Program Outcomes:

Program outcomes are statements conveying the intent of a program of study. Specifically, program outcomes refer to what a student should know or be able to do at the end of a program. They are often seen as the knowledge and skills students will have obtained by the time they have received their intended degree.

Program Outcomes for M.Pharmacy (Pharmaceutics) Program

1. Scholarship of Knowledge: Develop an understanding for the need of pharmaceutical sciences and technology towards giving quality life to people in society through the quality of medicines.

2. Critical Thinking: Analyze complex pharmaceutical problems critically; apply independent judgment for synthesizing information to make intellectual and/or creative advances for conducting research in a wider theoretical, practical and policy context.

3. Problem Solving: Think laterally and originally, conceptualize and solve pharmaceutical problems, evaluate a wide range of potential solutions for those problems and arrive at feasible, optimal solutions after considering public health and safety, cultural, societal and environmental factors in the core areas of expertise.

4. Research Skill: Extract information pertinent to unfamiliar problems through literature survey and experiments, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyse and interpret data, demonstrate higher order skill and view things in a broader perspective, contribute individually/in group(s) to the development of scientific/technological knowledge in one or more domains of pharmaceutical sciences.

5. Usage of modern tools: Create, select, learn and apply appropriate techniques, resources, and modern instruments and IT tools, including prediction and modelling, to complex pharmaceutical activities with an understanding of the limitations

6. Collaborative and Multidisciplinary work: Collaborative-multidisciplinary scientific research, demonstrate a capacity for self-management and teamwork, decision-making based on open-mindedness, objectivity and rational analysis in order to achieve common goals and further the learning of themselves as well as others.

7. Communication: Communicate with the pharma community, and with society at large, regarding complex health activities confidently and effectively, such as, being able to comprehend and write effective reports and design documentation by adhering to appropriate standards, make effective presentations, and give and receive clear instructions.

8. Research outcomes and Entrepreneurship: Acquire ability to disseminate the research outcomes useful to government, pharmaceutical industries, health care providers and the community, through Publications and presentations. Contribute as reliable resource for industry research, Consultation and training partnerships. Possess ability to identify business Opportunities and initiate entrepreneurship.

9. Ethical Practices and Social Responsibility: Acquire professional and intellectual integrity, professional code of conduct, ethics of research and scholarship, consideration of the impact of research outcomes on professional practices and an understanding of responsibility to contribute to the community for sustainable development of society.

10. Life-long Learning: Recognize the need for, and have the preparation and ability to engage in life-long learning independently, with a high level of enthusiasm and commitment to improve knowledge and competence continuously.

Course Outcomes:

Course Outcomes are narrower statements that describe what students are expected to know, and be able to do at the end of each course. These relate to the skills, knowledge, and behaviour that students acquire in their enrolment through the course.

COURSE NAME COURSE CODE	COURSE OUTCOME CODE	COURSE OUTCOMES
Modern Pharmaceutical Analytical Techniques MPH101T	MPH101T.1	The students will also be in a position to apply their knowledge in Pharmaceutical Analysis
	MPH101T.2	The analysis of various drugs in single and combination dosage forms
	MPH101T.3	Theoretical and Practical skills of the instrument
	MPH101T.4	Apply the Skill in developing the New Analytical methods for the validation Procedure
	MPH101T.5	learn the principle, instrumentation and applications of electrophoresis and X ray crystallography
	MPH101T.6	Perceive the fundamentals of immunological assays.
Drug Delivery System MPH102T	MPH102T.1	Categorize drugs in various novel drug delivery systems based on their physico-chemical and biological approaches
	MPH102T.2	Select polymers based on the properties and their application in drug delivery system
	MPH102T.3	Develop the concept of tele pharmacy, 3D printing, bioelectronic medicine and personalized medicine
	MPH102T.4	Analyze the principals and fundamentals of rate controlled drug delivery systems
	MPH102T.5	Assess various formulation and evaluation of drug delivery systems
	MPH102T.6	Apply knowledge of protein drugs and biological products such as vaccines in their development and evaluation
Modern Pharmaceutics MPH103T	MPH103T.1	Perceive the key elements of preformulation studies
	MPH103T.2	Explain various optimization techniques in formulation development
	MPH103T.3	Analyze various types of validation protocols with effective application
	MPH103T.4	Justify current good manufacturing practices in pharma industries
	MPH103T.5	Theoretically explain various stages of tablet compression process
	MPH103T.6	Estimate various dissolution parameters

Regulatory Affairs MPH104T	MPH104T.1	Learn the stages of drug development process
	MPH104T.2	Understand new drug approval processes
	MPH104T.3	Learn about technical documentation
	MPH104T.4	Perceive electronic common technical documentation
	MPH104T.5	Learn about design and control of clinical trials
	MPH104T.6	Discussion on pharmacovigilance aspects
Pharmaceutics Practical I MPH105PA	MPH105PA.1	Analysis by UV Visible Spectrophotometer
	MPH105PA.2	Estimation of drugs by High performance liquid chromatography
	MPH105PA.3	Analysis of drugs by gas chromatography
	MPH105PA.4	Estimation of drugs employing flame photometry
	MPH105PA.5	Preformulation studies of tablets
	MPH105PA.6	Study of micromeritic properties of tablets
Pharmaceutics Practical II MPH105PB	MPH105PB.1	Explain the effect of particle size on dissolution rate
	MPH105PB.2	Explain the effect of binders on dissolution rate of tablets
	MPH105PB.3	Compare the dissolution rate of various brands of sustained release marketed tablets
	MPH105PB.4	Formulate and evaluate sustained release matrix tablets
	MPH105PB.5	Formulate and evaluate floating tablet dosage forms
	MPH105PB.6	Formulate and evaluate transdermal patches
Molecular Pharmaceutics (Nano Technology and Targeted DDS) (NTDS) MPH201T	MPH201T.1	Understand various approaches for development of novel drug delivery systems
	MPH201T.2	Learn about criteria for selection of polymers
	MPH201T.3	Learn about criteria for selection of drugs in novel drug delivery systems
	MPH201T.4	Studies relevant to formulation of targeted drug delivery systems
	MPH201T.5	Understand nucleic acid based therapeutic delivery system
	MPH201T.6	Description of various quality control tests for novel drug delivery systems

Advanced Biopharmaceutics & Pharmacokinetics MPH202T	MPH202T.1	Description and assessment of drug absorption processes
	MPH202T.2	Justify the developed pharmacokinetic model based on obtained data
	MPH202T.3	Critical evaluation of bioavailability and bioequivalence studies
	MPH202T.4	Development of dosage regimens using pharmacokinetic knowledge
	MPH202T.5	Understand in vitro -in vivo correlations
	MPH202T.6	Application of pharmacokinetics to understand clinical problems
Computer Aided Drug Delivery System MPH203T	MPH203T.1	Understand the history and applications of computers in pharmaceutical research and development.
	MPH203T.2	Construct statistical modelling principles & optimization using computer applications.
	MPH203T.3	Develop the basic computational modelling principles for drug disposition.
	MPH203T.4	Interpret computer simulation in pharmacokinetics and pharmacodynamics.
	MPH203T.5	Identify the role of computers in R&D, clinical development
	MPH203T.6	Explain pharmaceutical automation and computational fluid dynamics
Formulation Development of Pharmaceutical and Cosmetic Products MPH204T	MPH204T.1	Assess drug excipient compatibility studies
	MPH204T.2	Justify the usage of additives in different formulations
	MPH204T.3	Estimate drug solubility by phase solubility analysis
	MPH204T.4	Explain various theories of dissolution
	MPH204T.5	Plan for stability studies as per international guidelines
	MPH204T.6	Explain about the composition of regularly used cosmetics
Pharmaceutics Practical III MPH205PA	MPH205PA.1	Interpret the effect of different factors on microencapsulation process
	MPH205PA.2	Formulate and evaluate sodium alginate beads
	MPH205PA.3	Design and formulate liposomes
	MPH205PA.4	Improve the dissolution rate of a poorly soluble drug by solid dispersion technique
	MPH205PA.5	Estimate the effect of protein binding on drug diffusion
	MPH205PA.6	Estimate the permeability of drugs by in vitro method

Pharmaceutics Practical IV MPH205PB	MPH205PB.1	Applications of design expert software
	MPH205PB.2	Understand quality by design concept
	MPH205PB.3	Describe computer simulations in pharmacokinetics
	MPH205PB.4	Formulation and evaluation of shampoo
	MPH205PB.5	Formulation and evaluation of multi vitamin syrup
	MPH205PB.6	Formulation of tablets employing optimization technique
Research Methodology and Biostatistics* MRM301T	MRM301T.1	Explain qualitative and quantitative aspects of clinical study design
	MRM301T.2	Interpret Various Biostatistical methods in Experimental Pharmacological studies
	MRM301T.3	Describe various ethical guidelines for biomedical research.
	MRM301T.4	Enumerate various CPCSEA guidelines for laboratory animal facility.
	MRM301T.5	Discuss the principals of Declaration of Helsinki for Medical Research.
	MRM301T.6	Understand Research writing and Review of Literature
Journal Club MRM302S & MRM401P	MRM401P.1	Understanding and debating current topics of active interest in their field
	MRM401P.2	Apply skills to use search engines for selection of scientific articles of their interest
	MRM401P.3	Analyze the critical thinking skills in appraisal of the scientific literature
	MRM401P.4	Create a scientific report on the critically appraised article
	MRM401P.5	Evaluate detailed knowledge of a specific area of research including the literature published in that area, its underlying concepts, theories and assumptions.
	MRM401P.6	Apply ability to write various types of manuscripts
Discussion and Presentation MRM303S & MRM403P	MRM403P.1	Identify relevant information, defining and explaining topics under discussion
	MRM403P.2	Demonstrate complexity, insight, cogency, independent thought, relevance and persuasiveness
	MRM403P.3	Demonstrate Command of voice modulation, voice projection, and pacing to support their presentation
	MRM403P.4	Evaluate information and use and apply relevant theories
	MRM403P.5	Demonstrate breadth of reading, use sources, show independence and flexibility of thought
	MRM403P.6	Analyze and Demonstrate problem solving skills and apply theoretical knowledge

Research Work and Colloquium MRM304S & MRM404P	MRM404P.1	Identify and discuss the role, importance and concepts to the research process in pharmacology
	MRM404P.2	Discuss the complex issues in selecting a research problem, selecting an appropriate research design, and implementing a research project.
	MRM404P.3	Identify and discuss the concepts and procedures of sampling, data collection, analysis and reporting.
	MRM404P.4	Establish motivation for any topic of interest and develop a thought process for technical presentation.
	MRM404P.5	Organize a detailed literature survey and build a document with respect to technical publications. Analysis and comprehension of proof-of-concept and related data.
	MRM404P.6	Analysis and comprehension of proof-of-concept and related data and Make use of new and recent technology for creating technical reports