



ESTD-2005

The Jamner Taluka Education Society's  
**SHREE SURESHDADA JAIN INSTITUTE OF PHARMACEUTICAL  
 EDUCATION & RESEARCH, JAMNER, -424206 DIST- JALGAON (M.S.)**

- Approved by PCI, New Delhi & DTE, Mumbai
  - Affiliated to K.B.C. N.M.U., Jalgaon
  - Courses available :- B.Pharmacy & M. Pharmacy (Pharmaceutics)
- Ph. : (02580)233478 Fax (02580)233478,  
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**Course Outcome B. Pharmacy (PCI) Syllabus:**

Course code /Course title													
First year B. Pharmacy (Semester- I)	CO	Statements	1	2	3	4	5	6	7	8	9	10	11
<b>BP101T. Human Anatomy &amp; Physiology-I (Theory)</b>	CO1:	Understand the various parts of human body, Structural and functions of cell and classification of tissue and types of tissue.	3	-	3	-	-	3	-	3	3	-	-
	CO2:	Describe the structure and function of skin & Deferent salient features and functions of Joints and also, structural and function of bones.	3	-	3	-	-	3	-	3	3	3	-
	CO3:	Explain the body fluids & composition and function of blood; as well as Lymphatic organ and functions of lymphatic system.	3	-	3	-	-	3	-	3	3	3	-
	CO4:	Gain the knowledge about Structure and functions of sympathetic and parasympathetic nervous system and Structure and functions of Sensory organ and there disorder.	3	-	-	-	-	3	-	3	3	3	-
	CO5:	Understands the anatomy of heart; Structure and function of Cardiovascular system	3	-	3	-	-	3	-	3	3	3	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>



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<b>BP102T. Pharmaceutical Analysis-I</b>	CO1	Explain the Different techniques of analysis; expressing Concentration; 1 <sup>0</sup> & 2 <sup>0</sup> standards. Preparation & standardization of various molar & normal solutions & Explain the source, types, methods of minimizing errors.	0	-	0	0	-	-	-	0	-	-	0
	CO2:	Understands theories of <b>acid base titration</b> , neutralization curves; Solvents, acidimetry and alkalimetry titration and estimation of Sodium benzoate and Ephedrine HCl	0	-	0	0	-	-	-	0	-	-	0
	CO3:	Explain the different method like Mohr's, Volhard's Modified Volhard's, Fajans method. Principle and steps involved in gravimetric analysis.	0	-	0	0	-	-	-	0	-	-	0
	CO4:	Explain the concept of Oxidation and reduction, Types of redox titrations their principles and applications.	0	-	0	0	-	-	-	0	-	-	0
	CO5:	Learn the Electrochemical methods of analysis like conductometry, potentiometer, polarography and understand their application.	0	-	0	0	-	-	-	0	-	-	0
	<b>Average Course outcomes= 0 (Max 3.00)</b>			0	-	0	0	-	-	-	0	-	-



  
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<b>BP103T. Pharmaceutics-I</b>	CO1:	Knowledge of pharmacopoeias also study the dosage forms; Parts of prescription; dose calculations based on age, body weight and body surface area..	3	-	3	-	-	-	3	3	3	-	3
	CO2:	Study the Pharmaceutical calculations; Study the definition classification, official preparations of powders & liquid dosage forms.	3	-	3	3	-	3	-	3	-	-	3
	CO3:	Understand definition, advantages and disadvantages classification and preparation of monophasic and biphasic dosage forms.	3	3	3	3	-	3	3	3	-	-	3
	CO4:	Types and preparation evaluation suppositories. Identify the physical & chemical incompatibilities.	3	-	3	3	-	-	-	3	-	-	3
	CO5:	Composition of ointments, pastes, creams and gels. Evaluation of semi solid dosages forms.	3	3	-	3	-	3	-	3	3	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>



  
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<b>BP104T. Pharmaceutical Inorganic Chemistry</b>	CO1:	Explain the Sources and types of impurities & method of preparation inorganic drugs and pharmaceuticals.	2	2	2	2	-	2	-	-	-	-	-
	CO2:	Explain the different buffers, their preparation and use in pharmaceutical systems; Functions of major physiological ions,	2	2	2	2	-	2	-	2	-	-	-
	CO3:	Explain the medicinal important of pharmaceutical inorganic compound.	2	2	2	2	-	2	-	2	-	-	-
		<b>Average Course outcomes= 2 (Max 3.00)</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>BP105T. Communication Skills</b>	CO1:	Understand the behavioural needs for a pharmacist to function effectively in the areas of pharmaceutical operation	3	-	-	-	-	3	-	3	-	-	-
	CO2:	Basic listening skills, writing skills to communicate effectively and manage team as team player.	-	-	-	-	-	3	3	-	-	-	3
	CO3:	Effectively develop presentation skill with confidence to crack interviews.	-	-	-	-	-	-	-	3	-	-	-
	CO4:	Communication skills in group discussion; effectively stand in group/ businesswise.	-	-	-	3	3	-	-	3	3	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>



  
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<b>BP106T.RBT Remedial biology</b>	CO1:	The student must able to Know the cell biology and classification	3	-	-	-	-	3	-	3	3	3	3
	CO2:	Learn and comprehend various tissue organ system in plant and animal	3	-	-	-	-	3	-	3	3	3	3
	CO3:	Understands and explain anatomy and physiology of animal and plant	3	-	-	-	-	3	-	3	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>BP106T.RMT Remedial Mathematics</b>	CO1:	The student must able to Study the theoretical concept of various topics and their application in pharmacy.	3	-	3	-	-	-	-	-	-	-	-
	CO2:	Solve the different types of pharmaceutical problems by applying theoretical concept.	3	-	3	3	-	-	-	-	-	-	-
	CO3:	Appreciate the important application of mathematics and statistics in pharmacy.	3	-	3	3	-	-	3	-	-	-	-
		<b>Average Course outcomes=3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>



  
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<b>BP107P. Human Anatomy &amp; Physiology-I (Theory)</b>	CO1 :	Explain the microscope parts apply this knowledge to study histology of different tissue.	3	-	-	3	-	3	3	-	3	3	3
	CO2 :	Explain the component of skeletal system and identify and described parts in detail.	3	-	-	-	-	3	3	-	3	3	3
	CO3 :	Methods use in diagnosis of disease using haematological test like bleeding time, clotting time, WBC, RBC, Blood group.	3	-	3	3	-	3	3	-	3	3	3
	CO4 :	Describe the basic principle of cardiovascular system bright to aces heart rate, pulse rate and blood pressure.	3	-	3	3	-	3	3	-	3	3	3
		<b>Average Course outcomes=(Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>



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<b>BP108P. Pharmaceutical Analysis-I</b>	CO1:	The student must able to Perform limit test of Chloride, Sulphate, Iron, and Arsenic.	3	3	-	3	-	-	-	-	-	3	
	CO2:	Preparation and standardization of Sodium hydroxide Sulphuric acid, Sodium thiosulfate, Potassium permanganate, Ceric ammonium sulphate	3	3	-	3	-	-	-	-	-	3	
	CO3:	Perform, Record and calculate Assay with Standardization of Titrant.	3	3	-	3	-	-	-	-	-	3	
	CO4:	To understand electro-analytical methods by determination of Normality	3	3	-	3	-	-	-	-	-	3	
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	
<b>BP109P. Pharmaceutics-I</b>	CO1:	Prepare monophasic, biphasic, powder and semisolid systems.	3	3	3	-	3	3	3	-	-	3	3
	CO2:	Perform experiment according to GLP & record in the journals.	3	3	3	-	3	3	3	-	-	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>



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<b>BP110P. Pharmaceutical Inorganic Chemistry</b>	CO1	Perform qualitative analysis of given inorganic compound.	3	3	-	-	-	-	-	3	-	-	-
	CO2:	Cary out qualitative test of given inorganic compound	3	3	3	-	-	-	-	-	-	-	-
	CO3:	Perform Limit test Chloride, sulphate Iron etc.	3	3	-	3	-	3	-	3	-	-	-
	CO4:	Preparation of inorganic pharmaceuticals	3	3	-	3	-	3	-	3	-	-	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>BP111P. Communication Skills</b>	CO1:	Demonstrate and Apply basic communication & pronunciations skill and advanced learning skill.	3	-	-	3	-	3	3	-	-	-	3
	CO2:	Practice skill and presentation skill.	3	3	3	3	-	3	-	-	-	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>
<b>BP112RBP. Remedial biology</b>	CO1:	Demonstrate microscope, section cutting technique its significance.	3	-	-	3	-	-	3	-	-	3	3
	CO2:	Perform blood group detection, Measurement of blood pressure, Tidal volume.	3	-	-	3	-	-	3	-	-	3	3
	CO3:	Identify microscopy of tissue pertinent steam, root, leaf, seed, fruit, and flower.	3	-	-	3	-	-	3	-	-	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>



*(Signature)*

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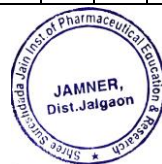
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Second year B. Pharm (Semester-III)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>BP301T. Pharmaceutical organic chemistry-II</b>	CO1:	Explain different reaction and aromatic character, resonance, orientation effect of substituent in benzene and its derivatives.	3	-	3	-	-	-	-	3	-	-	-
	CO2:	Explain and described the method of preparation reaction chemical properties and uses structure and qualitative identification test for phenols, aromatic amines, aromatic acids and hydrocarbon.	3	-	3	-	-	-	-	3	-	-	3
	CO3:	Understand the chemistry of fats and oils along with determine their analytical constants like acid value, Saponification value, iodine value and RM value	3	-	3	-	-	-	-	3	-	-	-
	CO4:	Synthesis, reactions, Structure and medicinal uses polynuclear hydrocarbons.	3	-	3	-	-	-	-	3	-	-	-
	CO5:	Explain different conformational Stabilities & reactions of cyclopropane and cyclobutene	3	-	3	-	-	-	-	3	-	-	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	3	-	3	-	-	-	-	3	-	-	-
<b>BP302T. Physical Pharmaceutics-I</b>	CO1:	Understand the different physicochemical properties of drug molecule in the designing of the dosage form.	3	3	-	3	-	3	3	-	3	-	3
	CO2:	Know the principle of the chemical Kinetic & to use them for stability testing and determination of expiry date of formulation.	3	-	-	3	-	3	3	-	3	-	3
	CO3:	Demonstrate the use of physicochemical properties in the formulation development and evaluation of dosage forms.	3	3	-	3	-	3	3	-	3	-	3
		<b>Average Course outcomes= (Max 3.00)</b>	3	3	-	3	-	3	3	-	3	-	-



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<b>BP303T. Pharmaceutical Microbiology</b>	CO1:	Understand classification and method of identification isolation and cultivation and preservation of various classes of microorganisms.	3	-	-	-	-	3	-	3	3	-	3
	CO2:	Understand the uses of various microscopic technique staining technique and biochemical test for adaptation of microorganism	3	-	-	-	-	3	-	3	3	-	3
	CO3:	Describe various method for control microorganism their evolution and factor affecting their efficiency.	3	-	3	-	-	3	-	3	3	3	3
	CO4:	Describe various method used for sterilization of pharmaceutical product and evaluation of efficiency of method of sterilization.	3	-	3	-	-	3	-	3	3	-	3
	CO5:	Outline cell culture technology and its applications in pharmaceutical industries.	3	-	-	3	-	3	-	3	3	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>
<b>BP304T. Pharmaceutical Engineering</b>	CO1:	Explain the various unit operations used in Pharmaceutical industries.	3	3	3	-	-	-	-	3	-	-	3
	CO2:	Perform various processes involved in pharmaceutical manufacturing process.	3	3	3	-	-	-	-	3	-	-	3
	CO3:	Appreciate and comprehend significance of plant layout design for optimum use of resources like Evaporation, Distillation, Filtration, Centrifugation, Size Separation.	3	3	3	-	-	-	-	3	-	-	3
	CO4:	Described various preventive methods used for corrosion control in pharmaceutical industries	3	3	3	-	-	-	-	3	-	-	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>



  
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<b>BP305P. Pharmaceutical organic chemistry-II</b>	CO1:	Perform experiment involving in laboratory techniques recrystallization & distillation.	3	-	3	3	-	-	-	-	-	-	-
	CO2:	Determine analytical constant like acid value, Saponification value, iodine value of fats and oil	3	3	3	3	-	-	-	3	-	-	-
	CO3:	Explain the theoretical aspect of organic synthesis and perform various organic synthetic reactions.	3	-	3	3	3	3	-	-	-	-	-
	CO4:	Plan, execute and conclude the experiment using various methodologies.	3	-	3	-	-	-	-	-	-	-	-
		<b>Average Course outcomes= (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	-	<b>3</b>	-	-	-
<b>BP306P. Physical Pharmaceutics-I</b>	CO1:	Understand the principle & method for determination various physical parameter of formulation & drug.	3	-	3	3	-	3	-	-	-	3	3
	CO2:	Analyze HLB number of a surfactant by Saponification method.	3	-	3	-	-	-	-	-	-	-	-
	CO3:	Compare and contrast between different methods used in the determination of the same physicochemical parameters.	3	-	3	3	-	3	-	-	-	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	-	<b>3</b>	<b>3</b>	-	<b>3</b>	-	-	-	<b>3</b>	<b>3</b>



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<b>BP307P. Pharmaceutical Microbiology</b>	CO1:	Select and utilize different equipment and processing in experimental microbiology.	3	3	3	-	-	3	3	3	-	3	3
	CO2:	Identify and isolate various microorganisms.	3	3	3	-	-	3	3	3	-	-	3
	CO3:	Perform sterility testing of pharmaceutical products.	3	3	3	-	-	3	3	3	-	-	3
	CO4:	Perform microbiological standardization of Pharmaceuticals.	3	3	3	-	-	3	3	3	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>
<b>BP308P. Pharmaceutical Engineering</b>	CO1:	Impact knowledge of different unit operations process.	3	3	3	3	-	-	-	-	-	-	3
	CO2:	Perform numerical involved in calculating process related determinants.	3	3	3	-	-	-	-	3	-	-	-
	CO3:	Analyze and interpret the data generated from the experiments performed.	3	3	3	-	-	-	-	3	-	-	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>



  
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Second year B. Pharmacy (Semester-IV)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>BP401T. Pharmaceutical organic chemistry-III</b>	CO1:	Basic knowledge and various terminologies involved in stereochemistry.	3	-	-	-	-	-	-	-	-	-	3
	CO2:	Understand nomenclature and classification Synthesis, reactions and medicinal uses heterocyclic compounds/derivatives	3	-	-	-	-	3	-	-	3	-	3
	CO3:	Remembers the reaction Metal hydride, Clemmensen, Birch reduction, Wolff Kishner reduction. Oppenauer- oxidation & Dakin reaction.	3	-	3	-	-	-	-	-	3	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>
<b>BP402T. Medicinal Chemistry-I</b>	CO1:	Correlate the physico-chemical properties of drug with biological response and metabolism of drugs with biological activity	3	-	3	-	-	3	-	-	-	-	-
	CO2:	Explain the chemistry, metabolic pathways & SAR of drug acting on CNS like adrenergic, cholinergic drug.	3	-	3	-	-	3	-	-	-	-	-
	CO3:	Explain the chemistry & SAR of Benzodiazepines, Barbiturates & Phenothiazines	3	-	3	-	-	3	-	-	-	-	-
	CO4:	Explain the chemistry, metabolic pathways & SAR of narcotic & non-narcotic drugs.	3	-	3	-	-	3	-	-	-	-	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>



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<b>BP403T. Physical Pharmaceutics-II</b>	CO1:	Understand the concept of coarse & colloidal dispersion, rheology and powder technology and drug stability.	3	-	-	-	-	3	-	-	3	3	3
	CO2:	Identify the different type of dispersion, rheological properties of the different dosage forms.	3	-	-	-	-	3	-	-	3	3	3
	CO3:	Understand different type of orders of reaction and ways of drug degradation.	3	-	-	-	-	3	-	-	3	3	3
	CO4:	Explain methods for determine particle size by different methods	3	-	-	-	-	3	-	-	3	3	3
	CO5:	Explain with illustration the principles of chemical kinetics & to use for stability testing and determination expiry date of formulations.	3	-	-	-	-	3	-	-	3	3	3
		<b>Average Course outcomes= (Max 3.00)</b>		<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>



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<b>BP404T. Pharmacology-I</b>	CO1 :	Explain terminologies used in pharmacology like synergism agonist, antagonist.	3	-	-	-	-	3	-	3	3	3	3
	CO2 :	Explain the pharmacodynamic & their principles and mechanisms drug action, receptor theories and classification of receptors.	3	-	-	-	-	3	-	3	3	3	3
	CO3 :	Explain the mechanism of drug acting on peripheral nervous system	3	-	-	-	-	3	-	3	3	3	3
	CO4 :	Explain the pharmacology drug use in central nervous system.	3	-	-	-	-	3	-	3	3	3	3
	CO5 :	Apply the knowledge of basic principle of pharmacology in predicting adverse drug reaction, drug interaction and drug development process.	3	3	3	-	3	3	3	3	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>



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<b>BP405T. Pharmacognosy &amp; Phyto chemistry-I</b>	CO1:	Outline the alternative system medicine, Classify the drug according to origin, quality & quantitative control parameter of drug.	3	-	3	-	-	3	3	-	3	3	3
	CO2:	Describe the primary and secondary plant metabolite their biosynthesis and evaluation and therapeutics application.	3	-	3	-	-	3	3	-	3	3	3
	CO3:	Describe the application of plant tissue culture technique to with value to production secondary metabolite	3	-	3	-	-	3	3	-	3	3	3
	CO4:	Cultivation, Collection, Processing and storage of drugs, Factors influencing cultivation of medicinal plants, plant hormones and their applications.	3	-	3	-	-	3	3	-	3	3	3
	CO5:	Detailed study with respect to chemistry, sources, preparation, evaluation, preservation, storage, therapeutic used and commercial utility as Pharmaceutical Aids and Medicines.	3	-	3	-	-	3	3	-	3	3	3
		<b>Average Course outcomes= (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>



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<b>BP406P. Medicinal Chemistry-I</b>	CO1:	Demonstrate skills of handling synthetic procedure and quantitative evaluation technique.	3	-	-	-	-	-	-	-	3	3	3
	CO2:	Synthesize and explain reaction mechanism of medicinally important compounds by using conventional methods.	3	-	3	-	-	-	-	-	3	3	3
	CO3:	Perform quantitative analysis of drug such as Chlorpromazine, Phenobarbitone, Atropine Ibuprofen, Aspirin and furosemide.	3	-	3	-	-	-	-	-	3	3	3
	CO4:	Design the experimental requirement of Determination of Partition coefficient of organic molecule and evaluation.	3	-	3	-	-	-	-	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>BP407P. PhysicalPharmaceutics- II</b>	CO1:	Determine physico chemical properties in the formulation development and, evaluation of dosageform.	3	3	3	3	3	3	-	3	-	3	3
	CO2:	Determine reaction rate constant, order of different reaction.	3	3	3	3	3	3	-	3	-	3	3
	CO3:	Carrying out Accelerated stability studies.	3	3	3	3	3	3	-	3	-	3	3
	CO4:	Find out properties of powder & liquid dosage forms And observe on quality.	3	3	3	3	3	3	-	3	-	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>



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<b>BP408P. Pharmacology-I</b>	CO1:	Explain, Understand, evaluate and apply basic technique related instrument and animal handling for experiment purpose. Route of administration.	3	3	3	3	-	3	3	-	-	3	3
	CO2:	Understand the CPCSEA guideline for ethical animal handling & Care of laboratory animal.	3	3	3	3	-	3	3	-	-	3	3
	CO3:	Explain common laboratory techniques, like blood withdrawal, serum plasma separation, anaesthetics and euthanasia used for animal studies.	3	3	3	3	-	3	3	-	-	3	3
	CO4:	Demonstrate the effect of drugs on animals by simulated experiments.	3	3	3	3	-	3	3	-	-	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>
<b>BP409P. Pharmacognosy &amp; Phytochemistry-I</b>	CO1:	Determination the quantitative microscopy for leaf constant.	3	-	3	-	-	3	-	-	3	3	3
	CO2:	Determine different extractive, ash value, moisture content, swelling index and foaming index by official books.	3	-	3	-	-	3	-	-	3	3	3
	CO3:	Determination of histological feature of plant of diagnostic significance like size of starch grains, calcium oxalate crystals.	3	-	3	-	-	3	-	-	3	3	3
	CO4:	Analysis of crude drugs by chemical tests.	3	-	3	-	-	3	-	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>



  
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Third yr. B. Pharmacy (Semester-V)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>BP501T. Medicinal Chemistry-II</b>	CO1:	Understand the chemistry of drugs with respect to their pharmacological activity.	3	-	-	-	-	-	-	-	-	-	3
	CO2:	Be aware of the drug metabolic pathways, adverse effect and therapeutic value of drugs.	3	-	3	3	-	-	-	-	-	-	3
	CO3:	Know the Structural Activity Relationship of different class of drugs.	3	-	3	-	-	-	-	3	-	-	3
	CO4:	Study the chemical synthesis of selected drugs.	3	-	3	-	-	-	-	3	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>BP502T. Industrial Pharmacy-I</b>	CO1:	Understand the various dosage form and them manufacturing technique.	3	-	-	-	-	3	-	-	-	-	-
	CO2:	All the related and practical aspect of solid, liquid and semisolid dosage form and their development & evaluation.	3	-	3	-	-	3	-	-	-	-	-
	CO3:	Correlate the theoretical knowledge with professional and practical need of pharmaceutical industry.	3	-	-	-	-	3	-	-	-	-	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>



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<b>BP503T. Pharmacology-II</b>	CO1:	Classify the drug use for cardiovascular, urinary and endocrine system and explain their pharmacology.	3	-	-	-	-	3	-	3	3	3	3
	CO2:	Explain autacoids and their drug and role in inflammatory disorder like gout & rheumatoid.	3	-	-	-	-	3	-	3	3	3	3
	CO3:	Explain & understand the concept of bioassay, Types of bioassays, method and applications of with different example of drug.	3	-	-	-	-	3	-	3	3	3	3
	<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>BP504T. Pharmacognosy &amp; Phyto chemistry-II</b>	CO1:	Explain the modern process of extraction by using different method principles, isolation, purification, identification and analysis of diverse phytoconstituents.	3	-	3	-	-	3	3	-	3	3	3
	CO2:	To develop the skill of general method of extraction, evaluation and chemical test of crude drug containing secondary metabolite.	3	-	3	-	-	3	3	-	3	3	3
	CO3:	Establish the characterization & identification of the herbal drugs like Forskolin, Sennoside, Artemisinin, Diosgenine Digoxin.	3	-	3	-	-	3	3	-	3	3	3
	CO4:	Study of utilization of radioactive isotopes in the investigation of Biogenetic studies. development and marketing of pharmaceuticals.	3	-	3	-	-	3	3	-	3	3	3
	<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>



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<b>BP505T. Pharmaceutical Jurisprudence</b>	CO1:	The Pharmaceutical legislations and their implications	3	-	-	-	3	3	-	-	3	3	3
	CO2:	Various Indian pharmaceutical Acts and Laws	3	-	-	-	3	3	-	-	3	3	3
	CO3:	The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals.	3	-	-	-	3	3	-	-	3	3	3
	CO4:	The code of ethics during the pharmaceutical practice.	3	-	-	-	3	3	-	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>
<b>BP506P. Industrial Pharmacy-I</b>	CO1:	Proper use of various equipments in pharmaceutical laboratory related to tablets, capsules and tablet coating.	3	-	3	3	-	3	3	-	-	-	3
	CO2:	Include knowledge of formulation evaluation and labeling of Tablets and capsules	3	3	3	3	-	-	3	3	-	3	3
	CO3:	Use necessary tools and equipment for preparation as per SOP	3	3	3	3	3	3	3	3	3	3	3
	CO4:	Describe the evaluation criteria for glass containers as per I.P.	-	3	3	3	3	3	-	3	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>



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<b>BP507P. Pharmacology-II</b>	CO1:	Understand methods of blood collection from experimental animals and various routes of drug administration and experimental principles for experiments.	3	-	3	3	-	3	3	-	3	3	3
	CO2:	Describe the composition of physiological salt solutions and basic tools used in pharmacology	3	-	3	3	-	3	3	-	3	3	3
	CO3:	Perform experiments using different isolated preparations and describe the effect of different drugs on the concentration response curve, interpret the action of different drugs using simulation software.	3	-	3	3	-	3	3	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>BP508P. Pharmacognosy &amp; Phyto chemistry-II</b>	CO1:	Identify crude drugs based on morphological and microscopic characters and assign biological source chemical constituents and therapeutic uses.	3	-	3	-	3	3	-	-	3	3	3
	CO2:	Apply the knowledge of microscopic characters for powder drug formulation.	3	-	3	-	3	3	-	-	3	3	3
	CO3:	Understanding the processes behind the extraction and isolation of alkaloids.	3	-	3	-	3	3	-	-	3	3	3
	CO4:	Perform TLC on herbal extract.	3	-	3	-	3	3	-	-	3	3	3
	CO5:	Analysis of crude drugs by chemical tests.	3	-	3	-	3	3	-	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>



  
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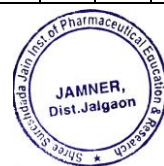
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Third yr B. Pharmacy	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>BP601T. Medicinal Chemistry-III (VI-SEM)</b>	CO1:	Understand the chemistry of drugs such as B-lactam antibiotics in relation to their pharmacological activity.	3	-	3	-	-	-	-	3	-	-	3
	CO2:	Learn the metabolism, adverse effects and therapeutic value of drugs such as antibiotics and anti-malarial.	3	-	3	-	-	-	-	3	-	-	3
	CO3:	Know the Structural Activity Relationship of different class of drugs like anti-tubercular agents, Quinolones & antiviral agents.	3	-	3	-	-	-	-	3	-	-	3
	CO4:	Understand the importance of metabolism, SA& IUPAC of sulphonamides and sulfones.	3	-	3	3	-	-	-	3	-	-	3
	CO5:	Understand the importance of drug design and different techniques of drug design.	3	-	3	3	-	-	-	-	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>
<b>BP602T. Pharmacology-III</b>	CO1:	Understand the mechanism of action of drugs and its relevance in the treatment of various infectious diseases.	3	-	3	-	-	3	-	3	3	3	-
	CO2:	Comprehend the principles of toxicology and treatment of various poisoning.	3	-	3	-	-	3	-	3	3	3	-
	CO3:	Appreciate correlation of pharmacology with related medical sciences.	3	-	3	-	-	3	-	3	3	3	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>		<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>



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<b>BP603T. Herbal Drug Technology</b>	CO1:	Understand raw material as source of herbal drugs from cultivation to herbal drug product.	3	-	3	-	-	3	3	-	3	3	3
	CO2:	Know the WHO and ICH guidelines for evaluation of herbal drugs.	3	-	3	-	-	3	3	-	3	3	3
	CO3:	Know the herbal cosmetics, natural sweeteners, nutraceuticals	3	-	3	-	-	3	3	-	3	3	3
	CO4:	Appreciate patenting of herbal drugs, GMP.	3	-	3	-	-	3	3	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>BP604T. Biopharmaceutics &amp; Pharmacokinetics</b>	CO1:	Understand the basic concepts and their importance in biopharmaceutics and pharmacokinetics.	3	3	3	3	3	3	3	3	3	3	
	CO2:	Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination.	3	-	3	-	-	3	3	-	3	3	3
	CO3:	To understand the concepts of bioavailability and bioequivalence of drug products and their significance.	3	3	3	3	3	3	3	3	3	3	3
	CO4:	Understand various pharmacokinetic parameters, their significance & applications in Pharmaceutical Industries.	3	3	3	3	3	3	3	3	3	3	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>



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<b>BP605T. Pharmaceutical Biotechnology</b>	CO1:	Understanding the importance of Immobilized enzymes in	3	-	-	3	-	-	3	-	3	3	3
	CO2:	Genetic engineering applications in relation to production of pharmaceuticals.	3	-	-	3	-	-	3	-	-	3	3
	CO3:	Importance of Monoclonal antibodies in Industries	3	-	-	-	-	-	-	-	-	3	3
	CO4:	Appreciate the use of microorganisms in fermentation technology	3	-	-	3	-	-	3	-	-	3	3
			<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	-	-	<b>3</b>	-	-	<b>3</b>	-	-	-
<b>BP606T. Quality Assurance</b>	CO1:	Understand the cGMP aspects in a pharmaceutical industry	3	3	3	3			-	-	3	-	-
	CO2:	To appreciate the importance of documentation	-	3	3		3	3	-	-	3	3	-
	CO3:	Understand the scope of quality certifications applicable to pharmaceutical industries	-	3	3	3	-	-	-	-	-	-	3
	CO4:	Be aware of the responsibilities of QA & QC departments	3	3	3	3	-	-	-	-	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	-	-	-	-	-	-	<b>3</b>



  
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<b>BP607P. Medicinal Chemistry-III</b>	CO1:	Preparation of medicinally important compounds or intermediates by Microwave irradiation technique.	3	3	3	-	3	-	-	-	-	-	3
	CO2:	Perform assay on drug.	3	3	3	-	3	-	-	-	-	-	3
	CO3:	Apply the principle of green chemistry.	3	3	3	-	3	-	-	-	-	-	3
	CO4:	Determination of physicochemical properties using drug design software.	3	3	3	3	3	-	-	-	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	-	-	-	-	-	<b>3</b>
<b>BP608P. Pharmacology-III</b>	CO1:	Problem based on dose calculation in pharmacological experiment and calculation of pharmacokinetic parameter like Student's t test, ANOVA, Chi square test, Wilcoxon Signed Rank test.	3	3	3	-	3	3		3	3	-	-
	CO2:	The effect of drugs on animals by simulated software's.	3	3	3	-	-	3	3	3	3	-	-
	CO3:	Determination of different toxicity study.	3	3	3	-	-	3	3	3	3	-	-
	CO4:	Different biostatistics methods in experimental pharmacology.	3	3	3	-	-	3	3	3	3	-	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	-	-	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	-	-



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<b>BP609P. Herbal Drug Technology</b>	CO1:	Perform preliminary photochemical screening of crude drugs.	3	-	3	-	-	3	3	-	3	3	3
	CO2:	Understanding the process behind extraction and isolation of alkaloids.	3	-	3	-	-	3	3	-	3	3	3
	CO3:	Analysis of herbal drugs from recent pharmacopoeias	3	-	3	-	-	3	3	-	3	3	3
	CO4:	Determine Phenol content, Aldehydes content etc.	3	-	3	-	-	3	3	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>



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Final yr. B. Pharmacy (Semester-VII)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>BP701T. Instrumental Method Analysis</b>	CO1:	Explain and illustrate the theory and application of UV Visible spectroscopy, Fluorimetry, IR spectroscopy, Flame Photometry, Atomic absorption spectroscopy, HPLC, GC, TLC, Paper chromatography, Ion exchange, Affinitychromatography, Gel chromatography.	3	3	3	3	-	3	-	3	-	-	3
	CO2:	Perform mathematical calculation to obtain quantitative result from UV & chromatography parameter.	-	3	3	3	-	-	-	3	-	-	-
	CO3:	Understand the chromatographic separation and analysis of drugs.	3	3	3	3	-	3	-	3	-	-	3
	CO4:	Recall the terminologist associated with spectroscopy & chromatography.	3	3	3	3	-	3	-	3	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>BP702T. Industrial Pharmacy-II</b>	CO1:	Know the process of pilot plant and scale up of pharmaceutical dosage forms.	3	3	3	3		3	3	-	-	3	3
	CO2:	Understand the process of technology transfer from lab scale to commercial batch.	3	3	3	3		3	3	-	-	3	3
	CO3:	Know different Laws and Acts that regulate pharmaceutical industry.	3	3	3	3	3	3	3	-	-	3	3
	CO4:	Understand the approval process and regulatory requirements for drug products.	3	3	3	3	3	3	3	-	-	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>



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<b>BP703T. Pharmacy Practice</b>	CO1:	Understand the management of hospital, community, clinical pharmacy and therapeutic committee.	3	3	3	3	-	3	3	-	-	3	-
	CO2:	ADR classification, therapeutic drug monitoring, drug store management and inventory control.	3	-	3	-	3		3	-	-	-	-
	CO3:	Précis the OTC medication, investigational use of drug and interpretation of clinical lab tests.	3	3	-	3	-	-	-	-	-	-	3
	CO4:	Understanding of drug delivery systems, prescribed drug orders and communication skills in practical situations.	3	-	-	-	-	-	-	-	-	-	-
	CO5:	Evaluation of patient counselling and Rational drug therapy	-	3	3	3	-	3	-	-	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>BP704T. Novel Drug Delivery System</b>	CO1:	To understand various approaches for the development of new drug delivery systems.	3	3	3	3	3	3	3	3	3	3	3
	CO2:	To understand the criteria for selecting drugs and polymers for the development	3	3	3	3	3	3	3	3	3	3	3
	CO3:	New drug delivery systems, their design and evaluation.	3	3	3	3	3	3	3	3	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>



  
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<b>BP705P. Instrumental Method Analysis</b>	CO1:	Perform analyze and determine and report the content of drug by using <b>UV Visible spectroscopy</b> , Fluorimetry, <b>IR spectroscopy</b> , Flame Photometry, Atomic absorption spectroscopy, colourometry and turbidometry.	-	3	3	3	-	3	-	3	-	-	3
	CO2:	The separation of mixture component by applying separation principle on chromatographic technique.	-	3	3	3	-	3	-	3	-	-	3
	CO3:	Elaborate the Demonstration experiment on HPLC' Gas Chromatography.	3	3	3	3	-	3	-	3	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>Practice school</b>	CO1:	Development of skill in the modern tools.	3	-	-	3	-	-	-	-	-	-	3
	CO2:	Acquire skill of documentation and record keeping.	3	-	-	3	-	-	-	-	-	-	3
	CO3:	Plan academic carrier, and personal interests via research experiences.	3	-	-	3	-	-	-	-	-	-	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>



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Final yr. B. Pharmacy (Semester-VIII)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>BP801T. Biostatistics and Research Methodology</b>	CO1:	Understand various approaches in Biostatistics & Mean, Median, Mode used in pharmaceutical field	3	-	3	-	-	-	3	-	3	3	3
	CO2:	Know the operation of M.S. Excel, SPSS, R and MINITAB, DoE (Design of Experiment)	3	3	3	3	-	-	-	-	-	3	3
	CO3:	Know the various statistical techniques to solve statistical problems.	3	3	3	3	-	-	-	-	-	3	3
	CO4:	Appreciate statistical techniques in solving the problems	3	3	3	3	-	-	-	-	-	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>
<b>BP802T. Social and Preventive Pharmacy</b>	CO1:	Gain a higher consciousness/awareness of current issues related to health and pharmaceutical issues in the country and around the world.	3	-	3	-	-	3	3	3	3	3	3
	CO2:	A critical way of thinking is based on current healthcare developments.	3	3	-	3	3	-	3	3	3	3	3
	CO3:	Evaluate alternative ways of solving health related problems and pharmaceutical problems.	-	3	-	3	3	-	3	3	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>



  
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<b>BP804ET.</b>	CO1:	Learn about the drug discovery and development process	3	-	-	-	3	-	-	-	3	3	3
	CO2:	Know the regulatory authorities and agencies that regulate production and sales of pharmaceuticals.	3	-	-	-	3	-	-	-	3	3	3
	CO3:	Know the regulatory approval process and them Indian and registration international markets.	3	-	-	-	3	-	-	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	-	-	-	<b>3</b>	-	-	-	<b>3</b>	<b>3</b>	<b>3</b>
<b>BP806ET.</b>	CO1:	Know the WHO guidelines for quality control of herbal medicines.	3	-	-	-	3	-	-	-	3	3	3
	CO2:	Learn about quality assurance in the herbal medicine industry.	3	-	-	-	3	-	-	-	3	3	3
	CO3:	Regulatory approval process and their registration in India and International markets.	3	-	-	-	3	-	-	-	3	3	3
	CO4:	Appreciate EU and ICH guidelines for quality control of herbal medicines.	3	-	-	-	3	-	-	-	3	3	3
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	-	-	-	<b>3</b>	-	-	-	<b>3</b>	<b>3</b>	<b>3</b>



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 Website. : www.ssjiiper.com Email :- ssjiiper\_jamner@rediffmail.com

First yr. M. Pharmacy (Semester-I)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>MPH 101T Modern Pharmaceutical Analytical Techniques</b>	CO1:	Know about analysis of various drugs in single and combination dosage forms.	2	2	-	-	-	-	3	1	1	-	-
	CO2:	Study the chromatographical and spectroscopical method of analysis.	3	3	3	-	1	-	2	1	-	-	-
	CO3:	Know about advanced analytical instrumental techniques for identification, characterization of drugs	3	3	3	-	-	-	3	2	-	-	-
	CO4:	Understand the analytical instrumental techniques for quantification of drugs.	3	2	3	-	-	1	3	2	-	-	-
		<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>
<b>MPH 102 T Drug Delivery System</b>	CO1:	Understand the various approaches for development of novel drug delivery systems	2	-	1	-	-	-	1	2	2	1	-
	CO2:	Know the criteria for selection of drugs and polymers for the development of delivering system.	3	1	2	-	-	-	1	1	1	-	-
	CO3:	Know about Controlled Release formulations.	2	1	-	-	-	2	-	-	1	-	-
	CO4:	Get an idea about formulation and evaluation of Novel drug delivery systems.	3	2	2	-	1	1	2	1	1	-	-
		<b>Average Course outcomes= 2 (Max 3.00)</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>-</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>-</b>



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First yr. M. Pharmacy (Semester-I)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>MPH 103 T Modern Pharmaceutics</b>	CO1:	Understand the various approaches for development of novel drug delivery systems.	3	2	2	-	1	1	1	1	2	-	-
	CO2:	Know the criteria for selection of drugs and polymers for the development of delivering system.	3	2	3	-	1	1	1	-	-	-	-
	CO3:	Know about Controlled Release formulations.	2	1	1	-	2	1	-	-	-	-	-
	CO4:	Get an idea about formulation and evaluation of Novel drug delivery systems.	3	2	3	-	1	1	-	-	-	-	-
			<b>Average Course outcomes= 2 (Max 3.00)</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>-</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>-</b>
<b>MPH 104T Regulatory Affairs</b>	CO1:	Know the Concepts of innovator and generic drugs, drug development process	2	2	-	-	1	1	-	-	1	-	-
	CO2:	Learn about Regulatory guidance's and guidelines for filing and approval process	3	2	-	1	2	-	-	-	-	-	1
	CO3:	Get the knowledge about Preparation of Dossiers and their submission to regulatory agencies in different countries	3	2	-	1	2	-	-	-	-	-	1
	CO4:	Learn the Post approval regulatory requirements for actives and drug products.	3	2	1	-	2	-	-	-	-	-	1
			<b>Average Course outcomes= 2 (Max 3.00)</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>-</b>



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First yr. M. Pharmacy (Semester-II)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>MPH 201T Molecular Pharmaceutics (Nano Technology &amp; Targeted DDS) (NTDS)</b>	CO1:	Learn about various approaches for development of novel drug delivery systems.	2	1	1	2	1	-	-	-	2	-	-
	CO2:	Understand about drug targeting	3	2	2	-	-	1	1	-	2	-	-
	CO3:	Study the criteria for selection of drugs and polymers for the development of NTDS	3	2	1	-	-	1	-	-	-	-	-
	CO4:	Study the formulation and evaluation of novel drug delivery systems	3	2	2	-	-	1	1	-	2	-	-
			<b>Average Course outcomes= 2 (Max 3.00)</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>-</b>	<b>2</b>	<b>-</b>
<b>MPH 202T Advanced Biopharmaceutics &amp; Pharmacokinetics</b>	CO1:	Understand the concepts in biopharmaceutics and pharmacokinetics.	3	1	-	-	1	1	-	-	2	-	-
	CO2:	Study the critical evaluation of biopharmaceutic studies involving drug product equivalency	3	3	-	-	1	1	1	-	2	-	-
	CO3:	Design and evaluate the dosage regimens of the drugs using pharmacokinetic and biopharmaceutic parameters.	3	2	1	-	1	1	1	-	2	-	-
	CO4:	Get an idea about potential clinical pharmacokinetic problems and application of basics of pharmacokinetic	3	3	1	1	1	-	-	-	2	-	-
			<b>Average Course outcomes= 2 (Max 3.00)</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>-</b>	<b>2</b>	<b>-</b>



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First yr. M. Pharmacy (Semester-II)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>MPH 203T Computer Aided Drug Development</b>	CO1:	Know about Computational Modeling of Drug Disposition	1	1	3	-	-	-	2	1	-	-	-
	CO2:	Study the use of Computers in Preclinical Development	2	2	3	-	-	-	3	1	-	-	-
	CO3:	Get a knowledge about Optimization Techniques in Pharmaceutical Formulation Computers in Market Analysis	-	2	3	1	-	-	3	1	-	-	-
	CO4:	Know about Artificial Intelligence (AI), Robotics and Computational fluid dynamics (CFD)	-	2	3	1	-	-	3	1	-	-	-
		<b>Average Course outcomes= 2 (Max 3.00)</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>1</b>	-	-	<b>3</b>	<b>1</b>	-	-	-
<b>MPH 204T Cosmetics and Cosmeceuticals</b>	CO1:	Know the Key ingredients used in cosmetics and cosmeceuticals	3	2	-	1	-	-	-	-	-	-	-
	CO2:	Know about current technologies in the market for development of cosmetics and cosmeceuticals	2	1	-	-	-	-	-	-	-	-	-
	CO3:	Know about Various key ingredients and basic science to develop cosmetics and cosmeceuticals	2	2	-	-	-	1	-	-	-	-	-
	CO4:	Get a scientific knowledge to develop cosmetics and cosmeceuticals with desired Safety, stability, and efficacy.	2	3	-	-	-	1	-	-	-	-	-
		<b>Average Course outcomes= 2 (Max 3.00)</b>	<b>3</b>	<b>2</b>	-	-	-	<b>1</b>	-	-	-	-	-



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Second year. M. Pharmacy (Semester-III)	CO	Statement	1	2	3	4	5	6	7	8	9	10	11
<b>MRM 301T Research Methodology &amp; Biostatistics</b>	CO1:	Know about the research and some basis things about research.	3	2	1	-	1	-		-	-	-	-
	CO2:	Learn about statistical test for analysis of samples.	3	2	3	-	1	-		-	-	-	-
	CO3:	Understand about informed consent, ethics conflicts of interest and online business practices committees,	2	2	2	-	3	-	3	-	-	3	3
	CO4:	Study about the CPCSEA guidelines.	2	2	3	-	3	-	3	-	-	-	-
	CO5:	Know about the basic principles for all medical research.	3	2	2	-	-	-	1	-	-	-	-
			<b>Average Course outcomes= 3 (Max 3.00)</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>



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