



**First Year M. Pharmacy (SEM- I)**

**Name of the course: Modern Pharmaceutical Analysis Techniques (Theory)**

**[MPC 101 T]**

After completion of this course student will be able to:

Code	Course Outcome
MPH 101.1	Students will understand theoretical aspects of UV- Visible Spectroscopy, IR, Spectrofluorimetry, Atomic Absorption and flame emission spectroscopy.
MPH 101.2	The students will learn the practical skills for the analysis of drugs or excipients using various instrumentation techniques.
MPH 101.3	Students will get knowledge about instrumentation, working and applications of Mass and NMR spectroscopy.
MPH 101.4	students impart wide knowledge in students on various chromatographic techniques, electrophoresis methods, Xray Crystallography and Immunoassays
MPH 101.5	The students shall understand and apply the knowledge in Thermal techniques, electrophoresis methods, X-ray Crystallography technique and Immunoassay

**Mapping of course outcomes with program outcomes**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
MPH 101.1	3	1	2	3	-	-	-	-	2	-	-
MPH 101.2	3	-	2	1	-	-	-	-	2	-	-
MPH 101.3	3	1	2	3	-	-	-	-	2	-	-
MPH 101.4	3	2	2	2	-	-	-	-	2	-	-
MPH 101.5	3	2	2	2	-	-	-	-	2	-	-
Total	15	6	10	8	-	-	-	-	10	-	-
Average	3	1.2	2	1.6	-	-	-	-	2	-	-





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## COURSE OUTCOMES OF M. PHARMACY (Pharmaceutical Chemistry)

### First Year M. Pharmacy (SEM-I)

Course Name	MPC102T( Advanced Organic Chemistry I-Theory)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC102T.1	Familiarize themselves with the principles of organic chemistry, including those pertaining to organic intermediates, reaction processes, and organic compound addition reactions.		
MPC102T.2	Recognize the significance and synthetic uses of some important named reactions.		
MPC102T.3	Learn about the functions and uses of protecting groups and synthetic reagents in organic reactions.		
MPC102T.4	Utilize understanding of fundamental organic chemistry to synthesize pharmaceuticals.		
MPC102T.5	Gaining an understanding of every aspect of medicinal chemistry will aid in the development of evidence-based problem solving and critical thinking skills.		



  
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## COURSE OUTCOMES OF M. PHARMACY (Pharmaceutical Chemistry)

### First Year M. Pharmacy (SEM-I)

Course Name	MPC103T( Advanced Medicinal Chemistry-I Theory)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC103T.1	Recognize the various phases and methods used in medicinal chemistry and drug research.		
MPC103T.2	Use a variety of techniques to create and develop novel compounds for biological targets in drugs.		
MPC103T.3	Discover the relationship between the main drug class's structural activity.		
MPC103T.4	Describe the idea of enzyme inhibition and how it's used in chemical research.		
MPC103T.5	Recognize the peptidomimetics method and its uses.		



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## COURSE OUTCOMES OF M. PHARMACY (Pharmaceutical Chemistry)

### First Year M. Pharmacy (SEM-I)

Course Name	MPC104T( Chemistry of Natural Products- Theory)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC104T.1	Recognize the significance of natural products as lead compounds in the development of pharmaceutical drugs.		
MPC104T.2	Discover the structurally varied natural products of the terpenoids, alkaloids, and steroidal classes of flavonoids.		
MPC104T.3	Learn about recombinant DNA technology and its uses in drug discovery.		
MPC104T.4	Utilize your understanding of spectroscopy techniques to characterize natural substances' structures.		
MPC104T.5	Use various techniques for the extraction, separation, and purification of natural active ingredients.		



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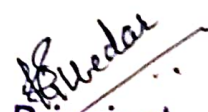
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Course Name	MPC105P ( Pharmaceutical Chemistry- Practical I- Practical)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC105P.1	Synthesize and characterize organic compounds having medicinal importance		
MPC105P.2	Analyze pharmacopeial substances and their formulations using chromatography and a UV-Vis spectrophotometer.		
MPC105P.3	Determine the elements and functional groups present in organic and natural compounds, then use spectroscopic methods to study them.		

Course Name	MPC106S (Seminar/Assignment)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC106S	Learn how to communicate effectively both orally and in writing, through the use of presentation aids, as well as nonverbally.		
MPC106S	Write a well-structured report using technical writing and critical thinking techniques.		
MPC106S	Exhibit your ability to comprehend, decipher, and evaluate technical matters while honing your presentation skills.		



  
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## COURSE OUTCOMES OF M. PHARMACY (Pharmaceutical Chemistry)

### First Year M. Pharmacy (SEM-II)

Course Name	MPC201T( Advanced Spectral Analysis- Theory)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC201T.1	Recognize the fundamentals and instrumentation of hyphenated and spectroscopic analytical methods.		
MPC201T.2	Examine several analytical data sets for use in pharmaceutical applications.		
MPC201T.3	Recognize and use spectroscopic analytical methods to evaluate drug structures.		
MPC201T.4	Utilize a variety of spectrophotometric analytical techniques to conduct both quantitative and qualitative drug analysis.		
MPC201T.5	Acquire expert abilities to manage several spectroscopic and hyphenated analytical methods.		



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## COURSE OUTCOMES OF M. PHARMACY (Pharmaceutical Chemistry)

### First Year M. Pharmacy (SEM-II)

Course Name	MPC202T( Advanced Organic Chemistry II-Theory)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC202T.1	Comprehend and implement green chemistry principles when creating synthetic protocols.		
MPC202T.2	Apply your understanding of catalysis to the creation of pharmaceuticals.		
MPC202T.3	Utilize various synthetic approaches to analyze and produce peptides.		
MPC202T.4	Gain expertise managing a variety of synthetic procedures with contemporary synthetic techniques.		
MPC202T.5	Use the principles of stereochemistry to create asymmetrical synthesis for pharmaceutical excipients and medications.		



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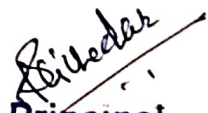


## COURSE OUTCOMES OF M. PHARMACY (Pharmaceutical Chemistry)

### First Year M. Pharmacy (SEM-II)

Course Name	MPC203T( Computer Aided Drug Design- Theory)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC203T.1	Recognize and use the relationship between physicochemical properties and bioactivity to create innovative, personalized medications.		
MPC203T.2	Utilize insights from molecular and quantum mechanics while designing drugs.		
MPC203T.3	By using virtual screening approaches, create a virtual model of how drugs work.		
MPC203T.4	Build a professional skill set to handle data from big database sets for protein and gene annotation.		
MPC203T.5	Use a variety of in silico methods to design and produce pharmaceuticals.		



  
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## COURSE OUTCOMES OF M. PHARMACY (Pharmaceutical Chemistry)

### First Year M. Pharmacy (SEM-II)

Course Name	MPC204T( Pharmaceutical Process Chemistry- Theory)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC204T.1	Recognize and use process chemistry principles in the development and design of pharmaceutical processes.		
MPC204T.2	Apply your understanding of unit operations to the creation of pharmaceutical products.		
MPC204T.3	Develop and optimize pharmaceutical goods with economical, eco-friendly, and effective synthetic methods.		
MPC204T.4	Acquire expert skill sets for designing and refining synthetic strategies.		
MPC204T.5	Recognize and evaluate the effects of industrial safety management in the production of pharmaceuticals.		



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Course Name	MPC205P ( Pharmaceutical Chemistry- Practical II- Practical)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC205P.1	The ability to utilize knowledge of spectroscopic techniques for the analysis of pharmaceutical intermediates and components will be taught to students.		
MPC205P.2	Students who grasp the advanced synthetic protocol conceptually will be able to apply their knowledge and abilities for business purposes.		
MPC205P.3	The ability to use computational tools for drug design and development will be imparted to students.		

Course Name	MPC206S (Seminar/Assignment)	Year of Study	2023-2024
<b>Students will be able to:</b>			
MPC206S	Learn how to communicate effectively both orally and in writing, through the use of presentation aids, as well as nonverbally.		
MPC206S	Write a well-structured report using technical writing and critical thinking techniques.		
MPC206S	Exhibit your ability to comprehend, decipher, and evaluate technical matters while honing your presentation skills.		



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## COURSE OUTCOMES OF M. PHARMACY (Pharmaceutical Chemistry)

### First Year M. Pharmacy (SEM-III)

Course Name	MRM301T( Research Methodology and Biostatistics)	Year of Study	2024-2025
<b>Students will be able to:</b>			
MRM301T.1	To comprehend the numerous facets of biostatistics application in research and development as well as research technique.		
MRM301T.2	To contrast different statistical methods and how they are used in research.		
MRM301T.3	To choose and carry out the relevant parametric and nonparametric tests in accordance with the data, both manually and with the use of statistical software models and tools.		
MRM301T.4	To further explain, using instances, the ethics of pharmaceutical and medical research.		
MRM301T.5	To relate and explain the fundamentals of medical research as well as the CPCSEA criteria for institutions that house laboratory animals.		



  
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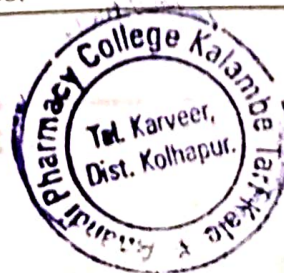


### First Year M. Pharmacy (SEM-III)

Course Name	MJC302 ( Journal Club)	Year of Study	2024-2025
<b>Students will be able to:</b>			
MJC302.1	Stay up to date with new information and spread awareness of recent study discoveries.		
MJC302.2	Develop your capacity for analysis, interpretation, and problem-solving. Apply research to evidence-based practice.		
MJC302.3	Develop your debate abilities and show off your leadership qualities.		

Course Name	RPP303 (Discussion / Presentation (Proposal Presentation))	Year of Study	2024-2025
<b>Students will be able to:</b>			
RPP303.1	Encourage the chosen field of study and talk about the knowledge gained to create backup plans and results for unforeseen events.		
RPP303.2	Discuss the research project's shortcomings as well as fresh ideas, moral dilemmas, and environmental issues.		
RPP303.3	In front of the specialists, present a competent and self-assured defense of their research effort.		

Course Name	RWP304 (Research Work)	Year of Study	2024-2025
<b>Students will be able to:</b>			
RWP304.1	Examine scholarly literature for the proposed study and note published works with supporting data.		
RWP304.2	Develop your ability to solve problems and comprehend research ethics to do autonomous research.		
RWP304.3	By doing research-based experiments on various equipment and learning about the assimilation of data and scientific writing, you can enhance your theoretical and practical abilities.		



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