





Semester I

Subject	Subject Code	CO No.	CO Statement	PSO 1	PSO 2	PSO 3
Modern Pharmaceutical Analytical Techniques	MPH.101T	MPH.101T.22-23.CO1	To understand the basic concept, principle and Instrumentation, working and application of UV visible, IR, Spectrofluorimetry, Flame emission and Atomic absorption spectroscopy.	3	2	3
		MPH.101T.22-23.CO2	To understand the basic concept, principle, instrumentation, working and application of NMR spectroscopy.	3	3	3
		MPH.101T.22-23.CO3	To learn the basic principle, instrumentation, working and application of Mass spectroscopy.	2	1	2
		MPH.101T.22-23.CO4	To understand the basic concept, principle, instrumentation, working and application of chromatographic technique.	3	3	3
		MPH.101T.22-23.CO5	To understand the basic concept, principle, instrumentation, working and application of Electrophoresis.	2	1	1
		MPH.101T.22-23.CO6	To understand the basic concept, principle, working and application of Immunological Assay.	1	1	2
Drug Delivery System	MPH.102T	MPH 102T.22-23.CO1	Understand various barriers in drug delivery and to overcome the barrier	3	0	1
		MPH 102T.22-23.CO2	The various advantages and disadvantage for development of novel drug delivery system.	3	0	1
		MPH 102T.22-23.CO3	The criteria for selection of drugs and polymers for the development of delivering system	3	0	1
		MPH 102T.22-23.CO4	The need, concept, design, and mechanism of various customized, sustained, and controlled release dosage forms.	3	0	1
		MPH 102T.22-23.CO5	To Formulate and evaluate various novel drug delivery system	3	0	2
Modern Pharmaceutics	MPH.103T	MPH.103T.22-23.CO1	Understands the preformulation concept and optimization technique in pharmaceutical formulation.	3	1	1
		MPH.103T.22-23.CO2	Learn the concept of validation and ICH & WHO guidelines for validation of equipment and pharmaceutical product.	3	1	1
		MPH.103T.22-23.CO3	Understands the current good manufacturing process and industrial management for pharmaceutical product	3	1	1
		MPH.103T.22-23.CO4	To understand the compression compaction theories for tablet.	3	1	1
		MPH.103T.22-23.CO5	To understand the consolidation parameters for solid dosage forms.	3	1	1
Regulatory Affairs	MPH.104T	MPH.104T.22-23.CO1	Understanding the concept of regulatory affairs and regulatory requirement for product approval	3	1	0
		MPH.104T.22-23.CO2	To learn ICH guidelines ,CMC , post regulatory affairs and different regulatory requirement	3	1	0
		MPH.104T.22-23.CO3	To understand non clinical drug development , IMPD , IB	3	1	0
		MPH.104T.22-23.CO4	To understand developing clinical trial protocol , IRB, IEC,IC and pharmacovigilance in clinical trial	3	1	0
Pharmaceutics Practical I	MPH.105P	MPH.105P.22-23.CO1	Students will understand various spectroscopic methods for estimation of drug in a pharmaceutical formulation	3	1	3
		MPH.105P.22-23.CO2	Students will understand various form of NDDS which improves the drugs sustainability and effectiveness	3	2	3
		MPH.105P.22-23.CO3	Students able to understand concept of invitro dissolution, Apparatus of dissolution test & types of dissolution shaft as per I.P, USP & B.P, Effect of particle size on dissolution.	3	2	3
		MPH.105P.22-23.CO4	Students will understand the concept of preformulation study. Understand the effect of compressional force on surface structure, crushing strength etc	3	2	3
		MPH.105P.22-23.CO5	Understand various method estimation of drug kinetics	3	2	3



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Semester II

Subject	Subject Code	CO No.	CO Statement	PSO 1	PSO 2	PSO 3
NTDDS	MPH.201T	MPH.201T.22-23.CO1	To understand, appreciate and able to explain the Concepts of Targeted Drug Delivery System.	3	2	2
		MPH.201T.22-23.CO2	To understand and explain the various approaches for development of Novel drug delivery system.	3	2	2
		MPH.201T.22-23.CO3	To understand and explain the criteria for selection of drugs and polymers for the development of NDDS.	3	2	2
		MPH.201T.22-23.CO4	To explain the formulation and evaluation of novel drug delivery systems.	3	2	2
Advanced Biopharmaceutics and Pharmacokinetics	MPH.202T	MPH.202T.22-23.CO1	The basic concepts in biopharmaceutics and pharmacokinetics.	3	2	2
		MPH.202T.22-23.CO2	The use raw data and derive the pharmacokinetic models and parameters the best describe the process of drug absorption, distribution, metabolism and elimination	3	2	3
		MPH.202T.22-23.CO3	The critical evaluation of biopharmaceutic studies involving drug product equivalency.	3	2	3
		MPH.202T.22-23.CO4	The design and evaluation of dosage regimens of the drugs using pharmacokinetic and biopharmaceutic parameters	3	2	3
		MPH.202T.22-23.CO5	The potential clinical pharmacokinetic problems and application of basics of pharmacokinetic	3	2	2
Computr Aided Drug Delivery	MPH.203T	MPH.203T.22-23.CO1	Understand the history of computers in pharmaceutical research and development	3	1	1
		MPH.203T.22-23.CO2	Explain the concept computational modeling of drug disposition and computers use in preclinical development	3	1	1
		MPH.203T.22-23.CO3	Apply the concept optimization techniques in pharmaceutical formulation and learn the benefits of computers in market analysis	3	1	1
		MPH.203T.22-23.CO4	Understand the use computers in clinical development and learn the concept of computer-aided biopharmaceutical characterization and gastrointestinal absorption simulation	3	1	1
		MPH.203T.22-23.CO5	Understand the concept of Artificial Intelligence (AI), Robotics, and Computational fluid dynamics (CFD)	3	1	1
Cosmetic and cosmeceuticals	MPH.204T	MPH.204T.22-23.CO1	To learn about the key ingredient used in cosmetics and cosmeceuticals.	3	1	0
		MPH.204T.22-23.CO2	To learn about key building blocks for various formulations	3	0	0
		MPH.204T.22-23.CO3	Understanding current technologies in the market	1	0	0
		MPH.204T.22-23.CO4	Learning various key ingredients and basic science to develop cosmetics and cosmeceuticals	3	2	0
		MPH.204T.22-23.CO5	Scientific knowledge to develop cosmetics and cosmeceuticals with desired Safety, stability, and efficacy.	3	0	1
Pharmaceutics Practical II	MPH.205P	MPH.205P.22-23.CO1	Formulate & develop various novel microparticulate drug delivery systems like microspheres, beads, liposomes, spherules etc.	3	2	3
		MPH.205P.22-23.CO2	Construct the experimental design for any formulation using Design Expert® Software and other statistical techniques.	3	2	3
		MPH.205P.22-23.CO3	Elaborate methods to enhance solubility of poorly water soluble drugs and can perform dissolution studies of various pharmaceutical dosage forms.	3	2	3
		MPH.205P.22-23.CO4	Develop & evaluate various cosmetic products viz. Shampoo, Skin creams, Toothpaste etc.	3	2	3
		MPH.205P.22-23.CO5	Understand Dissolution paramrters like similarity and diference factor	3	2	3



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Semester III

Subject	Subject Code	CO No.	CO Statement	PSO 1	PSO 2	PSO 3
Research Methodology	MRM301T	MRM.301TT.22-23.CO1	Understand the behavioural needs for a Research operation.	3	2	3
		MRM.301TT.22-23.CO2	Summarizing and understanding the concept, different Problem solving.	3	2	1
		MRM.301TT.22-23.CO3	Implementing concepts and different techniques.	3	2	3
		MRM.301TT.22-23.CO4	Recognizing the different techniques, Communicate effectively Verbal and Non-verbal and application of required research Structure.	3	2	1

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