

Educational Objectives:

1. This course demonstrates a basic knowledge of central concepts in neuropharmacology. The course will discuss drug-induced changes in functioning of the nervous system and the drug induced cellular and molecular actions on synaptic transmission. Mechanism of drug action and specific diseases of the nervous system and their treatment will also be covered in this course.

Course Outcomes:

2. On completion of this course students will have understanding of the anatomy of the nervous system and its inter-relationships during drug response. Students will have in depth knowledge how the drugs act on the nervous system and how these drugs affect behavior.

3. **Course Contents:**

- a. Introduction to neuropharmacology
- b. Chemical signaling in the nervous system
- c. Transmitters and modulators:
 - (1) Nor-adrenaline
 - (2) Dopamine
 - (3) Acetylcholine and serotonin
 - (4) Other CNS mediators
- d. Disorders of the nervous systems and their treatment
- e. Drug Classification
 - (1) Analgesic Drugs
 - (2) Local anesthetics and other drugs affecting sodium channels
 - (3) Anxiolytic and hypnotic drugs
 - (4) Antiepileptic drugs
 - (5) Antipsychotic drugs
 - (6) Antidepressant drugs
 - (7) CNS Stimulants and psychotomimetic Drugs
- f. Harmful Effects of Drugs
- g. Drug Addiction, Dependence and Abuse

Recommended Books:

1. **Rang & Dale's Pharmacology** by Rang, H. P., Elsevier. Published: Edinburgh : Elsevier Saunders, 2012
2. **Molecular Neuropharmacology: A Foundation for Nervous System Disorders**, by Eric Nestler, Steven Hyman, Robert Malenka. 2nd Edition
3. **The Biochemical Basis of Neuropharmacology** by Jack R. Cooper, Floyd E. Bloom, Robert H. Roth, 8th Editon.
4. **Psychopharmacology: Drugs, the Brain and Behavior** by Meyer, Jerrold S., and Linda F. Quenzer. 1st Edition.