Course Outcomes of M. Pharmacy (Pharmaceutical Chemistry)

First Year M. Pharmacy (SEM-I)

Course Name	MPC101T (Modern Pharmaceutical Analytical Techniques- Theory)	Year of Study	2022-23
	Students will be able to:		
MPC101T.1	Apply the basic theoretical principles of spectroscopic and hyphenated techniques in relation to drug analysis.		
MPC101T.2	Understand the principle of chromatographic instruments for separation, identification, and characterization of compounds and drugs.		
MPC101T.3	Explain Instrumentation and relate identification of compounds by electrophoresis technique and X-ray crystallography		
MPC101T.4	Summarize the various types of Thermal techniques like DSC, TGA, DTA and their applications.		
MPC101T.5	Execute the theoretical knowledge for analysis of various compounds and drugs in single and combination dosage forms		

Course Name	MPC102T (Advanced Organic Chemistry -I- Theory)	Year of Study	2022-23
	Students will be able to:		
MPC102T.1	Acquaint themselves with basics of organic chemistry and fundamentals about Organic intermediates, reaction mechanisms and addition reactions of organic compounds.		
MPC102T.2	Understand importance and synthetic applications of important named reactions.		
MPC102T.3	Gain knowledge about role and applications of synthetic reagents and protecting groups in organic reactions.		
MPC102T.4	apply the knowledge of basic organic chemistry in synthesis of drugs.		
MPC102T.1	Understanding of all components of medicinal chemistry will help in developing critical thinking and evidence-based problem-solving ability.		

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Course Name	MPC103T (Advanced Medicinal Chemistry - Theory)	Year of Study	2022-23
	Students will be able to:		
MPC103T.1	Understand the different stages, techniques of drug discovery & medicinal chemistry in drug research		
MPC103T.2	Apply various strategies to design and develop a new drug like molecules for biological targets		
MPC103T.3	Learn structural activity relationship of the important class of drugs		
MPC103T.4	Explain concept of enzyme inhibition and its application in chemistry research		
MPC103T.5	Understand peptidomimetics approach and its applications		

Course Name	MPC104 (Chemistry of Natural Products- Theory)	Year of Study	2022-23
	Students will be able to:		
MPC104T.1	Understand importance of natural products as lead compounds in pharmaceutical drug design		
MPC104T.2	Learn structurally diverse natural products of flavonoinds, alkaloids steroidal and terpenoids class		
MPC104T.3	Gain knowledge and applications of recombinant DNA technology and drug discovery		
MPC104T.4	Apply knowledge of spectroscopy techniques for structural characterization of natural compounds		
MPC104T.5	Implement different methods of extraction, isolation and purification of natural actives.		

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Course Name	MPC105P (Pharmaceutical Chemistry Practical I- Practical)	Year of Study	2022-23
	Students will be able to:		
MPC105P.1	Perform Analysis of Pharmacopeial compounds and their formulations by UV Vis spectrophotometer and chromatography		
MPC105P.2	Synthesize and characterize organic compounds of medicinal importance		
MPC105P.3	Estimate elements and functional groups in organic and natural compound and analyze these using spectroscopic techniques.		

Course Name	Seminar/ Assignment (MPC106S)	Year of Study	2022-23
	Student will be able to….		
MPC106S	Learn effective oral and written presentation, listening and discussion skills through the presentation aids as well as nonverbal communication		
MPC106S	Prepare a well-organized report employing elements of technical writing and critical thinking.		
MPC106S	Demonstrate the capability to explain, interpret and analyze technical issues and develop competence in presentation.		

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First Year M. Pharmacy (SEM-II)

Course Name	MPC 201T (Advanced Spectral Analysis)	Year of Study	2022-23
	Student will be able to….		
MPC201T.1	Understand principles and instrumentation of spectroscopic and hyphenated analytical techniques.		
MPC201T.2	Analyze different analytical data for pharmaceutical applications.		
MPC 201T.3	Understand and apply spectroscopic analytical techniques for drug structure interpretation.		
MPC 201T.4	Perform quantitative & qualitative analysis of drugs using various spectrophotometric analytical techniques.		
MPC 201T.5	Develop professional skill sets for handling various spectroscopic and hyphenated analytical techniques.		

Course Name	MPC202T (Advanced Organic Chemistry-II)	Year of Study	2022-23
	Students will be able to:		
MPC202T.1	Understand and apply green chemistry concepts in development of synthetic protocols.		
MPC202T.2	Utilize knowledge of catalysis in development of pharmaceutical products.		
MPC202T.3	Analyze and develop peptides using different synthetic techniques.		
MPC202T.4	Develop professional skills in handling various synthetic protocols using modern synthetic approaches.		
MPC202T.5	Apply Stereochemistry concepts for asymmetrical synthesis for drugs and pharmaceutical excipients.		

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Course Name	MPC203T (Computer Aided Drug Design)	Year of Study	2022-23
	Students will be able to:		
MPC203T.1	Understand and apply physicochemical property and bioactivity correlation for developing novel customized drugs.		
MPC203T.2	Apply quantum and molecular mechanical concepts in the drug design.		
MPC203T.3	Construct a virtual model of drug actions via application of virtual screening techniques.		
MPC203T.4	Develop professional skill set for handling information from large database sets for annotation of gene & proteins.		
MPC203T.5	Utilize various *In silico* techniques for design and development of drugs.		

Course Name	MPC204T (Pharmaceutical Process Chemistry)	Year of Study	2022-23
MPC204T.1	Understand and apply concepts of Process chemistry in design and development of pharmaceutical process.		
MPC204T.2	Utilize knowledge of unit operations in development of pharmaceutical products.		
MPC204T.3	Optimize and develop pharmaceutical products using cost-effective, environmentally friendly, and efficient synthetic techniques.		
MPC204T.4	Develop professional skill sets for design and optimization of Synthetic strategy.		
MPC204T.5	Understand and analyze impact of Industrial Safety management in pharmaceutical process.		

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Course Name	MPC205P (Pharmaceutical Chemistry Practical – II)	Year of Study	2022-23
MPC205P.1	Students will acquire skills to apply knowledge of Spectroscopic techniques for analysis of pharmaceutical ingredients and intermediates.		
MPC205P.2	Conceptual understanding of advanced synthetic protocol will impart students with ability of applying knowledge and skills for commercial purpose.		
MPC205P.3	Students will acquire knowledge regarding computational tools and be able to apply these for drug design and development.		

Course Name	Seminar/ Assignment (MPC206S)	Year of Study	2022-23
	Student will be able to….		
MPC206S	Learn effective oral and written presentation, listening and discussion skills through the presentation aids as well as nonverbal communication		
MPC206S	Prepare a well-organized report employing elements of technical writing and critical thinking.		
MPC206S	Demonstrate the capability to explain, interpret and analyze technical issues and develop competence in presentation.		

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M. Pharmacy SEM-III

Course Name	Research Methodology and Biostatistics (MRM301T)	Year of Study	2022-23
	Upon completion of course students will be able to…		
MRM301T.1	To understand the various aspects of research methodology and the use of biostatistics in research and development.		
MRM301T.2	To compare the various statistical techniques and their applications during research		
MRM301T.3	To select and perform the appropriate parametric/ nonparametric tests as per the data, manually as well as using statistical software models and tools.		
MRM301T.4	To elaborate with examples the ethics involved in medical and pharmaceutical research		
MRM301T.5	To relate and interpret the guidelines of CPCSEA for laboratory animal facilities and basic principles of medical research.		

Course Name	MJC302 (Journal Club)	Year of Study	2022-23
	Students will be able to……		
MJC302 .1	Keep themselves abreast of new knowledge and generate awareness of current research findings		
MJC302.2	Develop analytical, interpreting abilities, problem-solving skills and utilize research in evidence-based practice		
MJC302.3	Improve debating skills and demonstrate leadership skills.		

Course Name	RPP303 (Discussion / Presentation (Proposal Presentation)	Year of Study	2022-23
RPP303.1	Support the chosen research area and discuss the acquired skills to prepare alternate protocols/outcomes in unexpected circumstances		
RPP303.2	Discuss novelty, ethical aspects, and environmental concerns as well as the drawbacks of the research project		
RPP303.3	Defend their research project effectively and confidently in front of the experts.		

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Course Name	RWP304 (Research Work)	Year of Study	2022-23
RWP304.1	Review scientific literature for the research proposal and record evidence-based published work		
RWP304.2	Perform research independently by improving problem-solving capabilities and by understanding ethics in research.		
RWP304.3	Develop theoretical and practical skills by performing research-based experiments on different instruments and gain knowledge on the assimilation of data and scientific writing		

M. Pharmacy SEM-IV

Course Name	MJC401 (Journal Club)	Year of Study	2022-23
MJC401.1	Keep themselves abreast of new knowledge and generate awareness of current research findings		
MJC401.2	Develop analytical, interpreting abilities, problem-solving skills and utilize research in evidence-based practice		
MJC401.3	Improve debating skills and demonstrate leadership skills.		

Course Name	RWP402 (Research Work)	Year of Study	2022-23
RWP402.1	Review scientific literature for the research proposal and record evidence-based published work		
RWP402.2	Perform research independently by improving problem-solving capabilities and by understanding ethics in research.		
RWP402.3	Develop theoretical and practical skills by performing research-based experiments on different instruments and gain knowledge on the assimilation of data and scientific writing		

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Course Name	RPP403 (Discussion/Final Presentation)	Year of Study	2022-23
RPP403.1	Support the chosen research area and discuss the acquired skills to prepare alternate protocols/outcomes in unexpected circumstances		
RPP403.2	Discuss novelty, ethical aspects, and environmental concerns as well as the drawbacks of the research project		
RPP403.3	Defend their research project effectively and confidently in front of the experts.		

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