

School of Pharmaceutical Sciences and Technology

Course Structure

Undergraduate Programs:

Bachelor of Science (BSc)

Postgraduate Programs:

Master of Science (MSc)

Curricular structure for First year First Semester undergraduate (BSc) Courses

Pharmaceutical Supply Chain Management

Sl. No.	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
1.	Introduction to Pharmaceutical Technology	3	1	-	4	30	70	100
2.	Pharmaceutical Inorganic Chemistry	3	-	-	3	30	70	100
3.	Fundamentals of Logistics & Supply chain Management	3	1	-	4	30	70	100
4.	Principles of Materials Management	3	-	-	3	30	70	100
5.	English & Communication Skills	2	-	-	2	30	70	100
6.	Computer Applications in Supply Chain	2	-	-	2	30	70	100
7.	Basic Pharmaceutical Techniques Lab (Different Dosage form preparations)	-	-	4	2	30	70	100
8.	Computer Applications in Supply Chain Lab	-	-	4	2	30	70	100
Total		16	2	8	22	240	560	800

Digital Pharmaceutical Management

Sl. No.	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
1.	Introduction to Pharmaceutical Technology	3	-	-	3	30	70	100
2.	Fundamentals of Digital Technologies	3	-	-	3	30	70	100
3.	Principles & Practices of Management in Pharma Organization	3	1	-	4	30	70	100
4.	Human Anatomy and Physiology-I	3	1	-	4	30	70	100
5.	English & Communication Skills	2	-	-	2	30	70	100
6.	Computer Application in Pharma. Management	2	-	-	2	30	70	100
7.	Basic Pharmaceutical Techniques Lab (Different Dosage form preparations)	-	-	4	2	30	70	100
8.	Computer Applications in Pharma Lab	-	-	4	2	30	70	100
	Total	16	2	8	22	240	560	800

Curricular structure for First year First Semester Postgraduate (MSc) Courses

Pharma Supply Chain Management

Sl. No	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
1.	POM & Organizational Behavior in Pharma	3	-	-	3	40	60	100
2.	Pharma Logistics & Supply Chain Management	3	-	-	3	40	60	100
3.	Managerial Economics	3	-	-	3	40	60	100
4.	Business Communication in Pharma	2	-	-	2	40	60	100
5.	Marketing Management	3	-	-	3	40	60	100
6.	Quantitative & Modeling Techniques (Q&MT)	2	-	-	2	40	60	100
7.	Open Electives – I: 1. Logistics for bulk drugs, formulations, vaccines, genes, & organs. 2. Pharma Stability studies 3. Advanced Pharmaceutical	2	-	-	2	40	60	100

	Marketing Management							
8.	Yogic Science & Wellbeing	-	-	2	1	50	-	50
9.	Seminar / Journal Club (Report Writing and Presentation Skills)	-	-	2	1	50	-	50
	Total	18	-	4	20	380	420	800

Digital Pharmaceutical Management

Sl. No.	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
	Introduction to Pharma Sector & Principles of Management	3	-	-	3	40	60	100
1.	Fundamentals of Digital Transformation in Pharma.	2	-	-	2	40	60	100
2.	Pharmaceutical Marketing & Business Analytics	3	-	-	3	40	60	100
3.	Pharma Market Research	2	-	-	2	40	60	100
4.	Managerial Economics & Financial Management in Pharma	3	-	-	3	40	60	100
5.	Pharmaceutical Product and Brand Management	3	-	-	3	40	60	100
6.	Open Electives – I: 1. Essentials of Pharmacoeconomics 2. Supply Chain Management in Pharmaceutical Sector 3. Pharmaceutical Selling & Relation Management	2	-	-	2	40	60	100
7.	Personality Development & Soft Skills	-	-	2	1	50	-	50
8.	Seminar / Journal Club (Case Studies in Pharmaceutical Operations)	-	-	2	1	50	-	50
	Total	18	-	4	20	380	420	800

AI in Pharmaceuticals

Sl. No.	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
1.	Introduction to AI & Machine Learning in Pharma	3	-	-	3	40	60	100
2.	Pharmaceutical Sciences & Drug Development	3	-	-	3	40	60	100
3.	Bioinformatics & Computational Biology	3	-	-	3	40	60	100
4.	Pharmacovigilance & AI in Drug Safety Monitoring	3	-	-	3	40	60	100
5.	Regulatory & Ethical Considerations in AI-Driven Pharma	3	-	-	3	40	60	100
6.	Open Electives – I: 1. Computational Chemistry 2. Digital Twins in Pharma 3. Pharmaceutical Data Science & Big Data Analytics	2	-	-	2	40	60	100
7.	Practical: AI & Data Science Lab	-	-	4	2	40	60	100
8.	Yogic Science & Wellbeing	-	-	2	1	50	-	50
	Total	17	-	6	20	330	420	750

Health Economics and Outcomes Research

Sl. No.	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
1.	Health Economics	3	-	-	3	40	60	100
2.	Clinical Pharmacy	3	-	-	3	40	60	100
3.	Pharmacotherapeutics	3	-	-	3	40	60	100
4.	Pharmacoepidemiology	3	-	-	3	40	60	100
5.	Computer applications in data mining (HEOR)	2	-	-	2	40	60	100

6.	Open Electives – I: 1. Health Informatics 2. Economic evaluation 3. Global Health	2	-	-	2	40	60	100
7.	Clinical Pharmacy (Biochemical Parameter)	-	-	4	2	40	60	100
8.	Pharmacotherapeutics	-	-	4	2	40	60	100
	Total	16	-	8	20	320	480	800

Cosmeceuticals and Nutraceuticals

Sl. No.	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
1.	Human Anatomy & Physiology (Skin, hair, teeth & nail)	3	-	-	3	40	60	100
2.	Principles of Biochemistry & Metabolism	3	-	-	3	40	60	100
3.	Applied Microbiology	2	-	-	2	40	60	100
4.	Introduction to Nutraceuticals & Functional Foods	3	-	-	3	40	60	100
5.	Introduction to Cosmeceutical Formulation Science	3	-	-	3	40	60	100
6.	Open Electives – I: 1. Biotechnology in nutraceuticals & Cosmeceuticals 2. Nano-Technological Applications in Nutraceuticals & Cosmeceuticals 3. Herbal & Ayurveda Formulations	2	-	-	2	40	60	100
7.	Human Anatomy & Physiology (skin, hair, teeth and nail & Biochemistry)	-	-	4	2	40	60	100
8.	Formulations of Nutraceuticals & Cosmeceuticals	-	-	4	2	40	60	100
	Total	16	-	8	20	320	480	800

Pharmaceutical Medicine

Sl. No.	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
1.	Real word evidence & decision making for drug development	3	-	-	3	40	60	100
2.	General and Clinical Pharmacology	3	-	-	3	40	60	100
3.	Drug Discovery and Pharmaceutical Development	3	-	-	3	40	60	100
4.	Analytical Methods and QA/ QC	3	-	-	3	40	60	100
5.	Electives-I: 1. Preclinical (Animal) Studies, Safety and Toxicity Testing 2. Safety pharmacology 3. Long term safety studies in Pharmacology: WHO TRS (Technical Report Series) paper: cancer, carcinogen studies Immunotoxicology & mutation)	2	-	-	2	40	60	100
6.	Practical-I: Preclinical (Animal) Studies, Safety and Toxicity Testing	-	-	4	2	40	60	100
7.	Practical-II: Drug Discovery and Pharmaceutical Development	-	-	4	2	40	60	100
8.	Practical-III: Analytical Methods and QA/ QC	-	-	4	2	40	60	100
	Total	14	-	12	20	320	480	800

Precision and Personalized Medicine

Sl. No.	Subject	L	T	P	Credits	Maximum Marks		
						Internal	External	Total
1.	Fundamentals of Precision Medicine	3	-	-	3	40	60	100
2.	Fundamentals of Biochemistry & Enzymology	3	-	-	3	40	60	100
3.	Basics of Drug Action	3	-	-	3	40	60	100
4.	Introduction to Human Genetics and Genomics	3	-	-	3	40	60	100
5.	Bioinformatics and Structural Biology	3	-	-	3	40	60	100
6.	Open Electives – I: 4. Precision Diagnosis for Precision Medicine 5. AI and Machine Learning for Precision Medicine 6. Application of Precision Medicine to Inflammatory and Autoimmune Disease	2	-	-	2	40	60	100
7.	Practical Laboratory Research Skills-I (Genetics and Genomics (DNA/RNA extraction and sequencing, CRISPR and gene editing, Real-time PCR and ELISA)	-	-	4	2	40	60	100
8.	Yogic Science & Wellbeing	-	-	2	1	50	-	50
	Total	17	-	6	20	330	420	750