# ADVANCED PHARMACOLOGY - II
## (MPL 201T)

### Scope

The subject is designed to strengthen the basic knowledge in the field of pharmacology and to impart recent advances in the drugs used for the treatment of various diseases. In addition, the subject helps the student to understand the concepts of drug action and mechanism involved

### Objectives

Upon completion of the course the student shall be able to:

- Explain the mechanism of drug actions at cellular and molecular level
- Discuss the Pathophysiology and pharmacotherapy of certain diseases
- Understand the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases

| | THEORY | 60 Hrs |
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| 1. | Endocrine Pharmacology<br>Molecular and cellular mechanism of action of hormones such as growth hormone,<br>prolactin, thyroid, insulin and sex hormones<br>Anti-thyroid drugs, Oral hypoglycemic agents, Oral contraceptives, Corticosteroids.<br>Drugs affecting calcium regulation | 12 Hrs |
| 2 | Chemotherapy<br>Cellular and molecular mechanism of actions and resistance of antimicrobial agents<br>such as ß-lactams, aminoglycosides, quinolones, Macrolide antibiotics. Antifungal, antiviral, and anti-TB drugs. | 12 Hrs |
| 3 | Chemotherapy<br>Drugs used in Protozoal Infections<br>Drugs used in the treatment of Helminthiasis<br>Chemotherapy of cancer<br>Immunopharmacology<br>Cellular and biochemical mediators of inflammation and immune response. Allergic or<br>hypersensitivity reactions. Pharmacotherapy of asthma and COPD.<br>Immunosuppressants and Immunostimulants | 12 Hrs |

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| 4 | GIT Pharmacology<br>Antiulcer drugs, Prokinetics, antiemetics, anti-diarrheals and drugs for constipation<br>and irritable bowel syndrome.<br>Chronopharmacology<br>Biological and circadian rhythms, applications of chronotherapy in various diseases like<br>cardiovascular disease, diabetes, asthma and peptic ulcer | 12 Hrs |
| 5 | Free radicals Pharmacology<br>Generation of free radicals, role of free radicals in etiopathology of various diseases<br>such as diabetes, neurodegenerative diseases and cancer.<br>Protective activity of certain important antioxidant<br>Recent Advances in Treatment:<br>Alzheimer's disease, Parkinson's disease, Cancer, Diabetes mellitus | 12 Hrs |

REFERENCES


1. The Pharmacological basis of therapeutics- Goodman and Gill man's
2. Principles of Pharmacology. The Pathophysiologic basis of drug therapy by David E Golan et al.
3. Basic and Clinical Pharmacology by B.G -Katzung
4. Pharmacology by H.P. Rang and M.M. Dale.
5. Hand book of Clinical Pharmacokinetics by Gibaldi and Prescott.
6. Text book of Therapeutics, drug and disease management by E T. Herfindal and Gourley.
7. Applied biopharmaceutics and Pharmacokinetics by Leon Shargel and Andrew B.C.Yu.
8. Handbook of Essential Pharmacokinetics, Pharmacodynamics and Drug Metabolism for Industrial Scientists
9. Robbins & Cortan Pathologic Basis of Disease, 9th Ed. (Robbins Pathology)
10. A Complete Textbook of Medical Pharmacology by Dr. S.K Srivastava published by APC Avichal Publishing Company.
11. KD.Tripathi. Essentials of Medical Pharmacology
12. Principles of Pharmacology. The Pathophysiologic basis of drug Therapy by David E Golan, Armen H, Tashjian Jr, Ehrin J,Armstrong, April W, Armstrong, Wolters, Kluwer-Lippincott Williams & Wilkins Publishers