

M.Pharm Course Outcome				
M.Pharm Pharmaceutics				
	Course name	Course Code	Course Credits	Course Outcomes (CO)
<b>(1st Sem)</b>	Modern Pharmaceutical Analytical Techniques	MPH101T	4	<b>CO1:</b> The students shall be able to understand Chemicals and Excipients <b>CO 2:</b> The students shall be able to understand the analysis of various drugs in single and combination dosage forms <b>CO 3:</b> The students shall be able to understand theoretical and practical skills of the instruments
	Drug Delivery System	MPH102T	4	<b>CO1:</b> The students shall be able to understand the various approaches for development of novel drug delivery systems <b>CO 2:</b> The students shall be able to understand the criteria for selection of drugs and polymers for the development of delivering system <b>CO 3:</b> The students shall be able to understand the formulation and evaluation of Novel drug delivery system
	Modern Pharmaceutics	MPH103T	4	<b>CO1:</b> The students shall be able to understand the elements of preformulation <b>CO 2:</b> The students shall be able to understand the Active Pharmaceutical Ingredients and Generic drug Product development <b>CO 3:</b> The students shall be able to understand Industrial Management and GMP Considerations.
	Regulatory Affairs	MPH104T	4	<b>CO1:</b> The students shall be able to understand the chemistry, manufacturing controls and their regulatory importance <b>CO 2:</b> The students shall be able to understand the documentation requirements for IND, NDA and ANDA <b>CO 3:</b> The students shall be able to understand the approval process of IND, NDA and ANDA

	Pharmaceutics Practical I	MPH105P	6	<p><b>CO1:</b> The students shall be able to understand analysis of pharmacopoeial compounds and their formulations by UV Vis spectrophotometer</p> <p><b>CO 2:</b> The students shall be able to carry out preformulation studies of tablets</p> <p><b>CO 3:</b> The students shall be able to understand experiments based on HPLC</p>
	Seminar/Assignment	NA	4	NA
	<b>Course name</b>	<b>Course Code</b>	<b>Course Credits</b>	<b>Course Outcomes (CO)</b>
<b>(2nd Sem)</b>	Molecular Pharmaceutics (Nano Tech and Targeted DDS)	MPH201T	4	<p><b>CO1:</b> The students shall be able to understand the various approaches for development of novel drug delivery systems.</p> <p><b>CO 2:</b> The students shall be able to understand the criteria for selection of drugs and polymers for the development of NTDS</p> <p><b>CO 3:</b> The students shall be able to understand the formulation and evaluation of novel drug delivery systems</p>
	Advanced Biopharmaceutics & Pharmacokinetics	MPH202T	4	<p><b>CO1:</b> The students shall be able to understand the basic concepts in biopharmaceutics and pharmacokinetics.</p> <p><b>CO 2:</b> The students shall be able to understand the use raw data and derive the pharmacokinetic models and parameters the best describe the process of drug absorption, distribution, metabolism and elimination</p> <p><b>CO 3:</b> The students shall be able to understand the critical evaluation of biopharmaceutic studies involving drug product equivalency</p>
	Computer Aided Drug Delivery System	MPH203T	4	<p><b>CO1:</b> The students shall be able to understand history of Computers in Pharmaceutical Research and Development</p> <p><b>CO 2:</b> The students shall be able to understand computational Modeling of Drug Disposition</p> <p><b>CO 3:</b> The students shall be able to understand Artificial Intelligence (AI) and Robotics</p>

	Cosmetic and Cosmeceuticals	MPH204T	4	<p><b>CO1:</b> The students shall be able to understand key ingredients used in cosmetics and cosmeceuticals</p> <p><b>CO 2:</b> The students shall be able to understand various key ingredients and basic science to develop cosmetics and cosmeceuticals</p> <p><b>CO 3:</b> The students shall be able to understand the scientific knowledge to develop cosmetics and cosmeceuticals with desired Safety, stability, and efficacy</p>
	Pharmaceutics Practical-II	MPH205P	6	<p><b>CO1:</b> The students shall be able to understand the effect of temperature change , non solvent addition, incompatible polymer addition in microcapsules preparation</p> <p><b>CO 2:</b> The students shall be able to understand Quality-by-Design in Pharmaceutical Development</p> <p><b>CO 3:</b> The students shall be able to understand DoE Using Design Expert® Software</p>
	Seminar/Assignm	NA	4	NA
	<b>Course name</b>	<b>Course Code</b>	<b>Course Credits</b>	<b>Course Outcomes (CO)</b>
<b>(3rd Sem)</b>	Research Methodology and Biostatistics	MRM 301T	4	<p><b>CO1:</b> The students shall be able to understand general Research Methodology and Medical research</p> <p><b>CO 2:</b> The students shall be able to understand biostatistics</p> <p><b>CO 3:</b> The students shall be able to understand CPCSEA guidelines for laboratory animal facility</p>
	Journal club	NA	1	NA
	Discussion / Presentation (Proposal	NA	2	NA
	Research Work	NA	14	NA
	<b>Course name</b>	<b>Course Code</b>	<b>Course Credits</b>	<b>Course Outcomes (CO)</b>
<b>(4th Sem)</b>	Journal Club	NA	1	NA
	Research Work	NA	16	NA
	Discussion/Final Presentation	NA	3	NA
<b>M.Pharm Pharmacology</b>				
	<b>Course name</b>	<b>Course Code</b>	<b>Course Credits</b>	

<b>(1st Sem)</b>	Modern Pharmaceutical Analytical Techniques	MPL101T	4	<p><b>CO1:</b> The students shall be able to understand Chemicals and Excipients</p> <p><b>CO 2:</b> The students shall be able to understand the analysis of various drugs in single and combination dosage forms</p> <p><b>CO 3:</b> The students shall be able to understand theoretical and practical skills of the instruments</p>
	Advanced Pharmacology-I	MPL102T	4	<p><b>CO1:</b> The students shall be able to understand the pathophysiology and pharmacotherapy of certain diseases</p> <p><b>CO 2:</b> The students shall be able to understand the mechanism of drug actions at cellular and molecular level</p> <p><b>CO 3:</b> The students shall be able to understand the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases</p>
	Pharmacological and Toxicological Screening Methods-I	MPL103T	4	<p><b>CO1:</b> The students shall be able to describe the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals</p> <p><b>CO 2:</b> The students shall be able to describe the various newer screening methods involved in the drug discovery processes</p> <p><b>CO 3:</b> The students shall be able to understand and correlate the preclinical data to humans</p>
	Cellular and Molecular Pharmacology	MPL104T	4	<p><b>CO1:</b> The students shall be able to explain the receptor signal transduction processes</p> <p><b>CO 2:</b> The students shall be able to explain the molecular pathways affected by drug</p> <p><b>CO 3:</b> The students shall be able to understand the applicability of molecular pharmacology and biomarkers in drug discovery processes</p>
	Pharmacology Practical I	MPL105P	6	<p><b>CO1:</b> The students shall be able to understand Analysis of pharmacopoeial compounds and their formulations by UV Vis spectrophotometer</p> <p><b>CO 2:</b> The students shall be able to handle laboratory animals.</p> <p><b>CO 3:</b> The students shall be able to understand various routes of drug administration</p>
	Seminar/Assignm	NA	4	NA
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<b>(2nd Sem)</b>	Advanced Pharmacology II	MPL201T	4	<p><b>CO1:</b> The students shall be able to understand the mechanism of drug actions at cellular and molecular level</p> <p><b>CO 2:</b> The students shall be able to understand the Pathophysiology and pharmacotherapy of certain diseases</p> <p><b>CO 3:</b> The students shall be able to understand the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases</p>
	Pharmacological and Toxicological Screening Methods-II	MPL202T	4	<p><b>CO1:</b> The students shall be able to understand the various types of toxicity studies</p> <p><b>CO 2:</b> The students shall be able to understand the importance of ethical and regulatory requirements for toxicity studies</p> <p><b>CO 3:</b> The students shall be able to understand the practical skills required to conduct the preclinical toxicity</p>
	Principles of Drug Discovery	MPL203T	4	<p><b>CO1:</b> The students shall be able to understand the various stages of drug discovery</p> <p><b>CO 2:</b> The students shall be able to understand the importance of the role of genomics, proteomics and bioinformatics in drug discovery</p> <p><b>CO 3:</b> The students shall be able to understand various targets for drug discovery</p>
	CLINICAL RESEARCH AND PHARMACOVIGILANCE	MPL204T	4	<p><b>CO1:</b> The students shall be able to understand the regulatory requirements for conducting clinical trial</p> <p><b>CO 2:</b> The students shall be able to understand the types of clinical trial designs</p> <p><b>CO 3:</b> The students shall be able to perform the adverse drug reaction reporting systems and communication in Pharmacovigilance</p>
	Pharmacology Practical II	MPL205P	6	<p><b>CO1:</b> The students shall be able to understand drug absorption studies by averted rat ileum preparation</p> <p><b>CO 2:</b> The students shall be able to understand acute oral toxicity studies as per OECD guideline</p> <p><b>CO 3:</b> The students shall be able to understand ADR reporting</p>
	Seminar/Assignm	NA	4	NA
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<b>(3rd Sem)</b>	Research Methodology and Biostatistics	MRM 301T	4	<b>CO1:</b> The students shall be able to understand general Research Methodology and Medical research <b>CO 2:</b> The students shall be able to understand biostatistics <b>CO 3:</b> The students shall be able to understand CPCSEA guidelines for laboratory animal facility
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	Research Work	NA	14	NA
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<b>(4th Sem)</b>	Journal Club	NA	1	NA
	Research Work	NA	16	NA
	Discussion/Final Presentation	NA	3	NA