

## IX. FACULTY OF PHARMACEUTICAL SCIENCES

### UNIVERSITY INSTITUTE OF PHARMACEUTICAL SCIENCES

#### ABOUT THE INSTITUTE

The University Institute of Pharmaceutical Sciences (UIPS) was established in Lahore in 1944 and got re-located on the campus of Panjab University, Chandigarh in 1959. The Institute is one of the most prestigious academic organizations committed and catering to excellence in all the domains of pharmaceutical sciences. More than 3700 research papers, 250 Ph.Ds, 71 books, 56 patents granted, 36 published & filed, numerous national and international awards, and meritorious recognitions to the faculty are some of the notable accomplishments of the Institute. A few of the remarkable discoveries of new medicines have seen the reality of industrial commercialization after their successful technology transfers. Three of the faculty members have been elected as National Presidents of the prestigious Indian Pharmaceutical Congress too. The alumni occupy the highest echelons in industry, research organizations and academia in India and abroad.

In recognition to its contributions in research and teaching, the University Grants Commission (UGC) has accorded the highest level of status to the Institute as Centre of Advanced Study (CAS-II) in Pharmaceutical Sciences, the first university Institution in the country to be granted with this status. Since 2009, the UIPS has been the sole institute of the country to serve as UGC Networking Resource Centre (NRC) to impart training to the pharmacy professionals in frontier and thrust domains of Pharmaceutical sciences. NRC was extended to Phase II for a period of five years from 2017 to 2022. By virtue of its remarkable attainments, UIPS has been constitutively ranked second among the Pharmacy Institutes of the country in NIRF ranking. Institute celebrated its Platinum Jubilee on completion of 75 years in 2019.

#### FACULTY

Designation	Name	Field of Research Specialization	
Professors Emeritus	S.K.Kulkarni	Pharmacology	
Professors	Indu Pal Kaur <b>(Chairperson)</b>	Pharmaceutics	
	O.P. Katare	Pharmaceutics	
	V.R. Sinha	Pharmaceutics	
	Bhupinder Singh Bhoop	Pharmaceutics	
	Renu Chadha	Pharmaceutical Chemistry	
	Kanwaljit Chopra	Pharmacology	
	Anupam Sharma	Pharmacognosy	
	Anil Kumar	Pharmacology	
	Ranju Bansal	Pharmaceutical Chemistry	
	Poonam Piplani	Pharmaceutical Chemistry	
	Maninder Karan	Pharmacognosy	
	Alka Bali	Pharmaceutical Chemistry	
	Assistant Professors	Anurag	Pharmacology
		Neelima Dhingra	Pharmaceutical Chemistry
Jai Malik		Pharmacognosy	
Ashwani Kumar		Pharmacognosy	
Vandita Kakkar		Pharmaceutics	
Amita Sarwal		Pharmaceutics	
Sangeeta Pilkhwal Sah		Pharmacology	
Gurpal Singh (UGC-FRP)		Pharmaceutics	
Ashok Yadav (UGC-FRP)		Pharmaceutical Chemistry	
Sandip V Pawar (UGC-FRP)		Pharmacology	
Ranjana Bhandari (Temp.)	Pharmaceutics		

#### COURSES OFFERED (SEMESTER SYSTEM)

Courses	Seats	Duration	Eligibility/ Admission Criteria
<b>Bachelor of Pharmacy (B.Pharm.):</b>			
B. Pharm.	46+6NRI*+2 Foreign Nationals*	4 years	50% Marks in 10+2 with English, Physics, Chemistry and one of the following subjects: Biology/Biotechnology/Mathematics Admission based on P.U. CET-2021 (U.G.)
<b>MASTER OF PHARMACY (M.PHARM):</b>			
<b>Regular Course</b>			
M. Pharm. in Pharmaceutical Chemistry	Category A: 08 Category B: 02 NRI*: 02	2 Years	50% Marks in B. Pharm. from AICTE/PCI approved Institutions/ Universities with valid GPAT score**. For NRI Category, B. Pharm. with valid GPAT/GRE (General). Admission to all M. Pharm. Courses is made on the basis of combined merit calculated from aggregate marks obtained in B. Pharm. 4-years Course (30% weightage) and GPAT score (70% weightage).
M. Pharm. in Pharmaceutics	Category A: 08 Category B: 02 NRI*: 02		
M. Pharm. in Pharmacognosy	Category A: 04 Category B: 01 NRI*: 01		
M. Pharm. in	Category A: 04		

Pharmacology	Category B: 01 NRI*: 01		
<b>Self-Finance Courses:</b>			
M. Pharm. in Pharmaceutical Analysis	10+2 NRI*+1 Foreign Nationals*		
M. Pharm. in Quality Assurance	10+2 NRI*+1 Foreign Nationals*		

\* Admission eligibility of NRI students will be based on the guidelines issued by Dean International Students, Panjab University, Chandigarh from time to time.

\*\*The Non-GPAT candidates will be considered for admission in the Self-Finance courses, only if the seat(s) remain vacant after admitting all GPAT-qualified candidates, provided that their overall percentage of B. Pharm. marks is not less than 60%.

**Category A**

**Panjab University candidate**

**Category B**

**Candidate from institute other than Panjab University**

Any seat(s) remaining unfilled under Category A will be transferred to Category B, and vice-versa.

**Doctor of Philosophy:** GPAT-qualified students are registered from time to time for Ph.D., depending upon the availability of seats under different projects/schemes/fellowships sponsored by different agencies, including industry. For more information, refer to Rules and Regulations governing Ph. D. degree in Faculty of Pharmaceutical Sciences.

**TITLES OF SYLLABI:** Detailed syllabi available at <https://pucho.ac.in/syllabus.php>

<b>Bachelor of Pharmacy (B. Pharm.)</b>			
<b>Paper</b>	<b>Semester-I</b>	<b>Paper</b>	<b>Semester-II</b>
BP101T	Human Anatomy and Physiology Theory	I- BP201T	Human Anatomy and Physiology II-Theory
BP102T	Pharmaceutical Analysis I-Theory	BP202T	Pharmaceutical Organic Chemistry-I Theory
BP103T	Pharmaceutics I-Theory	BP203T	Biochemistry-Theory
BP104T	Pharmaceutical Inorganic Chemistry Theory	BP204T	Pathophysiology-Theory
BP105T	Communication skills-Theory *	BP205T	Computer Applications in Pharmacy-Theory *
BP106	RBT Remedial Biology	BP206T	Environmental sciences - Theory *
BP106	RMT Remedial Mathematics -Theory*	BP207P	Human Anatomy and Physiology II-Practical
BP107P	Human Anatomy and Physiology- Practical	BP208P	Pharmaceutical Organic Chemistry I-Practical
BP108P	Pharmaceutical Analysis I-Practical	BP209P	Biochemistry-Practical
BP109P	Pharmaceutics I-Practical	BP210P	Computer Applications in Pharmacy-Practical*
BP110P	Pharmaceutical Inorganic Chemistry-Practical		
BP111P	Communication skills -Practical*		
BP112	RBP Remedial Biology -Practical*		
<b>Semester-III</b>		<b>Semester-IV</b>	
BP301T	Pharmaceutical Organic Chemistry II-Theory	BP401T	Pharmaceutical Organic Chemistry III-Theory
BP302T	Physical Pharmaceutics I-Theory	BP402T	Medicinal Chemistry I-Theory
BP303T	Pharmaceutical Microbiology-Theory	BP403T	Physical Pharmaceutics II-Theory
BP304T	Pharmaceutical Engineering-Theory	BP404T	Pharmacology I-Theory
BP305P	Pharmaceutical Organic Chemistry II-Practical	BP405P	Pharmacognosy and Phytochemistry I-Theory
BP306P	Physical Pharmaceutics I-Practical	BP406P	Medicinal Chemistry I-Practical
BP307P	Pharmaceutical Microbiology -Practical	BP407P	Physical Pharmaceutics II-Practical
BP308P	Pharmaceutical Engineering -Practical	BP408P	Pharmacology I-Practical
		BP409P	Pharmacognosy and Phytochemistry I-Practical
<b>Semester-V</b>		<b>Semester-VI</b>	
BP501T	Medicinal Chemistry II-Theory	BP601T	Medicinal Chemistry III-Theory
BP502T	Industrial Pharmacy I-Theory	BP602T	Pharmacology III-Theory
BP503T	Pharmacology II-Theory	BP603T	Herbal Drug Technology -Theory
BP504T	Pharmacognosy and Phytochemistry II-Theory	BP604T	Biopharmaceutics and Pharmacokinetics - Theory
BP505P	Pharmaceutical Jurisprudence -Theory	BP605T	Pharmaceutical Biotechnology -Theory
BP506P	Industrial Pharmacy I-Practical	BP606T	Quality Assurance-Theory
BP507P	Pharmacology II- Practical	BP607P	Medicinal chemistry III-Practical
BP508P	Pharmacognosy and Phytochemistry II-Practical	BP608P	Pharmacology III -Practical
		BP609P	Herbal Drug Technology -Practical
<b>Semester-VII</b>		<b>Semester-VIII</b>	
BP701T	Instrumental Methods of Analysis -Theory	BP801T	Biostatistics and Research Methodology - Theory

BP702T	Industrial Pharmacy II-Theory	BP802T	Social and Preventive Pharmacy-Theory
BP703T	Pharmacy Practice -Theory	BP803T	Pharma Marketing Management-Theory
BP704T	Novel Drug Delivery System -Theory	BP804T	Pharmaceutical Regulatory Science-Theory
BP705P	Instrumental Methods of Analysis - Practical	BP805T	Pharmacovigilance-Theory
BP706S	Practice School*	BP806T	Quality Control and Standardization of Herbsals -Theory
		BP807T	Computer Aided Drug Design-Theory
		BP808T	Cell and Molecular Biology-Theory
		BP809T	Cosmetic Science-Theory
		BP810T	Experimental Pharmacology -Theory
		BP811T	Advanced Instrumentation Techniques Theory
		BP812T	Dietary Supplements and Nutraceuticals
		BP813T	Pharmaceutical Product Development
		BP81W	Project Work

**\*Non University Examination (NUE)**

**Master of Pharmacy (M. Pharm.)**

**M. Pharm. (Pharmaceutics)**

Paper	Semester-I	Paper	Semester-II
MPH101T	Modern Pharmaceutical Analytical Techniques	MPH202T	Advanced Bio-pharmaceutics & Pharmacokinetics
MPH102T	Drug Delivery System	MPH203T	Computer Aided Drug Delivery System
MPH103T	Modern Pharmaceutics	MPH201T	Molecular Pharmaceutics (Nano Tech and Targeted DDS)
MPH104T	Regulatory Affair	MPH204T	Cosmetic and Cosmeceuticals
MPH105P	Pharmaceutics Practical I	MPH205P	Pharmaceutics Practical II
-	Seminar/Assignment	-	Seminar/Assignment

**M. Pharm. (Pharmaceutical Chemistry)**

Paper	Semester-I	Paper	Semester-II
MPC101T	Modern Pharmaceutical Analytical Techniques	MPC201T	Advanced Spectral Analysis
MPC102T	Advanced Organic Chemistry-I	MPC202T	Advanced Organic Chemistry-II
MPC103T	Advanced Medicinal chemistry	MPC203T	Computer Aided Drug Design
MPC104T	Chemistry of Natural Products	MPC204T	Pharmaceutical Process Chemistry
MPC105P	Pharmaceutical Chemistry Practical I	MPC205P	Pharmaceutical Chemistry Practical- II
-	Seminar/Assignment	-	Seminar/Assignment

**M. Pharm. (Pharmacology)**

Paper	Semester-I	Paper	Semester-II
MPL 101T	Modern Pharmaceutical Analytical Techniques	MPL 201T	Advanced Pharmacology II
MPL 102T	Advanced Pharmacology	MPL 102T	Pharmacological and Toxicological Screening Methods-II
MPL 103T	Pharmacological and Toxicological Screening Methods-I	MPL 203T	Principles of Drug Discovery
MPL 104T	Cellular and Molecular Pharmacology	MPL 204T	Experimental Pharmacology practical- II
MPL 105P	Pharmacology Practical I	MPL 205	Pharmacology Practical II
-	Seminar/Assignment	-	Seminar/Assignment

**M. Pharm. (Pharmacognosy)**

Paper	Semester-I	Paper	Semester-II
MPG101T	Modern Pharmaceutical Analytical Techniques	MPG201T	Medicinal Plant biotechnology
MPG102T	Advanced Pharmacognosy	MPG102T	Advanced Pharmacognosy-II
MPG103T	Phytochemistry	MPG203T	Indian system of medicine
MPG104T	Industrial Pharmacognostical Technology	MPG204T	Herbal cosmetics
MPG105P	Pharmacognosy Practical I	MPG205P	Pharmacognosy Practical II
-	Seminar/Assignment	-	Seminar/Assignment

**M. Pharm. (Pharmaceutical Analysis)**

Paper	Semester-I	Paper	Semester-II
MPA101T	Modern Pharmaceutical Analytical Techniques	MPA201T	Advanced Instrumental Analysis
MPA102T	Advanced Pharmaceutical Analysis	MPA202T	Modern Bio-Analytical Techniques
MPA103T	Pharmaceutical Validation	MPA203T	Quality Control and Quality Assurance
MPA104T	Food Analysis	MPA204T	Herbal and Cosmetic Analysis
MPA105P	Pharmaceutical Analysis Practical I	MPA205P	Pharmaceutical Analysis Practical- II
-	Seminar/Assignment	-	Seminar/Assignment

<b>M. Pharm. (Pharmaceutical Quality Assurance)</b>			
<b>Paper</b>	<b>Semester-I</b>	<b>Paper</b>	<b>Semester-II</b>
MQA101T	Modern Pharmaceutical Analytical Techniques	MQA201T	Hazards and Safety Management
MQA102T	Quality Management System	MQA202T	Pharmaceutical Validation
MQA103T	Quality Control and Quality Assurance	MQA203T	Audits and Regulatory Compliance
MQA104T	Product Development and Technology Transfer	MQA204T	Pharmaceutical Manufacturing Technology
MQA105P	Pharmaceutical Quality Assurance Practical-I	MQA205P	Pharmaceutical Quality Assurance Practical II
-	Seminar/Assignment	-	Seminar/Assignment
<b>Course of study for M. Pharm. III Semester (Common for All Specializations)</b>		<b>Course of study for M. Pharm. IV Semester (Common for All Specializations)</b>	
MRM301T	Research Methodology and Biostatistics	Journal club	
	Journal club	Discussion / Presentation	
	Discussion / Presentation (Proposal Presentation)	Research Work, thesis and viva-voce	
	Research Work		

**THRUST AREAS:** Facilities are available for advanced research in Pharmaceutics, Pharmaceutical Chemistry, Pharmacognosy and Pharmacology.

Some of the thrust areas include, search for new chemical entities (synthetic/semi-synthetic/natural), QbD-based development of novel and nanostructured drug delivery systems, advanced pharmacokinetic modeling, crystal engineering of active biomolecules, advanced pharmacological studies related to drug discovery and development, herbal drug standardization and development of novel herbal formulations.

**PLACEMENTS:** The quality and productivity of the trained and skilled human resources by the UIPS has been ranked as *par excellence* in the country. A placement cell has been created under the banner of Panjab University Pharmaceutical Society (PUPS) to provide better job opportunities to our trained students. Recruitment of the students by various industries and academic institutes is carried out through campus interviews. The Institute's students have been placed in various industries located in different parts of the country. The most common recruiters are Procter & Gamble, Dr. Reddy's, IPCA, Novartis, Viatrix, Abott, Zydus-Cadila, Sun Pharma, Panacea Biotec, Dabur, Nicholas-Piramal, Ind-Swift, Heron, Quantum Solutions, Jubilant Pharma, E-valueserve, Root Analysis, Sentiss, Parexel, Biocon, Grey-B, and the likes.

**ALUMNI RELATIONS:** More than 1600 graduates, over 1300 post-graduates and 250 Ph.Ds are the proud alumni of the Institute. Several of these alumni adorn prestigious professional positions in industry, research and academic institutes across the globe including US, Canada and Europe. The UIPS holds an alumni meet every year and acts as an interface for a viable alumni network.