COURSE OUTCOMES	
M PHARM PHARMACOLOGY	
Course:	**Code: MPL101T** **Modern Pharmaceutical Analytical Technique**
CO1	Understand the pharmacology of different category of drugs.
CO2	Skills in selecting suitable techniques for the analysis of drugs and pharmaceuticals
CO3	To expand the theoretical knowledge on various instrumental techniques available for analysis of organic substances
CO4	To apply the knowledge learnt in developing new procedures of their own design
Course:	**Code: MPL101P** **Modern Pharmaceutical Analytical Technique**
CO1	Understand the principles, procedures and applications of different analytical techniques
CO2	Determine the structure of various categories of drugs by interpreting the results and data obtained from a variety of analytical techniques such as UV, visible and IR spectroscopic techniques
CO3	Separate the components of chemical mixture by different chromatographic techniques like paper, TLC, HPLC and electrophoresis
CO4	Perform skillfully in all their laboratory performances as per prescribed analytical guidelines
Course:	**Code: MPL102T** **Advanced Pharmacology I**
CO1	Explain the pharmacology of drugs and their therapeutic knowledge
CO2	Understand the mechanism of drugs at cellular and molecular level
CO3	Understand the adverse effects, contraindications and clinical uses of the drugs used in the treatment of diseases
CO4	Discuss the pathophysiology and pharmacotherapy (both existing and recent advances) and pharmacokinetics of various drugs
Course:	**Code: MPL103T** **Pharmacological and Toxicological Screening Methods I**
CO1	Appraise the regulations and ethical requirement for the usage of experimental animals.
CO2	Describe the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals
CO3	Describe the various newer screening methods involved in the drug discovery process
CO4	Appreciate and correlate the preclinical data to humans
Course:	**Code: MPL104T** **Cellular and Molecular Pharmacology**
CO1	Explain the receptor signal transduction processes.
CO2	Explain about molecular pathway affected by drugs.
CO3	Appreciate the applicability of molecular pharmacology and biomarkers in drug discovery process.
CO4	Demonstrate molecular biology techniques as applicable for pharmacology

Course:	Code: MPL105P Pharmacology I
CO1	Design and analyze the given samples using spectroscopy, chromatography, fluorimetry, HPLC and flame photometry
CO2	Perform experiment with rodents for CNS, diuretics, analgesic related activities
CO3	Administer the drugs through various routes, learnt blood sampling, anesthetic, and euthanasia techniques
CO4	Handle molecular techniques to understand molecular biology, assess genetical alterations, RNA and DNA
Course:	Code: MPL201T Advanced Pharmacology II
CO1	Explain the mechanism of drug action at cellular and molecular level
CO2	Discuss the pathophysiology and pharmacotherapy of certain diseases
CO3	Understand the adverse effects, contraindications, clinical uses of the drugs used in some diseases
CO4	To know the recent advances in the treatment of certain diseases students will gain the knowledge in the field of pharmacology of drugs and their therapeutic application
Course:	Code: MPL202T Pharmacological and Toxicological Screening Methods II
CO1	Explain the various types of toxicity studies
CO2	Appreciate the importance of ethical and regulatory requirements for toxicity studies.
CO3	Demonstrate the practical skills required to conduct the preclinical toxicity studies.
CO4	Discuss the ethical considerations and regulatory requirements governing pharmacological and toxicological screening
Course:	Code: MPL203T Principles of Drug Discovery
CO1	Explain the various stages and targets of drug discovery
CO2	Appreciate the importance of genomics, proteomics and bioinformatics in drug discovery
CO3	Explain various lead seeking method and lead optimization
CO4	Appreciate the importance of the role of computer aided drug design in drug discovery
Course:	Code: MPL204T Clinical Research and Pharmacovigilance
CO1	Explain the regulatory requirement for conducting clinical trial
CO2	Demonstrate the type of clinical trial design
CO3	Explain the responsibilities of key players in clinical trials
CO4	Explain the principles of pharmacovigilance and execute safety monitoring, reporting and close-out activities

Course:	Code: MPL205P Pharmacology II
CO1	Perform in vitro Pharmacological experiments using various isolated tissue preparations, and were able to estimate various biological samples quantitatively
CO2	Understand the OECD guidelines and perform acute, dermal toxicity studies and were able to interpret the pharmacokinetic profile of a given drug.
CO3	Understand cardiovascular responses, drug efficacy by various experimental techniques, will be able to design clinical trials and monitor ADR.
CO4	Understand the drug discovery process and will be able to develop a new drug through in silico techniques
Course:	Code: MPL205P Pharmacology III
CO1	Learn methods for assessing the toxicity and safety profiles of drugs through acute and chronic toxicity studies, cytotoxicity assays, and evaluation of adverse drug reactions.
CO2	Perform screening assays to evaluate the pharmacological activities of drugs, including studies on anti-inflammatory, analgesic, anti-diabetic, anti-hypertensive, and anti-microbial properties
CO3	Conduct experiments to assess the bioavailability and bioequivalence of different drug formulations using in vitro and in vivo models
CO4	Explore the role of genetic variations in drug response and learn how to interpret pharmacogenomics data to optimize drug therapy for individual patients
Course:	Project
CO1	Apply concepts and methodology of pre-clinical pharmacology for executing the project (Thesis) with discussion and presentation skills
CO2	Evaluate the planning of research and its budget and to communicate with the preclinical pharmacologist in written and oral forms
CO3	Understanding and executing the analytical techniques of assessing drugs potency and its evaluation parameters with bio statistical knowledge
CO4	Develop knowledge about various software's used in research work to precise the therapeutic activity of the concerned