

Subject Code: MPL105P	Subject Title: Pharmacology Practical-I
Pre-requisite Subject	-NONE-

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)		
Lecture	Tutorial	Practical	Credit	Theory (T)		Total (Marks)
				University Assessment	Continuous Assessment	
-	-	12	6	100	50	150

PRACTICALS:

1. Analysis of pharmacopoeial compounds and their formulations by UV Visible spectrophotometer.
2. Simultaneous estimation of multi component containing formulations by UV spectrophotometry.
3. Experiments based on HPLC.
4. Experiments based on Gas Chromatography.
5. Estimation of riboflavin/quinine sulphate by fluorimetry.
6. Estimation of sodium/potassium by flame photometry.

Handling of laboratory animals.

1. Various routes of drug administration.
2. Techniques of blood sampling, anesthesia and euthanasia of experimental animals.
3. Functional observation battery tests (modified Irwin test)
4. Evaluation of CNS stimulant, depressant, anxiogenics and anxiolytic, anticonvulsant activity.
5. Evaluation of analgesic, anti-inflammatory, local anesthetic, mydriatic and miotic activity.
6. Evaluation of diuretic activity.
7. Evaluation of antiulcer activity by pylorus ligation method.
8. Oral glucose tolerance test.
9. Isolation and identification of DNA from various sources (Bacteria, Cauliflower, onion, Goat liver).
10. Isolation of RNA from yeast.
11. Estimation of proteins by Bradford/Lowry's in biological samples.
12. Estimation of RNA/DNA by UV Spectroscopy.
13. Gene amplification by PCR.
14. Protein quantification Western Blotting.
15. Enzyme based in-vitro assays (MPO, AChEs, α amylase, α glucosidase).
16. Cell viability assays (MTT/Trypan blue/SRB).
17. DNA fragmentation assay by agarose gel electrophoresis.
18. DNA damage study by Comet assay.
19. Apoptosis determination by fluorescent imaging studies.
20. Pharmacokinetic studies and data analysis of drugs given by different routes of administration using softwares.
21. Enzyme inhibition and induction activity.
22. Extraction of drug from various biological samples and estimation of drugs in biological fluids using different analytical techniques (UV).
23. Extraction of drug from various biological samples and estimation of drugs in biological fluids using different analytical techniques (HPLC)

References:

Text books:

1. Fundamentals of experimental Pharmacology by M.N.Ghosh.
2. Handbook of Experimental Pharmacology by S.K. Kulkarni.

Reference Books:

1. CPCSEA, OECD, ICH, USFDA, Schedule Y, EPA guidelines,
2. Drug discovery and Evaluation by Vogel H.G.
3. Spectrometric Identification of Organic compounds - Robert M Silverstein,
4. Principles of Instrumental Analysis - Douglas A Skoog, F. James Holler, Timothy A. Nieman,
5. Vogel's Text book of quantitative chemical analysis - Jeffery, Basset, Mendham, Denney,
6. Basic Cell Culture protocols by Cheril D. Helgason and Cindy L.Mille
7. Basic Cell Culture (Practical Approach) by J. M. Davis (Editor)
8. Animal Cell Culture: A Practical Approach by John R. Masters (Editor)
9. Practical Manual of Experimental and Clinical Pharmacology by Bikash Medhi(Author), Ajay Prakash (Author) Jaypee brothers' medical publishers Pvt. Ltd