAN'S THE PHARMACOLOGICAL BASIS OF THERAPEUTICS , Goodman and Gilman's, , McGraw Hill / Medical, 2017

3 Applied Therapeutics, , Applied Therapeutics, , Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Lippincott Williams & Wilkins., 2008

4 Pharmacology, Pharmacology, Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's, Lippincott Williams & Wilkins, 1996

5 Essentials of Medical Pharmacology., Essentials of Medical Pharmacology., K.D.Tripathi., JAYPEE Brothers Medical Publishers (P) Ltd,, 2016

6 The Principles of Pharmacology , The Principles of Pharmacology , Sharma H. L., Sharma K. K., Paras medical publisher., 2012

7 Modern Pharmacology with Clinical Applications , Modern Pharmacology with Clinical Applications , Charles R.Craig& Robert., Lippincott Williams and Wilkins, 2003

8 Fundamentals of Experimental Pharmacology , Fundamentals of Experimental Pharmacology , Ghosh MN, Hilton & Company, 2008

9 HANDBOOK OF EXPERIMENTAL PHARMACOLOGY, HANDBOOK OF EXPERIMENTAL PHARMACOLOGY, Kulkarni SK., Vallabh Prakashan., 2014

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
30.00	50.00	5.00	10.00	5.00	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.

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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