Meerut Institute of Engineering and Technology, Meerut

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) Dept. of Pharmaceutical Technology: 2024-25 ((Session-wise # I year of 2024-25; II year of 2024-25; III year of 2024-25 and IV year of 2024-25) BKL # K1 - Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate, K6 - Create

S. No.	Sub Code	СОх	Statement of Course Outcomes (COs)	Кх	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PSO 1	PSO 2	PSO 3
	couc		Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Pharmacy Knowledge	Planning Abilities	Problem analysis	Modern tool usage	Leadership skills	Professional Identity	Pharmaceutical Ethics	Communication	The Pharmacist and society	Environment and sustainability	Life-long learning			
		CO1	summarize the cellular level of organization and the characteristics of different types of tissues and their location in various organs. (Understanding)	K2	3					2	1	1	2		2	3		
		CO2	describe the structure and functions of skin, bones and joints of human body. (Understanding)	K2	3					2	1	1	2		2	3		
1	BP 101T	CO3	Understand the importance of blood, lymphatic system and immunity in human body. (Understanding)	K2	3					2	1	1	2		2	3		
	ВР	CO4	relate the physiology of sympathetic, parasympathetic, spinal/cranial nerves and organization of special senses. (Understanding)	K2	3					2	1	1	2		2	3		
		CO5	illustrate the anatomy, physiology and pathophysiology of heart and blood vessels. (Understanding)	K2	3					2	1	1	2		2	3		
			BP 101T	K2	3.00					2.00	1.00	1.00	2.00		2.00	3.00		
		CO-1	Understand the basic fundamentals of analytical chemistry.	K2	3		3	2							1	3	3	1
		CO-2	Explain principles, methodology and applications of acid-base and non-aqueous volumetric titrations.	K2	3		3	3							1	3	3	1
2	BP 102T	CO-3	Demonstrate the principle, methodology and applications of precipitation, Complexometric and Diazotization volumetric titrations.	K2	3		3	3							1	3	3	1
	ВР		Demonstrate the principle, methodology and applications of				_								1		_	
		CO-4	Redox titration and Gravimetric analysis. Illustrate principle, methodology and applications of	K2	3		3	3							1	3	3	1
		CO-5	electrochemical methods of analysis.	K2	3		3	3							1	2	2	
			BP102T		3.00		3.00	2.80							1.00	2.80	2.80	1.00

			To recollect the history of pharmacy and know the scope of Pharmacy, Pharmacopoeias, excipients and basic terms with	K2	3						2		3	2		
		CO-1	formulation To interpret parts of prescription and identify errors of		2	3	3			3	2	3		2		
		CO-2	prescription.	K2												
3	BP103T	CO-3	To carry out simple pharmaceutical calculations applied in the preparation of formulations, dilution, strengths and posology	K2	3	3	3	2		3	2			2		3.00
			To apply the basic concepts to compare and predict the	νa	3	3	2	2		2				2		3.00
		CO-4	formulation of conventional dosage forms viz. liquid, powder and semisolid	K2												
	,	CO-5	To judge different pharmaceutical incompatibilities and	K2	3	3	2	1		3				2		3
			BP103T	K2	2.80	3.00	2.50	1.70		2.75	2.00	1.50	1.50	2.00		3.00
		CO-1	to explain the sources of impurities, history of pharmacopeias and limit tests.	K2	3					2	1		2	2	3	
	•	CO-2	to describe the theory & principles of buffers solutions, electrolytes and dental products.	K2	3					2	1		2	2	3	
4	BP104T		to illustrate the method of preparation, assay, properties & uses of Gastro-intestinal agents.	K2	3					2	1		2	2	3	
	Bi		to describe method of preparation, assay, properties & uses of expectorants, emetics, haematinics, antidotes & astringents.	K2	3					2	1		2	2	3	
	•	CO-5	to explain the inorganic chemistry of Radiopharmaceuticals.	K2	3					2	1		2	2	3	
	,		BP104T	К2	3.00					2.00	1.00		2.00	2.00	3.00	
		CO-1	Understanding of communication skills and its perspective.	K2					3	2		3		2		
		CO-2	Understanding of elements of communication and its styles.	K2					3	2		3		2		
)5T	CO-3	Developing listening and writing ability.	K2					3	2		3		2		
5	3P105T	60.4	Applying practical and oral presentation skills for developing	K 2		3	2					1		3		
	Ш		inter-personal communication skills.	K3		2	2		3			3		2		
	ı	CO-5	Applying planning and managerial decision making skills.	К3		2	2		3	2		3		2		
			BP105T			2	2		3	2		3		2		

			Understand the theory used in application of Partial Fraction														
			in Chemical Kinetics and Pharmacokinetics, logarithm to														
		CO-1	solving pharmaceutical problems	K2	2.00		2.00							1.00		1.00	
	•		Understand the concepts of Matrices and determinant used in											2.00			
		CO-2	application to solving Pharmacokinetic equations	K2	1		1							1			
	⊨		Apply the concepts of function, limit, continuity, differentiability														
	₽		and Integration used in application of mathematics in														
6	BP106RMT	CO-3	Pharmacy	К3	2		2							1			
	BP.		Understand the concepts of Coordinate Geometry used in														
		CO-4	application of mathematics in Pharmacy	K2	3		3							2		2.00	
			Apply the concept of Differential equations and Laplace														
			transform used in application to solving chemical kinetics and														
		CO-5	Pharmacokinetics equations	К3	2		2							1			
			BP106RMT		2.00		2.00							1.20		1.50	
			On completion of this course, Student will be able to														
		1	understand the classification, silent features of five kingdoms	K2													
		_	of life and morphology and general anatomy of flowering	NΖ													
			plants.		3	2			3	2		2			2		
			On completion of this course, Student will be able to describe														
		2	the basic components of anatomy & physiology of digestive,	K2													
		_	blood circulatory system and respiratory system in human	112													
			bodv.		3	2			3	2		2				1.00	
	_		On completion of the course the student will be able to														
	RB	3	understand the classification, physiology and functions of	К2													
7	BP106RBT		human excretory system, nervous system, endocrine system			_											
	ВР		and reproductive system.		3	2			2	3	2	2		2		1.00	
			On completion of the course the student will be able to														
		4	describe the essential mineral nutrition and photosynthesis of	νa													
		4	plants.	K2													
					3	2			1	3	2	2		1	1		3.00
			On completion of the course, the Students will be able to						_					-			3.00
		5	describe the Cell functioning and types of tissues of Plants and	K2													
			Animals.	112	3	2			1		2	2		2			
			BP106RBT		3.00	2			2.00	2.50	2.00	2.00		1.60	1.50	1.00	3.00
		66.1	Contrast the gross microscopy of epithelial, connective,	1//2		_	_	_					_				
		CO-1	muscular and nervous tissue.	K2	3		3	3	1	1		2	2		3		
		66.3	Experiment with the blood sample to perform different kind of	1/2	_		_	2	4	А		-	_		2		
		CO-2	blood tests.	K2	3		3	3	1	1		2	2		3		
	107P	CO-3	Distinguish the different bones of axial and appendicular	К3	3		3	2	1	1		2	2		2		
8	P 1.	CO-3	skeletal system.	Ν3	3		3	3	1	1		2	2		3		
	ВР	CO-4	Determine the heart rate and pulse rate by using different	К3	3		3	3	1	1		2	2		3		
		CO-4	methods.	NΟ	3		3	3	1	1					<u> </u>		
		CO-5	Examine the blood pressure by using sphygmomanometer.	K2	3		3	3	1	1		2	2		3		
			BP107P	К3	3.00		3.00	3.00	1.00	1.00		2.00	2.00		3.00		

		1	It to deposit and assets and of a consequent to the second conditions of	1				1		1				П			
			Understand method of preparation of various Normal and		_		_										
	•	CO-1	Molar solutions.	K2	3		3	1						1	1	1	
			Demonstrate methods of standardization of a solution by														
	0	CO-2	using volumetric analysis.	K2	3		3	1						1	1	1	
9	180		Understand methods of standardization of a solution by using														
9	BP108P	CO-3	electroanalytical methods.	K2	3		3	3						1	3	2	
	ш		Make use of volumetric analysis for the quantitative														
		CO-4	estimation of a sample.	К3	3		3	3						1	3	2	
		CO-5	Examine the impurity level by using limit test.	K4	3		3	3						1	1	1	
	•		BP108P		3.00		3.00	2.20						1.00	1.80	1.40	
			To understand simple dosage forms and its usage, and														
		CO-1	understand the role of each added ingredients.	K2	3		3	3	1	1		2	2		3		
	•		To calculate quantity of each exicipient and devise plan as per														
		CO-2	the requirement of dosage form.	K2	3		3	3	1	1		2	2		3		
	•		To make simple dosage form with rationale of each excipient														
	BP109P	CO-3	and its method of preparation.	K2	3		3	3	1	1		2	2		3		
10	P10		To select a proper container system and follow labeling														
	8	CO-4	instruction during dispensing of drug	K2	3		3	3	1	1		2	2		3		
	•		To understand design label with general and specific														
			instructions relevant to product stability, indications and														
		CO-5	contraindications.	K2	3		3	3	1	1		2	2		3		
	•		BP109P	КЗ	3.00		3.00	3.00	1.00	1.00		2.00	2.00		3.00		
			Make use of limit test for various colored and insoluble														
		CO-1	inorganic compounds.	K1	3		1	2			1	1	1	2	3.00		
			Demonstrate the method of preparation of inorganic														
	Δ.	CO-2	compounds.	K2	3		2	1			1	1	1	2	3.00		
11	BP110P												_		3.00		
++		CO-3	Identify qualitatively the various inorganic ions					2			2	1					
1 1	3P.1		Identify qualitatively the various inorganic ions.	K2	3		2	2			2	1	1	2	3.00		
	BP1		Examine the impurity level by using limit test.					2			1	1					
	BP1	CO-4	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of	K2 K2	3		3	1			1	1	1	2	3.00		
	BP1	CO-4	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds.	K2 K2 K2	3 3		3	2			2	1	1 1 1	2 2 2	3.00 3.00 3		
	BP3	CO-4	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of	K2 K2	3		3	1			2	1	1 1 1	2 2 2	3.00		
	BP3	CO-4 CO-5	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P	K2 K2 K2 K3	3 3		3	2			1 2 1.40	1	1 1 1	2 2 2	3.00 3.00 3		
	BP3	CO-4 CO-5	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios.	K2 K2 K2	3 3	2	3	2	3	3	2	1	1 1 1	2 2 2	3.00 3.00 3		
	BP2	CO-4 CO-5	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through	K2 K2 K2 K3	3 3	2	3	2	3	3	1 2 1.40	1	1 1 1	2 2 2	3.00 3.00 3		
		CO-4 CO-5	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm.	K2 K2 K2 K3	3 3	2	3	2	3	3	1 2 1.40	1	1 1 1	2 2 2	3.00 3.00 3		
12		CO-4 CO-5 CO-1	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening	K2 K2 K2 K3 K2	3 3	2	3	2	3		1 2 1.40	1	1 1 1	2 2 2	3.00 3.00 3		
12		CO-4 CO-5 CO-1	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening and writing skills.	K2 K2 K2 K3	3 3	2	3	2	3	3	1 2 1.40	1	1 1 1	2 2 2	3.00 3.00 3		
12	BP111P BP1	CO-4 CO-5 CO-1 CO-2	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening and writing skills. To demonstrate the verbal and non verbal communication	K2 K2 K3 K2 K2 K2	3 3 3.00	2	3	2	3		1 2 1.40 3	1	1 1 1.00	2 2 2	3.00 3.00 3		200
12		CO-4 CO-5 CO-1 CO-2	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening and writing skills. To demonstrate the verbal and non verbal communication ability through presentation.	K2 K2 K2 K3 K2	3 3	2	3	2	3		1 2 1.40	1	1 1 1	2 2 2	3.00 3.00 3		2.00
12		CO-4 CO-5 CO-1 CO-2 CO-3	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening and writing skills. To demonstrate the verbal and non verbal communication ability through presentation. To instill in them the ability to use language effectively to face	K2 K2 K3 K2 K2 K2	3 3 3.00	2	3	1 2 1.60	2		1 2 1.40 3	1	1 1 1.00	2 2 2	3.00 3.00 3 3.00		2.00
12		CO-4 CO-5 CO-1 CO-2 CO-3	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening and writing skills. To demonstrate the verbal and non verbal communication ability through presentation. To instill in them the ability to use language effectively to face interviews, group discussions and public speaking.	K2 K2 K3 K2 K2 K2	3 3 3.00	2	2 3 2.20	1 2 1.60	2	3	1 2 1.40 3 3	1	1 1 1.00	2 2 2 2.00	3.00 3.00 3 3.00		
12		CO-4 CO-5 CO-1 CO-2 CO-3	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening and writing skills. To demonstrate the verbal and non verbal communication ability through presentation. To instill in them the ability to use language effectively to face interviews, group discussions and public speaking. BP111P	K2 K2 K3 K2 K2 K2	3 3 3.00	2 3	2 3 2.20	1 2 1.60	2		1 2 1.40 3	1	1 1 1.00	2 2 2 2.00	3.00 3.00 3 3.00		2.00
12		CO-4 CO-5 CO-1 CO-2 CO-3 CO-4	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening and writing skills. To demonstrate the verbal and non verbal communication ability through presentation. To instill in them the ability to use language effectively to face interviews, group discussions and public speaking. BP111P To know the handling of microscope and permanent slide	K2 K2 K3 K2 K2 K2	3 3 3.00	2 3 2.50	2 3 2.20	1 2 1.60	2	3	1 2 1.40 3 3	1	1 1 1.00	2 2 2 2.00	3.00 3.00 3 3.00		
12		CO-4 CO-1 CO-2 CO-3 CO-4 CO-5	Examine the impurity level by using limit test. Analyze test for purity with respect to various parameters of inorganic compounds. BP110P Enhance the general conersational skills in different scenarios. Enable them to learn better pronunciation etiquettes through stress on word accent, intonation and rhythm. Develop proficiency to generate effective reading, listening and writing skills. To demonstrate the verbal and non verbal communication ability through presentation. To instill in them the ability to use language effectively to face interviews, group discussions and public speaking. BP111P	K2	3 3 3.00		2 3 2.20	1 2 1.60	2	3	1 2 1.40 3 3	1	1 1 1.00	2 2 2 2.00	3.00 3.00 3 3.00		2.00

13	112RBP		To identify various plant parts, to organize their modifications and to categorize the physiology of frog by using computer models	K2	3	3					3	
	В	CO-4	To assess the microscopical study and identification of tissues.	K2	3						3	1.00
			To compile the bones identification, blood group, blood pressure and tidal volume determination.	К3	3			3			3	
			BP112RBP		3.00	3.00		3.00			3	1.00

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			Explain the organization, structure and functions of the															
		CO-1	Central nervous system.	K2	3					2	1	1	3		2	3		
			Describe the structure, functions and pathophysiology of the															
			digestive system and the															
			concept of energy required for digestion.															
		CO-2		K2	3					2	1	1	3		2	3		
	⊨		Describe the anatomy & physiology of respiratory and Urinary															
14	BP201T	CO-3	system.	K2	3					2	1	1	3		2	3		
	ВР		Explain the structure and functions of various endocrine															
		CO-4	glands.	K2	3					2	1	1	3		2	3		
			Identify the anatomy & physiology of male and female															
			reproductive system along with															
			concepts of genetics.															
		CO-5		К3	3					2	1	1	3		2	3		
			BP201T		3.00					2.00	1.00	1.00	3.00		2.00	3.00		
			Explain the classification, nomenclature and structural															
		CO-1	isomerism of the organic compounds.	К2	3		2	2					1	1		1	3	
			Illustrate the method of preparation, chemical properties,															
			hybridization and uses of alkanes, alkenes and conjugated															
		CO-2	dienes.	К3	3		2	2					1	1		1	3	
			Demonstrate the method of preparation, chemical properties,		Ť													
	12T		qualitative tests, structure and uses of Alkyl halides and															
15	BP202T	CO-3	Alcohols.	К3	3		3	2					1	1			3	
	В		Demonstrate the method of preparation, chemical properties,															
		CO-4	qualitative tests, structure and uses of Carbonyl compounds.	К3	3		3	2					1	1		1	3	
			Illustrate the method of preparation, chemical properties,		Ť													
			qualitative tests, structure and uses of Carboxylic acids and															
		CO-5	Aliphatic amines.	К3	3		3	2					2	2		2	2	
			BP202T		3.00		2.60	2.00					1.20	1.20		1.25	2.80	
			Students will be able to demonstrate an understanding of															
			fundamental biochemical principles, such as the															
			structure/function of biomolecules, metabolic pathways, and	K2														
			the regulation of biological/biochemical processes.															
		CO-1	l		2			1	2		2	1	1			3		
			Students will be able to Ilustrate the pathways involved in					_			_	_						
			carbohydrate, lipid metabolism and their energy production															
			by understanding the mechanisms of ETC and oxidative	K2														
	—	CO-2	phosphorylation		2			1	1		1	1	1			2		
16	BP203T		Students will be able to predict the causes of various disorders		t													
	BP2	CO-3	related to defect in the metabolic pathways.	K2				1	2	1	2	2	1			1		
		1	Students will be able have good understanding of															
			Biomolecules (DNA/RNA/PROTEIN). They would also have	К2														
		CO-4	been exposed to synthesis of these biomolecules.	.,_					1	1	1	1				2		
1		CO 4	been exposed to synthesis of these bioinfolecules.		<u> </u>	.												

	1 1		Students will be able to understand how enzymes are															
			classified, substrate affects enzyme activity and role of enzyme															
			inhibition, therapeutic and diagnostic applications of enzymes	K2														
		CO-5	and isoenzymes.					2	2	1	1	1	1			2		
		CO-3	BP203T	k2	2.00			1.25	1.60	1.00	1.40	1.20	1.00			2.00		
			Students will be able to describe the basic concepts of				1	-	-	-								-
		60.4	physiology / pathophysiology, relate and its gross & sub-															
		CO-1	cellular or macroscopic structural changes to clinical															
			manifestations.	K2	3	-					3	-	-	-	-	3	-	
	[Students will be able to define, enlist & recall pathogenesis of															-
		CO-2	the selected diseases / disorders of human respective organ															
	_		system (s).		2	3	-	-	-	3	-	-	-	-	1	-	3.00	
17	BP204T	CO-3	Students will be able to identify causes of human disorders or	К3														-
1	3P2	00 3	diseases in respective organ system (s) in Human being.	11.5	-	-	1	-	-	2	-	-	-	-	-	3	-	
	_	CO-4	Students will be able to explain, relate & interpret signs and	К4														-
	,		symptoms of the diseases/ disorders in human beings.		-	-	-	3	-	-	1	-	-	-	-	-	-	
			Students will be able to choose, verify the complications like															-
		CO-5	inflammation & its mechanism associated with the respective	K5														
			disease (s) /disorder (s) and assess basic mechanism involved						,	,	٠,	2	1	2	2	2		
			in the process of repair in human beings.		2.50	3.00	1.00	-	2	3	2	3	1	3	2	2	- 2.00	
			BP204T Students will be able to understand different number systems		2.50	3.00	1.00	3.00	2.00	2.67	2.00	3.00	1.00	3.00	1.50	2.67	3.00	-
		CO 1	and basic information system processes used in	K2	3	2			2							3		
		CO-1	pharmaceutical computing.	KΖ	3		-	-		-	_	_	-	_	-	3	-	-
			Students will be able to apply basic web technologies and															
		CO-2	database tools for managing pharmacy-related information.	K2	-	2	-	-	2	-	-	1	-	-	-	2	2	-
			Students will be able to explain the application of computers		_			_										_
)5T	CO-3	in drug design, hospital systems, and pharmaceutical care.	K2	3	2	-	2	2	-	-	-	-	-	-	2	-	2
18	BP205T		Students will be able to understand the fundamentals of															
	В	CO-4	bioinformatics and its role in drug discovery and vaccine	K2	2	-	2	-	2	-	-	-	-	-	-	-	3	-
			development.															
	,		Students will be able to analyze pharmaceutical data using															
		CO-5	computerized tools like CDS, LIMS, and TIMS in preclinical	K2	-	3	-	2	2	-	-	-	-	-	-	-	2	3
			research.															
			BP205T	K2	3.00	3.00	2.00	2.00	2.00			1.00				3.00	3.00	3.00
			Students will be able to understand the basics of the															
			environment like ecology, ecosystem, food chain, food web											_	_			
		CO-1	and ecological pyramids.	K2										3	2			
		60.2	Students will be able to classify the different natural sources	W 2					4					_	ء ا	4		
		CO-2	and their conservation to save the environment. Students will be able to know the current problems of the	K2		1			1					3	2	1		
40	BP206T		environment and how to solve them, the role of individual in															
19	3P21	CO 2	the conservation of the environment and natural resources.	K2		1								2	₁			
	ш .	CO-3	Students will be able to understand the different factors of	NΖ		1									1			
		CO-4	environmental pollution and measures to minimize it.	K2										1	1			
1	l .	CO-4	environmental politition and measures to millimize it.	NΔ	l									1	1			

	CO-5	wastes from hospitals and pharmaceutical industries.	K2	1	1				1	1		
•		Students will be able to aware of the hazards of disposal										

	i		I							1		-					1	1
		CO-1	Explain the gross morphology, structure and functions of	K2	3	2	2	1								_	2.00	2.00
	ł		various organs of different systems in the human body.						1	1						3		
		CO-2	Demonstrate the general neurological examination and	K2	3	3	2	2			1					•	3.00	2.00
	-		functions of olfactory nerve and Taste buds.						2	1				1		3		
)7P	60.3	Demonstrate the visual acuity, reflex activity, Basal mass	1/2	_	_	2	_									2.00	2.00
20	BP207P	CO-3	index, Body temperature, Tidal volume, Vital capacity , Total	K2	3	3	3	3	3	4				4		3	3.00	3.00
	В		blood cell count and feedback mechanism. Appraise the society about family planning devices and						3	1				1		3		
		CO-4		K2	2	2	2	1	2	3	3	3	3	3	3	2	2.00	3.00
	ł	CO-5	Pregnancy diagnosis test. Identify the permanent slides of vital organs and gonads.	K2	3	2	2	2	2	1			3	3		3	2	2
	· ·	CO-3	BP207P	NZ	2.80		2.20				2.00	3.00	3.00	1.67	2.00	2.80	2.40	2.40
						2.40			2.00	1.40	2.00	3.00			3.00	2.80		2.40
			Determine functional groups in an organic compounds.	К3	3		3	2					2	1		2	3.00	
		CO-2	Illustrate method of preparation of organic compounds.	K2	3		3	2					2	1		2	3.00	
			Identify the organic compound by Lassaigne's test and melting															
	_	CO-3	point/boiling point.	К3	3		3	2					2	1		2	3.00	
	3P208P		Analyze systematically an unknown aliphatic organic															
21	P2(compound by various qualitative test and examine the															
	В	CO-4	molecular model of the organic compound.	K4	3		3	2					2	1		2	3.00	
			Analyze systematically an unknown aromatic organic															
			compound by various qualitative test and examine the		_												2.00	
	ļ.	CO-5	molecular model of the organic compound.	K4	3		3	2					2	1		2	3.00	
			BP208P		3.00		3.00	2.00					2.00	1.00		2.00	3.00	
		60.4	Apply the methods for the preparation of buffers and	К3	_			_		_							2.00	
	ł	CO-1	measurement of pH. Analyzing carbohydrate and proteins qualitatively and		3		1	2				1	1	1	2		3.00	
	۵	CO-2	quantitatively.	K5	3		2	1		2		1	1	1	2		3.00	
22	3P209P			V2				2					_	_	2			
	BP.	CO-3	Examine the abnormal constituents of urine qualitatively.	K3	3		2			2		2	1	1	2		3.00	
			Determine various constituents of blood quantitatively.	K2	3		3	1		2		1	1	1	2		3.00	
	ļ	CO-5	Determine salivary amylase activity and factors affecting it.	K2	3		3	2		2		2	1	1	2		3.00	
			BP209P	КЗ	3.00		2.20	1.60		2.00		1.40	1.00	1.00	2.00		3.00	
			Use MS Word to create questionnaires and other															
		CO-1	documentation related to pharmacy.	K2	3		3								3			
	٩	CO-2	Use MS Access to modify the data bases created.	K2	3	2	3											
23	BP210P	CO-3	queries.	K2		2	3			2								
1 1											_							
1 1	ВР	CO-4	Generate report; work with queries on MS Access.	K2	3	2	3			2	2							
	ВР		Generate report; work with queries on MS Access. Create HTML web page	K2 K2	3	2	3			2	2				3			

										1					1		1	1
			Know and recall the fundamental principles of organic															
		60.4	chemistry that include structure, character of organic	142	_		4.00					4 00	4 00		4 00			4.00
		CO-1	tameounus.	K2	2		1.00					1.00	1.00		1.00			1.00
		60.3	Understand the stability and methods of preparation of	1/2	_		1 00	2.00				4 00	1 00					
	Τ1	CO-2	organic compounds. Interpret and distinguish chemical behaviour of organic	K2	2		1.00	2.00				1.00	1.00					
24	BP301T	CO 3	compounds.	К2	1		1.00					1 00	1.00	1 00	1 00		1	
	ВР	CO-3		NΖ			1.00					1.00	1.00	1.00	1.00		1	
		CO-4	Illustrate the structure and uses of specific organic	К3			2.00								3.00			
			compounds. Outline the significance and principle involved in the	N.J			2.00								3.00			
		CO-5	determination of analytical constants	К2				3										
		00 3	BP301T	IV.Z	1.67		1.25	2.50				1.00	1.00	1.00	1.67		1.00	1.00
					1.07		1.25	2.50				1.00	1.00	1.00	1.07		1.00	1.00
		CO-1	Students will be able to elaborate factors affecting solubility of	K2	_	_	4 00	2.00		2.00	4 00		2.00		2 00	2		
		<u> </u>	drugs. students will be able to understand solid state and distinguish		3	2	1.00	2.00	1	2.00	1.00		2.00		2.00	3		
		60.3		1/2														
		CO-2	physical properties of drugs.	K2	3	2	1.00	2.00	1 00	2.00	1 00		2.00		2.00	3.00		
	2Т	<u> </u>	Students will be able to explain the significance of surface and		3		1.00	2.00	1.00	2.00	1.00		2.00		2.00	3.00		
25	BP302T	CO-3	interfacial phenomena.	K2	3	2	1.00	2.00	1	2.00	1 00		2.00		2.00	3.00		
	BF		Students will be able to describe complexes and their		_		1.00	2.00	<u> </u>	2.00	1.00		2.00		2.00	3.00		
		CO-4	pharmaceutical applications.	K2	3	2	1.00	2.00	1	2.00	1		2.00		2.00	3.00		
	•		Students will be able to explain about pH and role of buffers in								_							
		CO-5	formulations and of biological buffers.	K2	3	2	1	2	1.00	2.00	1		2.00		2.00	3.00		
	•		BP302T		3.00	2.00	1.00	2.00	1.00	2.00	1.00		2.00		2.00	3.00		
			Acquire, retain, recall and apply specialized language and		2				1							- 4		
		CO-1	1		_				_							1		
	,		IKNOWIEGGE relevant to micropiology.	K2				1					1	1	1	1		
			knowledge relevant to microbiology. Utilize the techniques for biochemical tests and staining of	K2	2			1					1	1	1	1		
			Utilize the techniques for biochemical tests and staining of	K2	2			1					1	1	1	1		
		CO-2	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency	K2 K2	2			1	1				1	1	1	1		
		CO-2	Utilize the techniques for biochemical tests and staining of		2			1	1 1									
26	03T	CO-2	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility					1										
26	3P303T		Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility	K2				1					1	1	1	1		
26	BP303T	CO-3	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products	K2 K3	2			1	1				1	1	1	1		
26	BP303T		Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals	K2	2			1	1				1	1	1	1		
26	BP303T	CO-3	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals Summarize microbial spoilage, preservation of pharmaceutical	K2 K3	2			1	1				1	1	1	1		
26	BP303T	CO-3	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals Summarize microbial spoilage, preservation of pharmaceutical products and animal cell culture and to evaluate microbial	K2 K3	2				1				1 1 1	1 1	1 1 1	1 1		
26	BP303T	CO-3	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals Summarize microbial spoilage, preservation of pharmaceutical products and animal cell culture and to evaluate microbial stability of pharmaceuticals	K2 K3	2 2			1	1 1				1 1 1	1 1 1	1 1 1	1 1 1		
26	BP303T	CO-3	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals Summarize microbial spoilage, preservation of pharmaceutical products and animal cell culture and to evaluate microbial stability of pharmaceuticals	K2 K3	2			1	1				1 1 1	1 1 1	1 1 1	1 1		
26		CO-4 CO-5	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals Summarize microbial spoilage, preservation of pharmaceutical products and animal cell culture and to evaluate microbial stability of pharmaceuticals BP303T Students will be able to define various unit operations used in	K2 K3 K3	2 2	2	1	1	1 1				1 1 1	1 1 1	1 1 1 1 1.00	1 1 1	2 00	2.00
26		CO-3	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals Summarize microbial spoilage, preservation of pharmaceutical products and animal cell culture and to evaluate microbial stability of pharmaceuticals BP303T Students will be able to define various unit operations used in pharmaceutical industries and material handling techniques.	K2 K3	2 2	2	1	1	1 1	2			1 1 1	1 1 1	1 1 1	1 1 1	3.00	3.00
26		CO-4 CO-5	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals Summarize microbial spoilage, preservation of pharmaceutical products and animal cell culture and to evaluate microbial stability of pharmaceuticals BP303T Students will be able to define various unit operations used in pharmaceutical industries and material handling techniques. Students will be able to illustrate the objective, principle,	K2 K3 K3	2 2	2	1	1	1 1				1 1 1	1 1 1	1 1 1 1 1.00	1 1 1	3.00	3.00
26		CO-4 CO-5	Utilize the techniques for biochemical tests and staining of microorganism for bacterial identification and also explain general information on sterilization to analyze its efficiency Evaluate antimicrobial agents and disinfectants and sterility testing of pharmaceutical products Illustrate Aseptic area in all aspects and explain microbial assays, pharmacopoeial standards of sterilization process and standardization of pharmaceuticals Summarize microbial spoilage, preservation of pharmaceutical products and animal cell culture and to evaluate microbial stability of pharmaceuticals BP303T Students will be able to define various unit operations used in pharmaceutical industries and material handling techniques.	K2 K3 K3	2 2	2	1	1	1 1				1 1 1	1 1 1	1 1 1 1 1.00	1 1 1	3.00	3.00

27	BP 304T	CO3	Students will be able to develop steps/processes involved in pharmaceutical manufacturing process and various preventive methods used for corrosion control in Pharmaceutical industries	K2	3		1	2		2		2	3	3.00
		CO4	Students will be able to classify evaporators, distillation units, dryers, mixers, filters, centrifuge	K2	2	1	1	2	2	2		2	3.00	3.00
		CO5	Students will be able to explain mechanisms of various unit operations and materials used in construction.	К2	2	1	1	2		2		2	3	3
			BP304T		2.40	1.50	1.00	2.00	2.	00		2.00	3.00	3.00

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			On completion of this course, the students will be able to													
		1	illustrate about the need, basic guidelines, content, process of													
			value education; and to get the clarity of the provision of	1/2				_		2	2	_				
	+		harmony in self. family, society and nature. On completion of this course, the students will be able to	K2				2		3	3	3	1			
			illustrate about the need, basic guidelines, content, process of													
		2	value education; and to get the clarity of the provision of													
				1/2				_		2	2	_				
	-		harmony in self, family, society and nature. On completion of this course, the students will be able to	K2				2		2	2	3				
	_		analyze about self, body, feelings in relationship, society and													
	301	3	relevance of nature; distinguish between values & skills and													
28	KVE 301		· •	14.4				١,		2	2		1			
	\leq		between ethical and unethical practices. On completion of this course, the students will be able to	K4				2		2	2		1			
			evaluate their participation (Thought, Behaviour, Work, and													
		4	Realization) at all the four levels of living and also their pre-													
			<u> </u>	K5						2	2	2	1			
	+		conditionings and present beliefs. On completion of this course, the students will be able to get	K5						2	2	3	1			
			clarity of ethical and unethical practices in profession, develop													
		5	<u> </u>													
			their emotional, social and professional competence to					_		2	2	_				
	ļ		actualize a harmonious environment in working place	K2				2		2	2	2				
+			KVE301 Make use of common laboratory techniques, including reflux,					2.00		2.20	2.20	2.75	1.00			
		00.4	distillation, steam distillation, recrystallization, vacuum					_								2.00
	ł	CO-1	filtration, melting point determination etc.	K2	2			3			1	2.00				2.00
			To perform a broad range of traditional organic reactions at													2.00
	ł	CO-2	the micro scale. To experiment with safe laboratory practices by handling	К3	2				 							3.00
)5P		<u> </u>													
29	3P305P	60.3	laboratory glassware, equipment, and chemical reagents	1/2							2					2.00
	՝	CO-3	appropriately. To critically evaluate data collected to determine the identity,	K2	1						3					2.00
			<u> </u>													
		CO 4	purity, and percent yield of products and to summarize	1/1	١,		2				2					2.00
	ł		findings in writing in a clear and concise manner.	K1	2		3				2	_				3.00
	ļ	CO-5	Estimation of oil and fats.	K2			2	1			2	3				2
\sqcup			BP305P		1.75		2.50	2.00			2.00	2.50				2.40
		CO-1	Student will be able to determine the solubility and partition	К2	_											
	-		coefficient of the drug.		2	2	1						1		1	
		CO-2	Student will be able to determine physicochemical properties	К2	_		_	_								
	9P		of drugs.		2	2	2	2					1		1	
30	вР306Р	CO-3	Student will learn the determination the surface tension of	К2												
	ВР		liquids.		2	2	1						1		2	
			Student will be able to determine the stability constant.	K2	2	2	2	2					1		2	2
		CO-5	Student will be able to determine pH by electrometric	K2	2	2	1				 		1			2
			BP306P		2.00	2.00	1.40	2.00					1.00		1.50	2.00
T -			Desferons and the deservice and assessment of containing													
1 1			Perform methods of cultivation and preservation of various											į	1 1	

			· · · · · · · · · · · · · · · · · · ·			•						•						
			Implement method of sterilization in pharmaceutical															
		CO-2	processing and industry.	K2	3		3	2		2			2	1		2		
31	07P	CO-3	Learn sterility testing of pharmaceutical products.	K2	3		3	2		2			2	1		2		
31	BP3071	CO-4	Carry out microbiological standardization of Pharmaceuticals.	К3	3		3	2		2			2	1		2		
			Understand the biochemical tests and its applications in															
		CO-5	pharmaceutical industries.	K1	3		3	2		2			2	1		2		
			BP307P		3.00		3.00	2.00		2.00			2.00	1.00		2.00		
			Understand and demonstrate the principles and performance															
			of unit operations such as heat transfer, drying, evaporation,															
		CO-1	and crystallization.	K4	3	3		3	1	1			2	2		3		
			Analyze and calculate process parameters for size reduction,															
			size separation, filtration, and mixing using practical															
	8 P	CO-2	pharmaceutical equipment.	K4	3		3	3	1	1			2	2		3		
32	308		Evaluate factors affecting unit operation efficiencies like															
	ВР	CO-3	distillation, filtration, drying, and heat exchange.	К3	3		3	3	1	1			2	2		3		
			Identify and explain the working principles, construction, and															
		CO-4	applications of industrial pharmaceutical machinery.	K2	3		3	3	1	1			2	2		3		
			Apply experimental data and plots to interpret operational															
		CO-5	outcomes, equipment efficiency, and formulation uniformity.	К3	3		3	3	1	1			2	2		3		
			BP308P		3.00	3.00	3.00	3.00	1.00	1.00	_	_	2.00	2.00	_	3	_	

		ī	Development of understanding the chemistry of Stores		1				1									
			Development of understanding the chemistry of Stereo															
			isomerism, resolution of racemic mixture and importance of		_		_										_	
		CO-1	chiral compounds that help in better drug Ability to learn the nomenclature of geometrical isomers,	K2	3		2			2							3	
			<u> </u>															
			conformational isomerism in ethane, n-butane and															
			cyclohexane. In addition, understand the role of stereospecific		_		_											
		CO-2	and stereoselective reaction in drug development.	K2	3		2			2							3.00	
	11T		Ability to learn the nomenclature and classification of															
33	3P401T		heterocyclic compounds and its importance in medicinal		_		_			_								
	B	CO-3	chemistry.	K2	3		2			2							3.00	
			Comprehensive learning of the synthesis, reactions and															
			medicinal uses of synthetic and natural heterocyclic		_		_			_								
		CO-4	compounds.	K2	3		2			2							3.00	
			Ability to learn the mechanism of many oxidation, reduction,															
			rearrangement and condensation reaction of organic		_		_			_								
		CO-5	compound to develop the drug.	K2	3		2			2							3.00	
			BP401T		3		2.00			2.00							3.00	
			Understand the basic principles and concepts associated with															
		CO-1	medicinal chemistry.	K2	3		2	1			1		3	1	2		1.00	1.00
			explain the various chemical class, mechanism of action, uses,															
			SAR and synthetic procedure of Drugs acting on Autonomic															
		CO-2	Nervous System	K2	3		2	1			1		3	1	2			1
	⊢		explain the various chemical class, mechanism of action, uses,		_		_				_		_		_		_	
34	BP402T	CO-3	SAR and synthetic procedure of cholinergic drugs explain the various chemical class, mechanism of action, uses,	K2	3		2	1			1		3	1	2		2	2.00
	BP.		•															
			SAR and synthetic procedure of drugs acting on Central												_		4.00	0.00
		CO-4	Nervous System illustrate the various chemical class, mechanism of action,	K2	3		2	1			1		3	1	2		1.00	2.00
			· · · · · · · · · · · · · · · · · · ·															
		60.5	uses, SAR and synthetic procedure of General anesthetics and	1/2	_		2				4		2		2			
		CO-5	Anti-inflammatory agents	K2	3		2	1 00	D.D. / //	<u> </u>	1 00	D 11 / / /	3	1	3	#PD / / OL	4.00	4.50
			BP402T		3.00		2.00	1.00	ועוט	FDIV/U	1.00	DIV/C	3.00	1.00	2.20	#DIV/0!	1.33	1.50
		CO1	understand the concepts of colloids and their applications.	K2	3	2	1											1
		CO2	identify the flow behaviour of fluids and different types of	К2	3		3		2									1
			deformation of solids.		Ŭ		J		_									
		CO3	understand the formulation concepts of pharmaceutical	К2	3		3											1
	<u> </u>		suspensions & emulsions and their stability problems.		_													
35	BP403T		explain the methods to determine particle size, derived															
	BP.	CO4	properties & flow properties of powders, and their role in	K2	3					2								1
			formulation development															
			Understand the reaction kinetics, factors affecting the rate of															
		CO5	the reactions, degradation, and stabilization of medicinal	K2	3		3											2
			agents as well as accelerated stability testing.															
			BP403T	K2	3.00	2.00	2.50		2.00	2.00								1.20
			Understand the pharmacological actions of different															
		CO-1	categories of drugs.	K2	2.0		2.0										3.0	

			Apply the basic pharmacological knowledge in the prevention											
		CO-2	and treatment of various diseases.	K2	2	2	1						2.00	1.00
	4T		Examine the drug interactions (pharmacokinetics and											
36	3P404T	CO-3	pharmacodynamics) with the body.	K3	2	2	1						2.00	
	ВР		Explain the mechanism of drug action at organ system/sub											
		CO-4	cellular/ macromolecular levels.	K4	2	1	1						2.00	
			Appriciate correlation of pharmacology with other bio medical											
		CO-5	sciences.	K5	2	3							2.00	
			BP404T		2.00	2.00	1.00						2.20	1.00
		CO-1	Introduction to Pharmacognosy, classification and quality	К2	1		1			1	1	1	1	
		CO-1	control of drugs from natural origin	NZ						1	1		1	
		CO-2	Cultivation, collection, storage, processing and conservation of	K2	1		1			1	1	1		
		CO-2	crude drugs	ΝZ	1		1			1	1	1		
	5T	CO-3	Discuss the plant tissue culture, historical develpoment,	К2	2					3	1			
37	BP405T	CO-3	application, edible vaccines	ΝZ						3	1			
	ВР	CO-4	Introduction to Ayurveda, Siddha, Unani, Chinese,	K2	2					1	1	2		
		CO-4	Homeopathy and secondary metabolites.	NZ						1	1	2		
		CO-5	Study of biological source, chemical nature and uses of drugs	K2	1		1			1		1	1	1
		CO-3	of natural origin containing drugs.	I\Z			1			1		1	1	1
			BP405T											

			Transcent and a second	1		1			1	1	1	1				1	
		00.4	Identify the drug structure.		_												2 22
		CO-1	Identify the drug physico-chemical and stereochemical	K3	3		3	2		2		2	1				2.00
		CO 2	features.	К3	3		3	3		2		3	1				2.00
1	BP 406P	CO-2	To prepare drugs /intermediates and perform the assay of	K3	3		3	3				3	1				2.00
38	P 4(CO-3	given drugs.	K4	3		3	2		3		2	2				3.00
	В	CO-4	To determine the partition coefficient of given drugs	K3	3		3	2		2		2	2				2.00
			To estimate the fats and oils	K3	3		3	 		3		Z	3				
		CO-5		K3				1		3			3				3.00
-			BP406P														
		CO1	Determine the rheological properties of liquids and semisolids.	К3	3		3	2		2		2	1				2.00
		CO2	Determine the sedimentation volume and assess the stability		_		_					_					
	ď		of coarse dispersions.	К3	3		3	2		2		2	1				2.00
39	BP 407P	CO3	Understand particle size analysis using various methods.	K2	3		3	2		2		2	1				2.00
	BP ,	CO4	Evaluate various derived properties and flow properties of	К3	_		_	_		_		_	_				
			powder.		3		3	2		2		2	1				2.00
		CO5	Understand chemical kinetics and drug stability studies.	K2	3		3	2		2		2	1				2.00
			BP407P		3.00		3.00	2.00		2.00		2.00	1.00				2.00
			Understand the pharmacological actions of different														
		CO-1	categories of drugs.	K1	2		2									3.00	
			Apply the basic pharmacological knowledge in the prevention		_		_										
		CO-2	and treatment of various diseases.	K2	2		2	1								2.00	1.00
	BP408P	60.3	Examine the drug interactions (pharmacokinetics and	1/2	_		_									2.00	
40	P4(CO-3	pharmacodynamics) with the body. Explain the mechanism of drug action at organ system/sub	К3	2		2	1								2.00	
	В	CO 4	cellular/ macromolecular levels.	K4	2		1	1								2.00	
		CO-4	Appriciate correlation of pharmacology with other bio medical	Κ4			1	1								2.00	
		CO-5	sciences.	K5	2		3									2.00	
		00 3	BP408P	N.S	2.00		2.00	1.00								2.20	1.00
		CO-1		К3	3	2	2	2			3		2	2	2	2.00	2.00
		CO-1	To determine different microscopical parameters of plant	N3												2.00	
		CO-2	drugs	К3	2	1					2		3	2	2	2.00	
	9P		To determine different phytochemical constants viz. Ash value,		-	-											
41	вР409Р	CO-3		К3	2	2	1	1			1		2	3	1	1.00	
	BI		To determine the size of starch grains in plant drugs	К3	2	3	3	3			2		2	2	2	3.00	
	1	CO-5	To determine swelling and foaming index of plant drugs	K3	3	2	1	1			1		3	2	2	1.00	
1	·		BP409P			_	_	_			_					2.00	

			Understanding the basic principles and concepts associated											
		CO-1		V2	,	2	,	,			,		2.00	
		CO-1	with Medicinal Chemistry. Classify various medicinal agents and explain their mode of	К3	3	2	2	2			3		2.00	
		60.3		V2	١,	-	_	,			,		3.00	
	Ε.	CO-2	action. Explain the synthetic procedure and pharmaceutical	K2	3	2	2	3			2		3.00	
42	501	60.3		1/2	١,	•	,	,			,		2.00	
	BP501T	t	applications of medicinal agents.	K2	2	3	2	2			3		3.00	
		CO-4	Outline the recent advances of various classes of drugs.	К3	2	2	1	2			3		2.00	
			Develop structure activity relationship of various medicinal											
		CO-5	agents.	K1	2	2	1	2			2		2.00	
			BP501T		2.40	2.20	1.60	2.20			2.60		2.40	
			Students will be able to to understand pre-formulation											
		CO1	studies, physical properties, chemical properties, BCS	K2	3	3					3			3.00
			classification of drugs and its significance											
		CO2	Students will be able to to discuss the formulation &	K2	3						3			
		COZ	manufacturing aspects of tablets and liquid orals	I\Z	,						5			
	2T	CO3	Students will be able to illustrate the pharmaceutical aspects	K2	3	1					3			
43	BP502T	003	of capsules and pellets.	ΝZ	3	1					3			
	ВР	CO4	Students will be able to describe the preparation and quality	К2	3	2	2				3			3.00
		C04	control of parenterals and ophthalmic preparations.	NZ	3	2	2				3			3.00
			Students will be able to summarize formulation,											
		CO5	manufacturing and evaluation of cosmetic preparations,	K2	2	2					3			
			pharmaceutical aerosols & the science of packaging material											
			BP502T		2.80	2.00	2.00				3.00			3.00
			On completion of this course, the student will be able to											
			On completion of this course, the student will be able to understand the pharmacology of the drugs acting on cardio	K2										
		CO-1	understand the pharmacology of the drugs acting on cardio vascular system.	К2	3			1				3		
		CO-1	understand the pharmacology of the drugs acting on cardio	K2	3			1				3		
		CO-1	understand the pharmacology of the drugs acting on cardio vascular system.	K2 K2	3			1				3		
			understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system.		3			1			1	3		
	Ti		understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary					1			1	-		
44	503T		understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system.					1			1	-		
44	ВР503Т	CO-2	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to	K2				1			1	-		
44	BP503T	CO-2	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related	K2	3			1				3		
44	BP503T	CO-2	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs.	K2	3			1				3		
44	BP503T	CO-2	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on	K2	3			1				3		
44	BP503T	CO-2	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on	K2 K2	3			1				3		
44	BP503T	CO-2 CO-3	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system. On completion of this course, the students will be able to	K2	3	3	3	1				3		3
44	BP503T	CO-2 CO-3	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system.	K2 K2	3 3						1 1	3 3 3		
44	BP503T	CO-2 CO-3	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system. On completion of this course, the students will be able to understand the definition, types and applications of bioassay	K2 K2	3 3 3 3.00	3 3.00	3 3.00	1.00			1	3 3	3.00	3 3.00
44	BP503T	CO-2 CO-3	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system. On completion of this course, the students will be able to understand the definition, types and applications of bioassay BP503T Illustrate the composition ,chemistry and chemical classes,	K2 K2	3 3						1 1	3 3 3	3.00	
44	BP503T	CO-2 CO-3 CO-4 CO-5	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system. On completion of this course, the students will be able to understand the definition, types and applications of bioassay BP503T Illustrate the composition ,chemistry and chemical classes, biosources, therapeutic uses and commercial applications of	K2 K2 K2	3 3 3 3.00			1.00			1 1	3 3 3	3.00	
44	BP503T	CO-2 CO-3 CO-4 CO-5	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system. On completion of this course, the students will be able to understand the definition, types and applications of bioassay BP503T Illustrate the composition ,chemistry and chemical classes, biosources, therapeutic uses and commercial applications of the secondary metabolites	K2 K2	3 3 3 3.00 3			1.00			1 1	3 3 3		
44	_	CO-2 CO-3 CO-4 CO-5	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system. On completion of this course, the students will be able to understand the definition, types and applications of bioassay BP503T Illustrate the composition ,chemistry and chemical classes, biosources, therapeutic uses and commercial applications of the secondary metabolites Apply the methods of biogenesis and basic metabolic	K2 K2 K2 K2	3 3 3 3.00			1.00			1 1	3 3 3	3.00	
	_	CO-2 CO-3 CO-4 CO-5	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system. On completion of this course, the students will be able to understand the definition, types and applications of bioassay BP503T Illustrate the composition ,chemistry and chemical classes, biosources, therapeutic uses and commercial applications of the secondary metabolites Apply the methods of biogenesis and basic metabolic pathways of secondary metabolites.	K2 K2 K2	3 3 3 3.00 3			1.00			1 1	3 3 3	2.00	
44	3P504T BP503T	CO-2 CO-3 CO-4 CO-5	understand the pharmacology of the drugs acting on cardio vascular system. On completion of this course, the student will be able to understand the pharmacology of the drugs acting on urinary system. On completion of this course, the students will be able to understand the pharmacology of the Autacoids and related drugs. On completion of this course, the students will be able to understand the pharmacology of the drugs acting on endocrine system. On completion of this course, the students will be able to understand the definition, types and applications of bioassay BP503T Illustrate the composition ,chemistry and chemical classes, biosources, therapeutic uses and commercial applications of the secondary metabolites Apply the methods of biogenesis and basic metabolic	K2 K2 K2 K2	3 3 3 3.00 3			1.00	2		1 1	3 3 3		

	ш		Utilize the process of extraction , isolation , identification and		2					3							1.00	
		CO-4	purification of the herbal drugs and phytoconstituents.	K4														
			Discover the latest techniques like Spectroscopy ,		2					2							2.00	
		CO-5	Chromatography and Electrophoresis.	K5			1	2										
			BP504T		2.60		1.00	2.00		2.50	2.00						2.00	
			Students will be able to understand the pharmaceutical															
			legislations and their implications in the development and	K2														
		CO-1	marketing of pharmaceutical products		3	2	-	-	-	-	3	2	2	2	3	3	3.00	2.00
			Students will gain the basic Knowledge and understanding of	K2														
		CO-2	Various Indian pharmaceutical Acts and Laws	ΝZ	3	2	2	-	-	1	3	2	-	2	3	3	3.00	3.00
	5T		Students will be able to understand various regulatory															
46	BP50!		authorities and agencies governing the manufacture and sale	К3														
	ВР	CO-3	of pharmaceuticals.		3	2	2	2	-	2	3	2	-	3	3	3	2.00	3.00
			Students will be able to understand the approval process and	К3														
		CO-4	regulatory requirements for drug products	KS	2	1	2	-	2	2	3	3	1	2	2	2	3.00	2.00
			Students will be able to understand the code of	K2														
		CO-5	Pharmaceutical ethics during the pharmaceutical practice	ΝZ	3	2	2	2	-	2	3	2	-	3	3	2	3.00	3.00
			BP505T		2.80	1.80	2.00	2.00	2.00	1.75	3.00	2.20	1.50	2.40	2.80	2.60	2.80	2.60

CO1 Students will be able to Interpret the preformulation studies on drugs				3
CO2 Students will be able to Explain the preparation, evaluation, and coating of tablets K2 3 3 2 1 2 2 K2 3 3 2 1 2 2 Students will be able to Explain the preparation, evaluation, K2 3 3 2 1 2 2 Students will be able to Illustrate the formulation and				3
and coating of tablets K2 3 3 2 1 2 2 Students will be able to Illustrate the formulation and	!			
and coating of tablets K2 3 3 2 1 2 2 2 Students will be able to Illustrate the formulation and	2			
CO3 Students will be able to Illustrate the formulation and evaluation of capsules K2 3 3 2 1 2 2				3
47 8 CO3 evaluation of capsules K2 3 3 2 1 2 2				
	2			1
47 Students will be able to Describe the preparation of				
CO4 parenterals, ophthalmic products, creams and other				
				3
Execute assessment of glass containers as per pharmacopeial				
CO5 specifications K2 3 3 2 1 1 2	,			1
BP506P 3.00 3.00 2.00 1.00 1.60 2.0				2.20
After successful completion of the course the students will be	,,,			2.20
CO-1 able to understand application of commonly used				
instrument(s), describe preparation of drug dilutions, different				
solutions and molar solution used for experiments on rodents. 1 2 3		3		_
After successful completion of the course the students will be				
CO-2 able to report basic concept of bioassay of drug (s) using				
different isolated organ (s) / tissue(s) by software(s) and				
videos	3	1		ļ
After successful completion of the course the students will be				
able to make use of software / computer simulated CDs or				
video cassettes for demonstrating effect or mechanism of drug				
CO-3 (agonist/ antagonist) action / synergism acting on isolated K3				
different organs/tissues from the laboratory animals which can minimize the use of experimental animals for 1 2 3 3 3 1 1 2 2				
pharmacology practical 1 2 3 3 1 1 2 2	3	1		
After successful completion of the course the students will be				
able to examine dose response curve (DRC) of drug (s) or				
offect of agenist / antagonist on DDC of drug using isolated				
CO-4 leffect of agonist / antagonist on DRC of drug using isolated K4 lissue preparation for demonstrating the receptor actions				
(efficacy, potency, precision and risk benefit ratio) by simulated experiments 3 3 3 2		3		
After successful completion of the course the students will be				
able to appraise experimental relevance of anti-inflammatory				
pain respectively and correlation of pharmacology with	1			
HEIGHEN HEIMAN SCIENCES.				
BP507P 1.60 2.00 2.00 2.33 2.50 2.00 1.80 1.67 2.00 2.5	2.33	3 2.00		
CO-1 characters. K3 3 3			3	
CO-2 Isolate and analyze the phytoconstituents from crude drugs. K3 3			2	
Apply the theotetical knowlwdge of Chromatography for				
49 Apply the theotetical knowlwdge of Chromatography for CO-3 separation of phytoconstituents. K3 3			2	
CO-4 Isolation and analysis of Volatile Oils.			1	

	•	CO-5	Identify the crude drugs by various chemical tests by observation	K3	2	1			2					2	
	·		BP508P		2.8	1			2.5					2	
			Explain prescriptions and dispensing of drugs in relation with												
		CO-1	modern hospitals.	K2	3	3	3	1	1		2	2	3.00		
	,		Make use of concepts of different routes of injection in patient												
			care and treatment.												
		CO-2		K2	3	3	3	1	1		2	2	3.00		
			Apply the principles of First aid in providing patient care in												
	39 P		hospital and community.												
50	BP5091	CO-3		К3	3	3	3	1	1		2	2	3.00		
	В		Examine the patient observation charts for better personnel												
			management.												
		CO-4		Κ4	3	3	3	1	1		2	2	3.00		
			Assess Simple diagnostic reports.												
		CO-5		Κ4	3	3	3	1	1		2	2	3.00		
			BP509P		3.00	3.00	3.00	1.00	1.00		2.00	2.00	3.00		

	ī	ī	To import fundamental knowledge on the structure shemistry					T									Ī	
		60.4	To impart fundamental knowledge on the structure, chemistry	142	_	_	2			_	_		_	_	_			2.00
		CO-1	and therapeutic value of drugs. To emphasize on modern techniques of rational drug design	K2	3	3	3			3	2		3	3	2			3.00
			like quantitative structure activity relationship (QSAR),															
			Prodrug concept, combinatorial chemistry and Computer		_		_	_										
	-	CO-2	aided drug design (CADD).	К3	3	3	2	2		3	2	3	3	2	3			3.00
51	501		To understand the mechanism of action of drugs related to		_	_				_	_	_	_	_	_			
	BP601T	CO-3	chemistry and their biological activity.	K2	3	3				3	2	3	3	3	3			3.00
			To understand the importance of drug design and different		_	_	_			_		_	_		_			
		CO-4	techniques of drug design.	К3	3	3	2	1		2		2	2		3			3.00
			To execute on the chemistry, metabolism, adverse effects,															
			Structure Activity Relationships (SAR), therapeutic uses and															
		CO-5	synthesis of important drugs.	K2	3	3		1		3	2	2	2	3	3			3
			BP601T		3.00	3.00	2.33	1.33		2.80	2.00	2.50	2.60	2.75	2.80			3.00
			After successful completion of the course, students will be															-
			able to understand the mechanism of drug action and its	K2														
		CO1	relevance in the treatment of Respiratory and Gastric		1	1		2	-	1	1	-	1	1	2	1	-	
		CO2	able to understand the basic introduction, history and	K2	2	2		2	-	1	-	-	1	1	2	1	-	-
			After successful completion of the course, students will be															-
)2T		able to illustrate the mechanism of drug action and its	КЗ														
52	BP602T	CO3	relevance in the treatment of specific infectious diseases.		2	2		1	-	2	2	2	2	3	1	2	-	
	В		After successful completion of the course, students will be															-
			able to appreciate rationale use of immunopharmacology and	K4														
		CO4	chemotherapy in the treatment UTI, STD and malignancy and		2	3	1	3	-	3	-	3	3	2	1	1	-	
		CO5	able to evaluate types of toxicity, principles of toxicology	K5	2	3	3	3	3	3	3	3	1	3	3	3	_	3
			BP602T		1.80		2.00		3.00			2.67	1.60			1.60	_	3.00
			To know about herbal drugs, Herbal Medicinal Products,															
			fundamentals of Good AgriculturePractices, Biodynamic															
		CO-1	Agriculture and Indian System of Medicine.	К3	3	3						3	3	3			2	
			To understand about nutraceuticals and interactions between	- 110	_	_												
		CO-2	herbs, drugs and food and health benefits of herbs.	K2	3	3						3	3			2		
	3T		To prepare herbal cosmetics, assess herbal excipients and															
53	BP603T	CO-3	herbal formulations.	K2	3	3						3	2			2		
	B		To appraise WHO and ICH guidelines for herbal drugs,															
		CO-4	patenting and regulatory requirements.	К3	2						2		3				3	
			To know about herbal drug industry and GMP requirements															
		CO-5	for manufacturing herbal drugs	K1	3	1							2				2	
			BP603T		2.80	2.50					2.00	3.00	2.60			2.00	2.33	
			Students will be able to understand the significance of															
			pharmacokinetics modeling, its basics parameters applied to															
		CO-1	ADME process.	К2	3	3	3								2			3.00
			Students will be able to identify the effect of ADME process				-											
		CO-2	and its variables on dosage regime.	К3	3	3	3								3			3.00
1)4T		Students will be able to analyze the compendial requirements															
54	3P604T	CO-3	of dissolution testing.	K2	3	3	3	2							3			3.00
	· ~		. ~															

1	ш	1		1	1	·		1	1	i						i
			Students will be able to determine the elimination rate		_		_									2.00
		CO-4	constant, AUCs and Clearance	K1	3	3	2							3		3.00
			Students will be able to explain the mechanism of drug		_		_									2.00
		CO-5	absorption and drug-drug interaction.	K2	3	3	2							3		3.00
			BP604T		3.00	3.00	2.60	2.00						2.80		3.00
			Students will be able to understand basic terms & principles of													
			enzyme technology, genetic engineering, protein engineering													
		CO-1	and biosensors.	K2	2		3	3				2		3	2	3.00
			Students will be able to apply principles of genetic engineering													
		CO-2	& enzymes in pharmaceutical industry.	K2	3		3	3				2		3	3	3.00
	605T		Students will be able to explain the concept of immunity and													
55	09		hybridoma technology for the production of vaccine and													
	ВР	CO-3	blood products.	K2	3		3	3				3		3	3	3.00
			Students will be able to understand the microbial genetics,													
		CO-4	biotransformation and mutation.	K2	3		3	3				3		3	3	3.00
			Students will be able to apply biotechnological techniques for													
		CO-5	the production of antibiotics & blood products.	K2	3		3	3				3		3	3	3
			BP605T		2.80		3.00	3.00				2.60		3.00	2.80	3.00
		60.4	Explain significance of quality in pharmaceutical	1/2	3		1		1	3		1	3	1		2.00
		CO-1	manufacturing	K2												
		CO-2	Explain role of Regulatory Agencies in deciding Quality	K2	1	2			1	3						1.00
		CO-2	Standards	K2										3		
			To have brief knowledge of personnel, surrounding facilities,		2	2			1							1.00
)6T	CO-3	material management of quality, manufacturing operation &	K2												
56	BP606T		its control within the production area											2		
	В	60.4	To learn documentation & its record, what is outsourcing, post	1/2	1	2			1		1					1.00
		CO-4	operational activities.	K2										2		
			To understand significance of calibration & validation in		2	2			2	3						2
		CO-5	quality assurance and concept of QbD	K2					-							_
			BP606T		1.60	2.00	1.00		1.20	3.00	1.00	1.00	3.00	2.00		1.40

			[Cth		1								ı		1			
			Synthesize, recrystallize and understand reaction mechanisms															
		60.4	involved in the	1/2	_		4	١ ,		_		4		4	2		2.00	
		CO-1	, , , , , , , , , , , , , , , , , , , ,	K3	3		1	. 2		2		1	1	1	2		3.00	
57	BP607P		Able to perform assay of drugs.	K2	3		2	1	-	2		1	1	1	2		3.00	
"	ВР6	CO-3	To study the interpretation of UV spectra of unknown drugs.	K2	3		2	2		2		2	1	1	2		3.00	
		CO-4	Able to draw structures and reactions using Chem sketch.	К3	3		3	3		2		1	1	1	2		3.00	
		CO-5	Able to draw structures and reactions using Chem draw.	K1	3		3	3		2		2	1	1	2		3.00	
			BP607P		3.00		2.20	2.20		2.00		1.40	1.00	1.00	2.00		3.00	
			understand application of commonly used instrument(s),															
		CO-1	describe calculation of dose, pharmacokinetic parameters of	K2														
			drug used for experiments on rodents.		1	-	-	-	1	2	3	1	1	1	1	-	-	-
		CO-2	record observations and make suitable inferences based on	K4														
			them by software(s) and videos.	11.7	2	1	3	3	2	1	2	2	1	1	1	1	-	-
			make use of software / computer simulated CDs or video															
			cassettes for demonstrating effect or mechanism of drug															
	مِي	CO-3	action acting on isolated different tissues from the laboratory	К3														
58	3P608P		animals which can minimize the use of experimental animals		_	_		١,	,	2	2	4	4	_				
	BP(for pharmacology practical. determination of acute skin, eye irritation / corrosion of a test		2	2	-	3	2	3	3	1	1	2	1	-	-	-
			substance, acute oral toxicity (LD50) of a drug and biostatistics															
		CO-4	methods in experimental pharmacology by simulated	К3														
			experiments.		1	2	3	2	2	2	2	1	1	1	1	_	_	1.00
			appraise experimental and biochemical relevance of drug (s) in		-												_	1.00
		CO-5	the treatment of respective disorder and correlation of	K5														
		00 5	pharmacology with related medical sciences.	113	2	_	2	_	1	2	-	2	3	_	2	_	_	-
			BP608P		1.60	1.67	2.67	2.67	1.60		2.50	1.40		1.25	1.20	1.00		1.00
			Students will be able to understand raw material as a source															
		CO-1	of herbal drugs by phytochemical screening.	K2	3					2					2			
	1	60.3	Students will be able to know herbal cosmetics and their															
		CO-2	evaluation.	К3	3	2				2		2	3		2			
	ЭЬ	CO-3	Students will be able to know the residual content in															
59	BP609P	CO-3	traditional preparation.	K2	2		3			2		1	2		2			
	ВР	CO-4	Students will be able to develop and evaluate different herbal															
		CO 4	formulations.	K4	3		3			3		3	2		1		2	
		CO-5	Students will be able to report the procedure in the designing															
		00 3	of monographs.	K4	2				3	2	3	3	2		1			
			BP609P		2.60	2.00	3.00		3.00	2.20	3.00	2.25	2.25		1.60		2.00	
		CO-1	Students will be able to develop your interest in a specific		3					2					1			
			career before permanent duties are offered.	K4														
		CO-2	Students will be able to apply skills in the application of theory	1/2	3	3				2		2			2			
			to practical work situations.	К3	-													
	<u>ط</u>	CO-3	Students will be able to develop skills and techniques directly	V A	2		3			2		2			2			
60	10P		applicable to your careers.	K4														

		_														
٥	١	вРб		Students will be able to build a good communication skill with												1
		ш	CO-4	coworkers and learn proper behavior of corporate life in					3	2		3	2	1		1
				industrial sector.	K4											
			CO-5	Students will be able to instill good moral values such as						2	'n		2	1		
			CO-3	responsibility, commitment and trust during their training.	K4						3		2	1		
				BP610P		2.67	3.00	3.00	3.00	2.00	3.00	2.33	2.00	1.40		

Fig.	ПТ			The student will be able to understand the universal and								T .		l	I	I		ı	
CO-1 Indica analysis The student will able to understand the interaction of matter Mith various electromagnetic radiation and its application in K2 3 2 3 2 2 2 2 3 3				The student will be able to understand the principle and															
The student will able to understand the interaction of matter with various electromagnetic radiation and its application in force analysis. The student will able to understand the different chromatographic techniques and their application in drug co.3 analysis. The student will able to understand the different chromatographic techniques and their application in drug co.3 analysis. The student will able to denderstand the different chromatographic techniques and their application in drug co.3 analysis. The student will able to denderstand the different chromatographic techniques and their application in drug co.3 analysis. The student will able to denderstand the different chromatographic techniques and their application in drug co.3 analysis. The student will able to dender the student control of the student will able to describe the techniques involved in pilot plant scale-up in pharmaceutical manufacturing. Students will be able to describe the techniques involved in co.3 and co			CO 1		νo	2		2	2		2		2	2	2	2	2	2.00	3.00
No. Part P			CO-1		KS	3			3							3	3	3.00	3.00
CO-2 drue analysis. K2 3 2 3 2 2 2 3 3 3																			
Figure F			CO 2	with various electromagnetic radiation and its application in	νa	2		2	2		2		2	2	2	2	2	2.00	3.00
CO-3 analysis. CO-4 analysis of drues usine various analytical instruments K2 2 2 3 2 1 2 2 3 2 3 2 1 2 2 3 2 3 2 3 2 3 2 3 2 3 3		11	CO-2	drug analysis The student will able to understand the different	NΖ	3			3						3		3	3.00	3.00
CO-3 analysis. CO-4 analysis of drues usine various analytical instruments K2 2 2 3 2 1 2 2 3 2 3 2 1 2 2 3 2 3 2 3 2 3 2 3 2 3 3	61	70																	
The student will able to perform quantitative and qualitative CO-4 analysis of druss using various analytical instruments K3 2 2 3 2 1 2 2 3 1 2.00		ВР	CO 2		V2	2		2	2		2		1	2	2	2	າ	2 00	3.00
CO-4 analysis of druss usine various analytical instruments K3 2 2 3 2 1 2 2 3 1 2.00			CO-3	i ·	ΝZ				3							3		3.00	3.00
The student will able to identify the structure of unknown K1 2 2 3 3 2 1 2 2 2 2 2 2 2 2			CO-4		K3	2		2	2		2		1	2	2	2	1	2.00	3.00
CO-5 compounds using various analytical instruments. K1 2 2 3 2 1 2 2 2 2 2 2 2 2		1	CO +	The student will able to identify the structure of unknown	1.3								_					2.00	3.00
Students will be able to describe the techniques involved in plantaceutical manufacturing. K2 3			CO-5		К1	2		2	3		2		1	2	2	2	2	2 00	3.00
Students will be able to describe the techniques involved in K2 3 3 2 2 2 2 2 2 2			00 3		11.2								_						3.00
CO-1 pilot plant scale-up in pharmaceutical manufacturing. Students will be able to understand the process of technology CO-2 transfer and its documentation. Students will be able to apply the filing process for drug CO-3 approval. Students will be able to apply the filing process for drug CO-3 approval. Students will be able to illustrate the concept of quality management systems and ISO standards applicable in the CO-4 pharmaceutical industry. Students will be able to describe the functioning of drug regulatory agencies in India and the documentation required CO-5 for new drug registration. Students will be able to describe the functioning of drug regulatory agencies in India and the documentation required CO-5 for new drug registration. SPPOZT Understand the adverse drug reaction and functions of Hospital Pharmacy. CO-1 Hospital Pharmacy. Understand therapeutic drug monitoring, hospital formularies and patient counseling IO Apply; policies or pharmacy and therapeutic committee to maintain the drug safety, Drug information service and uses of computer to retrieve the drug information, Requirement of pharmacist in hospital to involve in patient counseling, Education and training programmed and requirement of pharmacist in hospital to involve in patient counseling, Education and training programmed and requirement of history of patients, Clinical pharmacy, Implement the new budget in pharmacy and Rational use of OTC medications. CO-4 budget in pharmacy and Rational use of OTC medications. K2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	+					2.40		2.00	3.00		2.00	2	1.40	2.00	2.20	2.00	2.20	2.00	3.00
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CO-2 transfer and its documentation. K2 3 2 2 2 2 2 2 2 2		1				_						3		2		2			3.00
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regulatory agencies in India and the documentation required for new drug registration. Reprox Summaria			CO-4		К3	3				1									
BP702T BP702T				Students will be able to describe the functioning of drug								2		2		2			3
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CO-2 and patient counseling K2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3			CO-1		K2	3	3	3			3	3		3		3			3
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and evaluate the clinical laboratory test in Blood, Hemoglobin CO-5 and Urine. K2 3 3 3 3 3 3 3 3			CO-4		NΖ	3	3	3			3	3		3		-		 	3
CO-5 and Urine. K2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3																			
			CO-5	,	К2	3	3	3			3	3		3		3			3
PY/V51 KZ 13.0013.001 13.0015.001 13.001 13.001 13.001 1			555	BP703T	K2			_						3.00		3.00			3.00
			CO-1			3	3		3	2			2		2		3	3.00	

			_							-								
		CO-2	Research ability in formulation of targeted drug delivery system	К3	3	3	3	3	3	3	3	3	2	2	3	3	3.00	3.00
64	04T	CO-3	Selection of proper excipients and API for formulation of NDDS	K2	3	2	3	3	2	2	2	2	1	1	2	3	3.00	2.00
04	BP7	CO-4	Exploration of alternative routes for delivery of drug in the bod	К3	3	2	3	2	2	2	2	2	2	3	2	2	3.00	2.00
		CO-5	Thinking ability for research in the field of advanced drug delive	К3	3	3	3	3	3	3	3	3	3	3	3	3	3.00	3.00
			BP704T		3.00	3.00	3.00	3.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	3	3.00	2.00

			Student will able to perform extraction, isolation, identification and purification of the herbal drugs and															
		CO-1	nhytoconstituents	К3	3	2	3	3			2			2	2	1.00	3.00	2
			Utilization of different spectral techniques in analysis of drug,															
			determination of the metal and identification of unknown															
	5P	CO-2	compounds (natural and synthetic).	K3	2	2	3	3			2			2	2	1.00	3.00	2
65	3P705P		Student can evaluate different types of dosage form through			_	_	_			_			_				
	B	CO-3	chromatographic and spectral techniques.	K5	3	2	3	3			1			2	2	1.00	3.00	2
		60.4	The student will able to handle different instrument like HPLC,	V2	,	,	•	,			١,			,	,	1.00	2.00	2
		CO-4	UV. and IR. Student will able to perform different chromatographic	К3	2	2	3	3			2			2	2	1.00	3.00	3
		CO-5	techniques of herbal drugs/ formulation.	K2	3	2	3	3			1			2	2	1.00	3.00	2
		60 3	BP705P	I\Z	2.60		3.00	3.00			1.60			2.00		1.00	3.00	2.20
			DI 7031		2.00	2.00	3.00	3.00			1.00			2.00	2.00	1.00	3.00	2.20
			Apply theoretical knowledge to practical pharmaceutical	К3														
				NO.														
		CO-1	settings through hands-on training and project-based learning.	KS	3	3	2	2	2	2	1	2	1	1	2	3	3	
	00	CO-1			3	3	2	2	2	2	1	2	1	1	2	3	3	
	chool		settings through hands-on training and project-based learning.	K4	3	3	3	2	2	2	2	2	1	1 2		3	3	
	ce School	CO-2	settings through hands-on training and project-based learning. Evaluate pharmaceutical products and processes using scientific and regulatory principles. Implement quality, safety, and documentation standards	K4														
66	actice School	CO-2	settings through hands-on training and project-based learning. Evaluate pharmaceutical products and processes using scientific and regulatory principles. Implement quality, safety, and documentation standards based on GMP, GLP, and QA/QC practices.												2			
66	Practice	CO-2	settings through hands-on training and project-based learning. Evaluate pharmaceutical products and processes using scientific and regulatory principles. Implement quality, safety, and documentation standards based on GMP, GLP, and QA/QC practices. Utilize modern scientific tools, computational software, and AI	K4 K3	3	3	3	2	2	2	2	2	1	2	2	3	3	
66	Practice	CO-2 CO-3	settings through hands-on training and project-based learning. Evaluate pharmaceutical products and processes using scientific and regulatory principles. Implement quality, safety, and documentation standards based on GMP, GLP, and QA/QC practices. Utilize modern scientific tools, computational software, and AI techniques for formulation, analysis, and process	K4	3	3	3	2	1	2	3	2	2	3	2	3	3	
66	Practice	CO-2 CO-3	settings through hands-on training and project-based learning. Evaluate pharmaceutical products and processes using scientific and regulatory principles. Implement quality, safety, and documentation standards based on GMP, GLP, and QA/QC practices. Utilize modern scientific tools, computational software, and AI techniques for formulation, analysis, and process optimization.	K4 K3	3	3	3	2	2	2	2	2	1	2	2	3	3	
66	BP706PS Practice School	CO-2 CO-3	settings through hands-on training and project-based learning. Evaluate pharmaceutical products and processes using scientific and regulatory principles. Implement quality, safety, and documentation standards based on GMP, GLP, and QA/QC practices. Utilize modern scientific tools, computational software, and Al techniques for formulation, analysis, and process optimization. Demonstrate professional ethics, teamwork, communication,	K4 K3	3	3	3	2	1	2	3	2	2	3	2	3	3	
66	Practice	CO-2 CO-3	settings through hands-on training and project-based learning. Evaluate pharmaceutical products and processes using scientific and regulatory principles. Implement quality, safety, and documentation standards based on GMP, GLP, and QA/QC practices. Utilize modern scientific tools, computational software, and AI techniques for formulation, analysis, and process optimization. Demonstrate professional ethics, teamwork, communication, and report writing skills relevant to industrial and research	K4 K3	3	3 2 2	3	2 2 3	2 1 2	2 2	2 3	2	2	3	2 2 3	3 3	3 3	
66	Practice	CO-2 CO-3	settings through hands-on training and project-based learning. Evaluate pharmaceutical products and processes using scientific and regulatory principles. Implement quality, safety, and documentation standards based on GMP, GLP, and QA/QC practices. Utilize modern scientific tools, computational software, and Al techniques for formulation, analysis, and process optimization. Demonstrate professional ethics, teamwork, communication,	K4 K3	3 3 2	2 2	3 2 3	2	2 1 2 3	2 2 2	2 3 2	2 2 2 3	1 2 1	3 2	2 2 3	3	3	

			Student will be able to describe key concepts, theories and															
		CO-1		K2	3			3.00					1 00	2.00	2 00	3		
		CO-1	Student will be able to understand the importance of looking	NZ.	3			3.00					1.00	2.00	2.00		-	<u> </u>
		CO 2	after health , welfare and safety of staff.	K2	3			3					1	2	2	3		
		CO-2	Student will be able to recognize how operational problems	NΖ	3			3					1			3	-	<u> </u>
			and situations are handled in practice by undertaking and															
	4	60.3		K2	,			٠,					4	١,	ا م	2		
67	BP707P	CO-3	reporting at a hospital attachment. Student will be able to develop awareness of the	К3	3			3					1	2	2	3		
	ВР		responsibilities of senior hospital management, including															
			_ ·															
		60.4	understanding the role and functions of hospitals and their	1/2	_			2						١,	٦	2		
		CO-4	health care. Examine the patient observation charts for better personnel	К3	3			3					1	2	2	3		
		60.5	·	14.4	_			2						١,	٦	2		
		CO-5	management.	K4	3			3					1	2	2	3		
			BP707P		3.00			3.00					1.00	2.00	2.00	3		
		60.4	Understand the applications of Statistics and Biostatics in	1/2	_	_	_	2	_	_	_	_	_			2	2.00	2.00
		CO-1	Pharmacy	K2	3	2	2	3	2	2	2	2	2	1	3	3	3.00	2.00
	_	60.3	Understand various statistical techniques to solve statistical	1/2	_	2	_	_	_	_	_	٦	2		٦	2	2.00	2.00
68	BP801T	CO-2	problems	K2	3	3	3	3	2	2	2	2	2	1	3	3	3.00	2.00
08	3P8	CO-3	Solve statistical techniques in solving the problems.	К3	3	3	3	3	3	3	2	3	2	1	3	3	3.00	3.00
		CO-4	Analyze the statistical data using Excel.	K4	3	3	3	3	3	2	2	3	2	2	3	3	3.00	3.00
		CO-5	Evaluate optimized batches by using Factorial Design.	K5	3	3	3	3	3	3	2	3	2	2	3	3	3.00	3.00
			BP801T		3.00	2.80	2.80	3.00	2.60	2.40	2.00	2.60	2.00	1.40	3.00	3.00	3.00	2.60
			Student will be able to understand the drug monitoring															
			therapy and medication history of patients, Clinical pharmacy,															
			rational use of OTC medications and Implement the new															
		CO-1	budget in pharmacy.	K2	3	3	3	2	2	3	2	3	2	1	2	3	3	3
			Student will be able to evaluate the alternatives schemes or															
60)2T	CO-2	approaches implemented in the health care issues.	K2	3	2	2	2	2	2	3	2	3	3	3	2	3	2
69	BP802T	CO-3		K5	3	3	3	2	2	3	3	2	3	2	3	3	3	3
	<u>а</u>		Student will be able to understand the community services at															
		CO-4	rural, urban and school health care system.	K2	2	2	2	1	3	3	2	3	3	3	2	2	3	3
			Student will be to understand National health programs, its															
		CO-5	objectives, functioning and outcome of the diseases.	K2	3	2	2	1	2	3	3	2	3	3	3	2	3	3
			BP802T		2.80	2.40	2.40	1.60	2.20	2.80	2.60	2.40	2.80	2.40	2.60	2.40	3.00	2.80
			Student will be able to recall the fundamental principles of															
		CO-1	marketing, its concepts and techniques	K2		2.00	2.00		3.00	2.00	1.00	3.00			1.00			
			Student will be able to understand Product management in															
		CO-2	pharmaceutical industry.	K2	2	1	1					2						
	ы		Student will be able to Interpret and distinguish significance of															
70	BP803ET	CO-3	promotion activities involved in Pharmaceutical Marketing.	K2	1	3					2	2						
	P8		Student will be able to conceptuelize the Professional sales															1
	ద		<u>'</u>														1	
	B	CO-4	representation (PSR)	К3		2			2			2						
	B		·	K3 K2		2			2			2						

Ī			BP803ET		1.50	2.00	1.33		2.33	2.00	1.50	2.20			1.00			
		CO1	Students will be able to explain concepts of innovator and gene	K2	3	3	3	3	3	3	2	2	3			3	2.00	
		CO2	Students will be able to explain regulatory requirements for ap	K2	3	3	3	3	3	3	2	2	3			3	2.00	
	4ET	CO3	Students will be able to develop dossiers and their submission t	К3	2	3	3	3	3	3	2	2	3			3	2.00	
71	BP804ET	CO4	Students will be able to compare regulatory requirements of di	K2	3	3	3	3	3	3	2	2	3			3	2.00	
	В	CO5	Students will be able to conclude regulatory approval process a	K2	2	3	3	3	3	3	2	2	3			3	2	
			BP804ET		2.60		3.00	3.00	3.00							3.00	2.00	
72	BP809ET	CO-2 CO-3	Student will be able to memorize and recall the cosmetics, cosmeceutical products and cosmetic excipient Students will be able to apply the various formulation principles and building blocks of skin and hair care products. Students will be able to evaluate the various cosmetic products based on various parameters like measurement of in cosmetics, various skin types, introduction & MOA of antiperspirants and deodorants, Introduction and Students will be able to effectively analyze the snampoo, skin creams and tooth paste.	K2 K3 K4 K2	3 3 2 3		2	2							2 3 2 2			2.00 2.00 2.00 2.00 2.00
	,	CU-5	BP809ET	K4	2.60		2.00	2.00							2.20			2.00 2.00
73	BP812ET	CO-1 CO-2 CO-3 CO-4 CO-5	Understand the need of supplements by the different group of people to maintain healthy life. Understand the outcome of deficiencies in dietary supplements. application. Understand the regulatory and commercial aspects of dietary supplements including health claims. Understand the various regulatory bodies. BP 812ET	K2 K2 K2 K2 K2	3 2 2 2 2 2 2.2		2 2		3	3	3 3	3	3	2 2 2 2 2 2	2 2 2 2 3 2.2	3 3 3	3 3	3
74	BP814PW	CO-2 CO-3	Apply theoretical knowledge learned in classroom to solve a research problem Understanding the importance and applications of various subjects and their correlation in hypothesizing and solving research problem. Development of critical thinking and analytical skills through hands-on learning. Acquire various skills like Problem solving, data handling, presentation, documentation etc. Plan academic, career and personal interests via research experience. BP814PW	K2 K3 K3 K2 K3	2 2 1 2 2 1.80	2 1 2 2 1.80					1 1 1.00	1 2 1 1 1.20						1.00 1.00 1.00 1.00 1.00
		CO-1	Explain the different processes involved in manufacturing and production.	K2	3	3		3	3	3		2	2		2			2

			Describe use of advanced techniques and equipments encountered during industrial visit.	K2	3		3			2	2	2		2
75	BP815P		Implement Good Manufacturing Practices and disciplines prescribed in industry.	К3	3	3				2				2
	В	CO-4	Develop awareness about general workplace behaviour and build interpersonal and team skills.	К3	3	3		3		2				2
		CO-5	Prepare professional work reports and presentations	K2	3			3		2				2
			BP815P		3.00	3.00	3.00	3.00	3.00	2.00	2.00	2.00		2.00