

POSTGRADUATE PHARMACY PROGRAM

CRITERION	Course Outcomes (COs)
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CRITERION

- . Course Outcomes (COs) and Program Outcomes (POs)
- . Establish the correlation between the courses and the Program Outcomes (NBA defined Program Outcomes as mentioned in Annexure I)
- . Course Outcomes (should include course outcomes of one course from each semester of study, however, should be prepared for all courses)

On successful completion of this Course, students will be able to:

MPT101: Theory Modern Pharmaceutical Analytical Techniques

S. NO.	Statements
MPT101.1	The thorough theoretical and practical understanding of advanced analytical instruments of various spectroscopic techniques including NMR spectroscopy, Mass Spectroscopy.
MPT101.2	The principle, instrumentation and applications of separation techniques like Electrophoresis and chromatography. and X ray Crystallography.
MPT101.3	The analysis of various drugs in single and combination dosage forms.
MPT101.4	To acquire sufficient skill in handling of equipment's/procedures for estimation of pharmaceuticals.
MPT101.5	Able to work in a team so as to involve in interdisciplinary research projects

MPL102: Theory Advanced Pharmacology-I

S. NO.	Statements
MPL102.1	Explain the Pharmacokinetic and Pharmacodynamic aspects of drugs including quantization of drug receptor interaction.
MPL102.2	Illustrate the Neurohumoral transmission in Autonomic nervous system and central nervous system.
MPL102.3	Discuss the Pharmacology of drugs at cellular and molecular level
MPL102.4	Describe the Pathophysiology and Pharmacotherapy of certain diseases
MPL102.5	Understand the Physiological and Pathophysiological role of Autocoids

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On successful completion of this Course, students will be able to:	
MPL103: Theory Pharmacological and Toxicological Screening Methods-I	
S. NO.	Statements
MPL103.1	Appraise the regulation and guideline regarding animal handling and usage
MPL103.2	Demonstrate the use of various animals in screening methods
MPL103.3	Identify the new and novel screening methods for drug discovery process
MPL103.4	Correlate and extrapolate the preclinical data to human regimen
MPL103.5	Explain various good clinical practices useful in drug discovery process
MPL104: Theory Cellular and Molecular Pharmacology	
S. NO.	Statements
MPL104.1	Understood the fundamental knowledge on the structure and functions of cellular components
MPL104.2	Appreciate and apply the interaction of these components with drugs in drug discovery process
MPL104.3	Explain the receptor signal transduction processes and molecular pathway affected by drugs
MPL104.4	Appreciate the applicability of molecular pharmacology and biomarkers in drug discovery process. Explain the types and applications of Immunotherapeutics.
MPL104.5	Demonstrate molecular biology techniques as applicable for pharmacology.
MPL105: Practical Pharmacology I	
S. NO.	Statements
MPL105.1	Analyze different compounds and their formulations using UV Visible spectrophotometer
MPL105.2	Explain animal restraining, routes of drug administration, anaesthesia and euthanasia blood and tissue sampling techniques
MPL105.3	Evaluate CNS stimulant, depressant, anti-anxiety and anticonvulsant activities
MPL105.4	Evaluate different antiulcer, analgesic, anti-inflammatory, analgesic and local anaesthetic studies.
MPL105.5	Evaluate diuretic activity and oral glucose tolerance test.

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On successful completion of this Course, students will be able to:

MPL201: Theory Advanced Pharmacology-II

S. NO.	Statements
MPL201.1	Apply the cellular and molecular mechanism in drug discovery process. Demonstrate the endocrinal hormone applicability in replacement therapy
MPL201.2	Understand the importance of microbial agents' mechanism in regimen design
MPL201.3	Explain the chemotherapy of cancer, immunotherapy and immune response
MPL201.4	Identify the possible cause and prognosis in gastrointestinal diseases
MPL201.5	Explain the pathogenesis of neurodegenerative disease due to radical generations

MPL202: Theory Pharmacological and Toxicological Screening Methods-II

S. NO.	Statements
MPL202.1	Explain the basics and the types of toxicology. Enumerate the regulatory guidelines (ICH, OECD, EPA and Schedule-Y) required to perform preclinical toxicity studies in laboratories
MPL202.2	Explain oral, dermal, inhalational studies as per OECD guidelines
MPL202.3	Enumerate reproductive toxicology studies and genotoxicity studies
MPL202.4	Identify the role and importance of IND submission in drug discovery
MPL202.5	Explain the importance of toxicokinetic and alternative methods to animal toxicity testing

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On successful completion of this Course, students will be able to:	
MPL203: Theory Principles of Drug Discovery	
S. NO.	Statements
MPL203.1	Describe in detail about various stages involved in modern drug discovery process. Explain the role of various elements in target discovery and validation
MPL203.2	Explain Lead Identification methods and computational protein structure prediction
MPL203.3	Describe in detail about the concept of Rational Drug Design
MPL203.4	Explain the concept of molecular docking and its applications
MPL203.5	Explain the concept of QSAR, its statistical methods and prodrug design
MPL204: Theory Clinical Research and Pharmacovigilance	
S. NO.	Statements
MPL204.1	Explain the Principles of ICH-GCP, ICMR Schedule Y guidelines and the Ethical Principles governing Informed consent Process
MPL204.2	Discuss the roles and responsibilities of various Clinical Trail Personnel involved in Clinical trails
MPL204.3	Enumerate various guidelines for the Preparation of Essential Documents in Clinical Trail. Understand the types of adverse drug reactions, Management and terminologies of ADR
MPL204.4	Discuss the basic aspects and establishment of pharmacovigilance
MPL204.5	Interpret various methods for ADR reporting and tools used in Pharmacovigilance. Understand the Principles of Pharmacovigilance, Pharmacoeconomics and safety Pharmacology.

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MPL205: Practical Pharmacology II	
S. NO.	Statements
MPL205.1	To record the DRC of agonist using suitable isolated tissue preparations
MPL205.2	To study the effects of antagonist / potentiating agents on DRC of agonist using suitable isolated tissue preparations
MPL205.3	To determine strength of unknown sample by matching bioassay and bracketing bioassay by using suitable isolated tissue preparations
MPL205.4	To determine strength of unknown sample by interpolation, multiple point bioassay by using suitable isolated tissue preparations
MPL205.5	Using <i>In-silico</i> docking studies/pharmacophore-based screening/QSAR studies
MRM301: Research Methodology and Biostatistics	
S. NO.	Statements
MRM301.1	Analyze the value, scope, objectives and requirements of research.
MRM301.2	Discuss the basic concepts of statistical analysis
MRM301.3	Apply the basic principles of medical research and ethics.
MRM301.4	Understand the guidelines for the maintenance of laboratory animals(CPCSEA Guidelines).
MRM301.5	Create efficiency in thesis writing editing and formatting.