DATTA MEGHE COLLEGE OF PHARMACY

PROGRAM: B.PHARMACY COURSE OUTCOME-PROGRAM OUTCOME MAPPING

C N	Classic	G C. 1	0	Course Outcome	00.1					Progra	m Outc	omes (F	20)						
Sr. N	. Class	Course Code	Course	No.	Course Outcomes	P0-1	P0-2	P0-3	P0-4	P0-5	P0-6	P0-7	PO-8	P0-9	PO-10	P0-11			
1	B.Pharm Sem-I	BP101T	Human Anatomy and Physiology - I	BP101T-C01	Explain the gross morphology, structure and functions of various organs of the human body	3	3	0	0	3	2	0	0	0	0	0			
			(Theory)	BP101T-C02	Describe the various homeostatic mechanisms and their imbalances.	3	3	0	0	3	2	0	0	0	0	0			
				BP101T-C03	Identify the various tissues and organs of different systems of human body.	3	3	0	0	3	2	0	0	0	0	0			
				BP101T-C04	Perform the various experiments related to special senses and nervous system.	3	3	0	0	3	2	0	0	0	0	0			
				BP101T-C05	Demonstrate understanding of coordinated working pattern of different organs of each system	3	3	0	0	3	2	0	0	0	0	0			
2		BP102T	BP102T	BP102T	BP102T	Pharmaceutical Analysis - I (Theory)	BP102T-C01	Describe the Different techniques of analysis, prepare and standardize various solutions and demonatrate understanding of methods used for expressing concentration.	3	1	0	0	3	2	0	0	0	0	0
				BP102T-C02	Explain primary and secondary standard, describe the significance of quality in pharmaceutical analysis.	3	2	0	0	3	2	0	0	0	0	0			
				BP102T-C03	Explain Theories, classification of acid base titrations involving in titrations of acids and bases.	2	1	0	0	3	2	0	0	0	0	0			
				BP102T-C04	Demonstrate the understanding of neutralization curves.	3	1	0	0	3	2	0	0	0	0	0			
				BP102T-C05	Explain non aqueous titration, acidimetry and alkalimetry titration.	3	2	0	0	3	2	0	0	0	0	0			
				BP102T-C06	Demonstrate the understanding of estimation of Sodium benzoate and Ephedrine HCl.	3	2	0	0	3	2	0	0	0	0	0			
				BP102T-C07	Describe basic Principle involved in different methods of precipitation titration and their applications.	3	2	0	0	3	2	0	0	0	0	0			
				BP102T-C08	Explain Principle, method and applications of complexometric titration & diazotization titration.	3	2	0	0	3	2	0	0	0	0	0			
				BP102T-C09	Demonstrate the understanding of procedure involved in gravimetric analysis, describe applications of gravimetry in pharmaceutical analysis.	3	2	0	0	3	2	0	0	0	0	0			
				BP102T-C010	Demonstrate adequate knowledge on basic principles and techniques of redox titrations and its application in pharmaceutical analysis.	3	2	0	0	3	2	0	0	0	0	0			
				BP102T-C011	Explain principle, electrodes used and pharmaceutical application of electrochemical methods of analysis.	3	2	0	0	3	2	0	0	0	1	0			
3		BP103T	Pharmaceutics - I (Theory)	BP103T-C01	Explain the Pharmacy Profession in India. Demonstrate understanding of the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations.	3	3	0	0	3	2	0	0	0	0	0			
				BP103T-C02	Define Prescription, parts of prescription and demonstrate understanding of the professional way of handling the prescription	3	2	0	0	3	2	0	0	0	0	0			
				BP103T-C03	Define Posology and explain factors affecting posology. Calculate pediatric dose based on age, body weight and body surface area	3	3	0	0	3	2	0	0	0	0	0			
				BP103T-CO4	Define, classify and describe advantages and disadvantages of simple and compound powders. Explain excipients used in liquid dosage forms, solubility enhancement techniques and advantages and disadvantages of liquid dosage forms.	3	3	0	0	3	2	0	0	0	0	0			
				BP103T-C05	Define monophasic and biphasic liquids. Demonstrate understanding of preparation of monophasic (Gargle, Mouthwash, eardrop, nasal drop, enema, syrup etc.) and biphasic (suspension and emulsions) liquids.	3	3	0	0	3	2	0	0	0	0	0			
				BP103T-C06	Define and classity suppositories and semi-solid dosage forms. Demonstrate understanding of preparation and evaluation of suppositories and semi-solid dosage forms (Ointment, Paste, Cream and Gel).	3	3	0	0	3	2	0	0	0	0	0			
4		BP104T	Pharmaceutical Inorganic Chemistry (Theory)	BP104T-C01	Explain the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals	3	3	0	0	3	2	1	0	0	0	0			
				BP104T-C02	Demonstrate understanding of the medicinal and pharmaceutical importance of inorganic compounds	3	3	0	0	3	2	0	0	0	0	0			
				BP104T-C03	Explain buffers in pharmaceutical systems, their preparation and stability. Buffered isotonic solution measurement of tonicity and methods of adjusting isotonicity.	3	3	0	0	3	2	0	0	0	0	0			
				BP104T-C04	Explain functions of major physiological ions, and electrolytes used in replacement therapy.	3	3	0	0	3	2	0	0	0	0	0			
				BP104T-C05	Explain Dentifrices, role of fluoride in the treatment of dental caries, and Desensitizing agents.	3	3	0	0	3	2	0	0	0	0	0			
				RP104T-CO6	Describe General methods of preparation, and assay for the gastrointestinal agents (Acidifiers, Antacids, Cathartics, and Antimicrobials)	3	3	0	0	3	2	0	0	0	0	0			
				BP104T-C07	Describe General methods of preparation, and assay for expectorants, emetics, haematinics, antidotes and astringents	3	3	0	0	3	2	0	0	0	0	0			

				Explain radioactivity, measurement of radioactivity, and properties of α , β and γ radiations. Describe storage conditions, precautions and pharmaceutical applicatons of radioactive substances.	3	3	0	0	3	2	0	0	0	0	0
5	BP105T	Communication Skills (Theory)	BP105T-C01	Demonstrate understanding of the behavioral needs for a Pharmacist to function effectively in the areas of pharmaceutical operation	3	1	0	3	3	3	1	0	3	0	0
			BP105T-C02	Communicate effectively (Verbal and Non Verbal)	0	0	3	3	3	3	0	0	3	0	0
			BP105T-C03	Effectively manage the team as a team player	0	0	3	3	3	3	0	0	3	0	0
			BP105T-C04	Develop interview skills, leadership qualities and essentials	0	0	3	3	3	1	0	0	3	0	0
6	BP106RBT	Remedial Biology (Theory)		Explain the classification and salient features of five kingdoms of life	3	2	0	0	3	2	0	0	0	0	0
· ·	DI TOOKDI	Remedial Biology (Theory)		Demonstrate understanding of the basic components of anatomy & physiology of plant	3	2	0	0	3	2	0	0	0	0	0
			BP106RBT-C03	Demonstrate understanding of the basic components of anatomy & physiology or plant Demonstrate understanding of the basic components of anatomy & physiology animal with special reference to human	3	2	0	0	3	2	0	0	0	0	0
7	BP106RMT	Remedial Maths (Theory)	BP106RMT-CO1	reference to numan											
,	DI TOURINI	Remedia Madis (Theory)		Identify and distinguish partial fractions, Express complex looking algebraic equations in terms of two manageable terms. Demonstrate understanding of application of logarithm to solve pharmaceutical problems. Describe characteristics of different function types and convert between different representations and algebraic forms to analyze and solve meaningful problems. Compute limits, derivatives, and definite & indefinite integrals of algebraic, logarithmic and exponential functions.	2	0	0	0	0	0	0	0	0	0	1
			BP106RMT-CO2	Solve applied problems using matrices, differentiation and integration.	2	0	0	0	0	0	0	0	0	0	1
			BP106RMT-CO3	Express equation of straight line and identify condition of perpendicular or parallel of two the lines.	1	0	0	0	0	0	0	0	0	0	1
			BP106RMT-CO4	Demonstrate understanding of use of differential equation and Laplace equation in solving chemical kinetic and pharmacokinetic equations	3	0	0	0	0	0	0	0	0	0	1
8	BP107P	Human Anatomy and Physiology - I	BP107P-C01	Demonstrate understanding of basic components and working of compound microscope.	3	0	0	0	2	2	0	0	0	0	0
		(Practical)	BP107P-CO2	Perform and interpret microcroscopic study of epithelial and connective tissue, muscular and nervous tissue	3	1	1	0	3	2	0	1	0	0	0
			BP107P-C03	Identify axial and appendicular bones	3	1	0	0	3	2	0	0	0	0	0
			BP107P-CO4	Enumerate WBC count and total RBC count. Explain the principle and purpose of WBC and RBC count.	3	2	0	0	3	2	0	0	0	0	0
			BP107P-C05	Determine bleeding time and explain factors affecting bleeding time. Determine clotting time and explain significance of clotting time.	3	2	1	0	3	2	0	1	0	0	0
			BP107P-C06	Estimate hemoglobin content. Explain the structure and functions of hemoglobin.	3	2	1	0	3	2	0	1	0	0	0
			BP107P-C07	Determine blood group and explain the significance of determination of blood group.	3	1	1	0	3	2	0	1	0	0	0
				Determine heart rate and pulse rate. Discuss importance of knowing one's heart beat and pulse rate. Record blood pressure and define diastolic and systolic blood pressure.	3	2	1	0	3	2	0	1	0	0	0
			BP107P-C09	Determine erythrocyte sedimentation rate and explain its signifcance.	3	2	1	0	3	2	0	1	0	0	0
9	BP108P	Pharmaceutical Analysis - I (Practical)	BP108P-C01	Determine chloride, sulphate, Iron, and arsenic content in pharmaceutical substances.	3	2	1	0	3	2	1	1	0	0	0
			BP108P-CO2	Prepare and standardize Sodium hydroxide, Sulphuric acid, Sodium thiosulfate, Potassium permanganate and ceric ammonium sulphate.	3	1	1	0	3	2	1	1	0	0	0
				Analyze the purity of Ammonium chloride, ferrous sulphate, Copper sulphate, Calcium gluconate, Hydrogen peroxide, Sodium benzoate, Sodium Chloride.	3	2	1	0	3	2	1	1	0	0	0
			BP108P-C04	Determine normality of acids and bases by conductometry and potentiometry.	3	0	1	0	3	2	1	1	0	1	0
10	BP109P	Pharmaceutics - I (Practical)	BP109P-C01	Prepare various conventional dosage forms (Syrup, Elixir, Linctus, Solutions, Suspension, Emulsion, Powders and Granules, Suppositories, Semisolids, Gargles and Mouthwash.)	3	3	1	0	3	2	0	1	0	0	0
11	BP110P	Pharmaceutical Inorganic Chemistry (Practical)	BP110P-C01	Perform limit test/modifed limt test for chlorides and sulphates, iron, heavy metals, lead, and arsenic.	3	2	1	0	3	2	1	1	0	0	0
			BP110P-C02	Perform identification test for magnesium hydroxide, ferrous sulphate, sodium bicarbonate, calcium gluconate and copper sulphate	3	2	1	0	3	2	1	1	0	0	0
			BP110P-C03	Perform test of purity for swelling powder of bentonite, neutralizing capacity of aluminum hydroxide gel and potassium iodate and iodine in potassium iodide.	3	3	1	0	3	2	1	1	0	0	0
12	BP111P	Communication skills (Practical)	BP111P-C01	Develop basic communication skills by meeting people and asking questions	0	0	1	0	3	2	0	0	3	0	0
		, , , , , , , , , , , , , , , , , , , ,	BP111P-C02	Demonstrate understanding of Pronounciation (Consonant Sounds), Pronounciation and Nouns and Pronounciation (Vowel Sounds)	0	0	1	0	3	2	0	0	3	0	0
			BP111P-C03	Demonstrate understanding of effective communication and effective writing, email etiquette, presentation skills and interview handling skills	0	0	3	0	3	2	0	0	3	0	0
13	BP112RBP	Remedial Biology (Practical)	BP1112RBP-CO1	Demonstrate understanding of the basic components of anatomy & physiology of plant	3	2	1	0	3	2	0	0	0	0	0
				Demonstrate understanding of the basic components of anatomy & physiology of animal with special reference to human	3	3	1	0	3	2	0	0	0	0	0
			BP1112RBP-CO3	Determine blood group and explain the significance of determination of blood group.	3	3	1	0	3	2	0	1	0	0	0

				BP1112RBP-CO4	Determine blood pressure and define systolic and diastolic blood pressure.	3	3	1	0	3	2	0	1	0	0	0
14		BP201T	Human Anatomy and Physiology- II													
15		BP202T	Pharmaceutical Organic Chemistry- I													
16		BP203T	Biochemistry													
17		BP204T	Pathophysiology													
18		BP205T	Computer Applications in Pharmacy													
19	B.Pharm Sem-II	BP206T	Environmental sciences													
20		BP207P	Human Anatomy and Physiology - II													
21		BP208P	Pharmaceutical Organic Chemistry- I													
22		BP209P	Biochemistry													
23		BP210P	Computer Applications in Pharmacy													
24	B.Pharm Sem-III		Pharmaceutical Organic Chemistry- II	BP301T-C01	Explain evidences for deriving structure of benzene.	3	3	0	0	3	2	0	0	0	0	0
24	b.i nai iii sem-iii	DI SULL	(Theory)	DF3011-C01	Explain evidences for deriving structure of benzene.	3	3	0	0	3		0	0	0	0	- 0
			(Theory)	BP301T-CO2	Describe stability of benzene by resonance and explain aromaticity of benzene by Huckel's rule.	3	3	0	0	3	2	0	0	0	0	0
				BP301T-C03	Explain the mechanism of reactions shown by benzene; describe effect and orientation of substituents on benzene ring.	3	3	0	0	3	2	0	0	0	0	0
				BP301T-C04	Write Structure and uses of DDT, Saccharin, BHC and Chloramine.	3	3	0	0	3	2	0	0	0	0	0
					Demonstrate understanding of acidity of phenol, effect of substituents on acidity of phenol, qualitative											
				BP301T-C05	tests, structure and uses of phenol, cresol, resorcinol and naphthol.	3	3	0	0	3	2	0	0	0	0	0
				BP301T-C06	Explain basicity of aromatic amines, effect of substituents on basicity of amines, and uses of aryl diazonium salts.	3	3	0	0	3	2	0	0	0	0	0
				BP301T-C07	Explain acidity and effect of substituents on acidity of aromatic acid, write the reactions of benzoic acid.	3	3	0	0	3	2	0	0	0	0	0
				BP301T-C08	Demonstrate understanding of the composition of fats and oils, chemistry and reactions of fatty acids.	3	3	0	0	3	2	0	0	0	0	0
				BP301T-C09	Determine quality of fat and oil by various analytical constants, and explain their significance.	3	3	0	0	3	2	0	0	0	0	0
				BP301T-C010	Explain the stability, reactivity and mechanism involved in synthesis/and reactions of Polynuclear hydrocarbons and their derivatives.	3	3	0	0	3	2	0	0	0	0	0
				DD201T CO11	y .	2	2	0	0	2	2	0	0	0	0	0
0.5		PRO COS	N 1 1N 11 10	BP301T-C011	Explain reactions of cyclopropane and cyclobutane.	3	3	0	0	3		0	0	0	0	0
25		BP302T	Physical Pharmaceutics - I (Theory)	BP302T-C01	Demonstrate the Understanding of the basic concept of solubility Expressions,	3	3	0	0	3	2	0	0	0	0	0
					Explain solute solvent interactions	3	3	0	0	3	2	0	0	0	0	0
				BP302T-C03	Classify ideal solubility parameters and explain solvation & association	3	3	0	0	3	2	0	0	0	0	0
				BP302T-C05	Describe the basic concept of free energy, endergonic and exergonic reactions	3	3	0	0	3	2	0	0	0	0	0
				BP302T-C06	Derive and explain Fick's equations	3	3	0	0	3	2	0	0	0	0	0
				BP302T-C07	Demonstrate understanding of Binary solutions and ideal solutions	3	3	0	0	3	2	0	0	0	0	0
				BP302T-C08	Explains Raoult's law and related concepts	3	3	0	0	3	2	0	0	0	0	0
				BP302T-C09	Discuss Phase rule and related concepts	3	3	0	0	3	2	0	0	0	0	0
					1											
				BP302T-C010	Demonstrate understanding of Distribution law, its limitations and applications	3	3	0	0	3	2	0	0	0	0	0
26		BP303T	Pharmaceutical Microbiology (Theory)	BP303T-C01	Explain meaning, history, branches, importance and scope of Microbiology	3	2	0	0	3	2	0	0	0	0	0
				BP303T-C02	Compare prokaryotes and eukaryotes and describe ultra structure, morphology, nutritional requirement of bacteria, raw materials used for culture media and physical parameters for growth, growth curve, isolation and	3	3	0	0	3	2	0	0	0	0	0
					preservation methods for pure cultures. Explain cultivation of anaerobes, quantitative measurement of bacterial growth.											
				BP303T-C03	Demostrate understanding of different types of phase constrast microscopy, dark field microscopy and electron microscopy.	3	2	0	0	3	2	0	0	0	0	0
				BP303T-C04	Identify bacteria using staining techniques (simple, Gram's &Acid fast staining) and biochemical tests	3	2	0	0	3	2	0	0	0	0	0
				BP303T-C05	Explain principle, procedure, merits, demerits and applications of methods of sterilization and evaluate efficiency of sterilization methods. Demonstrate understanding of equipments employed in large scale sterilization and	3	3	0	0	3	2	0	0	0	0	0
				ppager co.c	Classify and describe Sterility indicators.	0	2	0		_	0			0	0	•
				BP303T-C06	Explain morphology, classification, reproduction/replication and cultivation of Fungi and Viruses.	3	3	0	0	3	2	0	0	0	0	0
				BP303T-C07	Explain classification, mode of action, factors affecting and evaluation of disinfection and antiseptics.	3	3	0	0	3	2	0	0	0	0	0
				BP303T-C08	Describe and evaluate bacteriostatic and bactericidal actions.	3	3	0	0	3	2	0	0	0	0	0
				BP303T-C09	Explain Sterility testing of Pharmaceutical products according to IP, BP and USP.	3	3	0	0	3	2	0	0	0	0	0
				BP303T-C010	Demonstrate understanding of designing of aseptic area and laminar flow equipments. Explain different sources of contamination and methods of prevention of an aseptic area and classify microbiological clean area.	3	3	0	0	3	2	0	0	0	0	0
				BP303T-C011	Explain Principles and methods of different microbiological assay, methods for standardization of antibiotics, vitamins and amino acids. Demonstrate understanding of standardization and assessment of a new antibiotics.	3	3	0	0	3	2	0	0	0	0	0
				BP303T-C012	Explain types, sources, factors affecting and assessment of microbial contamination and spoilage of Pharmaceutical products. Describe Preservation of pharmaceutical products using antimicrobial agents and evaluation of microbial stability of formulations.	3	3	0	0	3	2	0	0	0	0	0

/ /				BP303T-C013	Describe Growth, general procedure and primary/established/transformed cell cultures. Explain applications of cells cultures in pharmaceutical industry and research.	3	3	0	0	3	2	0	0	0	0	0
27	BP304T	BP304T	Pharmaceutical Engineering (Theory)	BP304T-C01	Explain various types of manometers and demonstrate understanding of Reynold's number and explain its significance.	3	3	0	0	3	2	0	0	0	0	0
				BP304T-C02	Explain fundamental aspects of fluid flow behavior based on fluid mechanics.	3	3	0	0	3	2	0	0	0	0	0
				BP304T-C03	Develop steady state mechanical energy balance equation for fluid flow systems, estimate pressure drop in fluid	3	3	0	0	3	2	0	0	0	0	0
				DF3041-C03	flow systems and determine performance characteristics of fluid machinery.	3	3	U	U	3		U	U	U	U	U
				BP304T-C04	Describe the flow of materials in a manufacturing unit by studying the plant layout design.	3	1	0	0	3	2	0	0	0	0	C
					Explain Mechanisms, laws governing size reduction, factors affecting size reduction, and importance of particle											
				BP304T-C05	size in pharmaceutical formulation. Suggest methods for size reduction of solids and separation of different grades of particles, and describe principle, construction, working, advantages and disadvantages of equipments used for size reduction.	3	3	0	0	3	2	0	0	0	2	(
				BP304T-C06	Describe principle, construction, working, advantages and disadvantages of equipments used for size separation and explain the importance of particle size in pharmacy and suggest methods for size separation of different grades of particles.	3	3	0	0	3	2	0	0	0	3	(
				BP304T-C07	Explain types of sources of heat used for industrial scale operations, and significance of heat transfer processes in designing the pharmaceutical Unit.	3	3	0	0	3	2	0	0	0	0	
				BP304T-C08	Describe principle, construction, working, advantages and disadvantages of equipments used for evaporation. Explain the factors influencing evaporation, and applications of evaporation process in pharmaceuticals.	3	3	0	0	3	2	0	0	0	1	0
				BP304T-C09	Demonstrate understanding of basic principle and methodology of simple distillation. Explain principle, construction, working, advantages and disadvantages of equipments used for distillation.	3	1	0	0	3	2	0	0	0	1	0
				BP304T-C010:	Demonstrate understanding of objective, mechanism and applications of drying process. Describe principle, construction, working, advantages and disadvantages of equipments used for drying.	3	3	0	0	3	2	0	0	0	3	0
				BP304T-C011	Describe Principle, factors affecting mixing operation, construction, and working, Merits and Demerits and Uses of equipments used in mixing process of solids, semi-solids and liquids. Explain applications of mixing process used in pharmaceuticals.	3	3	0	0	3	2	0	0	0	3	0
				BP304T-C012	Remember theories & factors influencing filtration, filter aids, and filter Medias. Explain equipments that lead to enhanced filtration.	3	3	0	0	3	2	0	0	0	2	0
				BP304T-C013	Explain principle, construction, working, advantages and disadvantages of equipments used for centrifugation.	3	2	0	0	3	2	0	0	0	2	0
	ррзогр			BP304T-C014	Demonstrate understanding of material handling techniques. Describe preventive methods used for corrosion control in Pharmaceutical industries. Perform test to prevent environmental pollution.	3	3	0	0	3	2	3	0	0	0	C
28	BP305P	P305P	Pharmaceutical Organic Chemistry- II	BP305P-C01	Perform recrystallization and steam distillation.	3	2	1	0	3	2	1	1	0	0	(
			(Practical))	BP305P-C02	Determine the iodine value, acid value, saponification value and perform standardization of NaOH/ KOH.	3	2	1	0	3	2	1	1	0	0	(
				BP305P-CO3	Synthesize various organic compounds and explain the mechanism involved in their synthesis.	3	3	1	0	3	2	1	1	0	0	
29	BP	P306P	Physical Pharmaceutics- I (Practical)	BP306P-C01	Determine the solubility of drugs in given solutions at specific temperature.	3	3	1	0	3	2	0	1	0	0	
				BP306P-C02	Demonstrate determination of pKa value by Half Neutralization/ Henderson Hasselbalch equation	3	3	1	0	3	2	1	1	0	0	(
				BP306P-C03	Determine the Partition co- efficient of benzoic acid in benzene and water	3	3	1	0	3	2	1	1	0	0	
				BP306P-C04	Determine the Partition co- efficient of Iodine in CCl4 and water	3	3	1	0	3	2	1	1	0	0	
				BP306P-C05	Demonstrate determination of % composition of NaCl in a solution using phenol-water system by CST method	3	3	1	0	3	2	1	1	0	0	
				BP306P-C06	Determine of surface tension of given liquids by drop count and drop weight method	3	3	1	0	3	2	0	1	0	0	
				BP306P-C07	Determine of HLB number of a surfactant by saponification method	3	3	1	0	3	2	1	1	0	0	
				BP306P-C08	Demonstrate determination of Freundlich and Langmuir constants using activated char coal	3	3	1	0	3	2	1	1	0	0	
				BP306P-C09	Determine of critical micellar concentration of surfactants	3	3	1	0	3	2	1	1	0	0	
				BP306P-C010	Determine of stability constant and donor acceptor ratio of PABA-Caffeine complex by solubility method	3	3	1	0	3	2	0	1	0	0	
				BP306P-C011	Demonstrate determination of stability constant and donor acceptor ratio of Cupric-Glycine complex by pH titration method	3	3	1	0	3	2	0	1	0	0	
	ВР	P307P	Pharmaceutical Microbiology (Practical)	BP307P-C01	Demonstrate understanding of different equipments and processing, e.g., B.O.D. incubator, laminar flow, aseptic hood, autoclave, hot air sterilizer, deep freezer, refrigerator, microscopes used in experimental microbiology.	3	2	1	0	3	2	0	1	0	3	
30			ŀ	BP307P-C02	Perform Sterilization of glassware and prepare and sterilize culture media.	3	2	1	0	3	2	1	1	0	0	
30					r error in stermzation or grassware and prepare and stermize culture media.									_		
30					Perform Sub-culturing of bacteria and fungus on nutrient stabs and slants preparations	- 3 1	3	1 1	()	3	2 1	1 1	1 1	0	() 1	
30				BP307P-C03	Perform Sub culturing of bacteria and fungus on nutrient stabs and slants preparations. Perform different Staining methods (simple, Gram's & Acid fast staining)	3	3	1	0	3	2	1	1	0	0	
30				BP307P-C03 BP307P-C04	Perform different Staining methods (simple, Gram's & Acid fast staining)	3 3	3 2 2	1	0	3 3	2	1 1 1	1 1 1	0 0	0 0	
30				BP307P-C03	Perform different Staining methods (simple, Gram's & Acid fast staining) Isolate pure culture of micro-organisms by multiple streak plate technique and other techniques.	3	2		0	3		1	1	0	0	(
30				BP307P-C03 BP307P-C04 BP307P-C05 BP307P-C06	Perform different Staining methods (simple, Gram's & Acid fast staining) Isolate pure culture of micro-organisms by multiple streak plate technique and other techniques. Perform Microbiological assay of antibiotics by cup plate method and other methods	3	2	1	0	3	2 2	1	1 1	0	0	(
30				BP307P-C03 BP307P-C04 BP307P-C05	Perform different Staining methods (simple, Gram's & Acid fast staining) Isolate pure culture of micro-organisms by multiple streak plate technique and other techniques.	3 3	2 2 3	1 1 1	0 0 0	3 3 3	2 2 2	1 1 1	1 1 1	0 0 0	0 0 0	

				BP307P-C010	Perform biochemical tests (IMVIC)	3	3	1	0	3	2	1	1	0	0	0
31		BP308P	Pharmaceutical Engineering (Practical)	BP308P-C01	Perform the determination of radiation constant of brass, iron, unpainted and painted glass.	3	2	1	0	3	2	1	1	0	0	0
				BP308P-C02	Evaluate and calculate the efficiency of steam distillation.	3	1	1	0	3	2	0	1	0	0	0
				BP308P-C03	Determine the overall heat transfer coefficient by heat exchanger.	3	2	1	0	3	2	0	1	0	0	0
				BP308P-C04	Construct drying curves.	3	2	1	0	3	2	0	1	0	0	0
				BP308P-C05	Perform the determination of moisture content and loss on drying.	3	3	1	0	3	2	1	1	0	0	0
				BP308P-C06	Determine humidity of air from wet and dry bulb temperatures using Dew point method.	3	2	1	0	3	2	0	1	0	0	0
				BP308P-C07	Demonstrate understanding of construction working and application of pharmaceutical machinery such as rotary tablet machine, fluidized bed coater, fluid energy mill, de-humidifier.	3	3	1	0	3	2	0	1	0	3	0
				BP308P-C08	Evaluate size distribution of tablet granulations, constructsize frequency curves including arithmetic and logarithmic probability plots.	3	3	1	0	3	2	1	1	0	0	0
				BP308P-C09	Perform and verify the laws of size reduction using ball mill.	3	3	1	0	3	2	1	1	0	3	0
				BP308P-C010	Demonstrate understanding of Major equipments used in mixing, drying and size reduction viz. colloid mill, planetary mixer, fluidized bed dryer, freeze dryer and such other major equipment.	3	3	1	0	3	2	0	0	0	3	0
				BP308P-C011	Perform and explain the factors affecting Rate of Filtration and Evaporation such as surface area, concentration and thickness/viscosity.	3	3	1	0	3	2	0	1	0	0	0
				BP308P-C012	Demonstrate understanding of effect of time on the Rate of Crystallization.	3	3	1	0	3	2	0	0		0	0
				BP308P-C013	Calculate the uniformity Index for given sample by using Double Cone Blender.	3	3	1	0	3	2	0	1	0	0	0
32		BP401T	Pharmaceutical Organic Chemistry III													
33		BP402T	Medicinal Chemistry I													
34		BP403T	Physical Pharmaceutics II													
35		BP404T	Pharmacology I													
36	B.Pharm Sem-IV	BP405T	Pharmacognosy and Phytochemistry I													
37		BP406P	Medicinal Chemistry I													
38		BP407P	Physical Pharmaceutics II													
39		BP408P	Pharmacology I													
40		BP409P	Pharmacognosy and Phytochemistry I													