CO-PO MATRIX

INDEX

1. COURSE OF STUDY FOR SEMESTER I

LIST OF SUBJECTS

Subject	Subject Names
BP101T	Human Anatomy & Physiology I (Theory)
BP102T	Pharmaceutical Analysis (Theory)
BP103T	Pharmaceutics I (Theory)
BP104T	Pharmaceutical Inorganic Chemistry (Theory)
BP105T	Communication Skill (Theory)
BP106RBT	Remedial Biology (Theory)
BP106RMT	Remedial Mathematics (Theory)
BP107P	Human Anatomy & Physiology I (Practical)
BP108P	Pharmaceutical Analysis (Practical)
BP109P	Pharmaceutics I (Practical)
BP110P	Pharmaceutical Inorganic Chemistry (Practical)
BP111P	Communication Skill (Practical)
BP112P	Remedial Biology (Practical)

Name of course: BP 101T Human Anatomy & Physiology-I (Theory)

Course Outcomes (Cos): Upon successful completion of this course, the student will be able to:	
CO101.1	Know about the basic cellular and tissue level of organization in human body.
CO101.2	Explain the gross morphology , structure and function of various organs of the human body.
CO101.3	Understand the various homeostatic mechanism and their imbalances in human body.
CO101.4	Understand the basic structure and function of different system of human body.
CO101.5	Know about formation, composition, function and circulation of body fluids.

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO101.1	3	1	1	2	2	3	1	2	3	2	2
CO102.2	3	1	1	2	2	3	1	2	3	2	2
CO103.3	3	1	1	2	2	3	1	2	3	2	2
CO104.4	3	1	1	2	2	3	1	2	3	2	2
CO105.5	3	1	1	2	2	3	1	2	3	2	2
Total	15	5	5	10	10	15	5	10	15	10	10
BP101T	3	1	1	2	2	3	1	2	3	2	2

Name of Course: BP102T: Pharmaceutical Analysis (Theory)

Course Outcomes (Cos): Upon successful completion of this course, the student will be able to:	
CO102.1	Understand the principles of volumetric and electro chemical analysis
CO102.2	Apply the acid base titrations for analysis of drug & Pharmaceuticals
CO102.3	Develop analytical skills
CO102.4	Compare & contrast different oxidation & reduction reactions using various reducing / Oxidizing agents

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO102.1	3	3	3	2	-	3	3	2	2	1	3
CO102.2	3	3	3	1	-	3	3	1	1	-	3
CO102.3	3	3	3	3	-	3	3	1	-	-	3
CO102.4	3	2	2	1	-	2	2	1	-	-	3
Total	12	11	11	7	-	11	11	5	3	1	12
BP102T	3	2.7	2.7	1.7	-	2.7	2.7	1.2	0.7	0.25	3

Name of Course: BP 103T Pharmaceutics I (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO103.1	Know the history of the profession of Pharmacy
CO103.2	Understand the basics of different dosage forms, pharmaceutical incompatibilities, and pharmaceutical calculations
CO103.3	Gain knowledge of the professional way of handling the prescription
CO103.4	Preparation of various conventional dosage forms

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO103.1	3	3	-	-	-	3	3	1	1	-	3
CO103.2	3	3	3	2	-	3	2	1	1	-	3
CO103.3	3	3	3	-	-	3	2	1	2	-	3
CO103.4	3	3	3	3	-	3	2	1	1	-	3
Total	12	12	9	5	-	12	9	4	5	-	12
BP103T	3	3	2.2	1.2	-	3	2.2	1	1.2	-	3

Name of Course: BP 104 Pharmaceutical Inorganic Chemistry (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO104.1	Know the sources and methods to determine the impurities in inorganic drugs
CO104.2	Understand the medicinal and pharmaceutical importance of inorganic compounds and its preparation
CO104.3	Understand the classification of electrolytes and its physiological role in replacement therapy, acid- base balance and role of dental products
CO104.4	Remember definition, classification, mechanism of action, properties, uses, official products and applications of Gastrointestinal Agents.
CO104.5	Remember definition, classification, mechanism of action, properties, uses, official products and applications of Expectorants, Emetics, Haematinics, Poison and antidote, astringents and Radio Pharmaceuticals

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO104.1	3	2	2	1	2	3	2	1	2	2	3
CO104.2	3	2	2	1	2	3	2	1	2	2	3
CO104.3	3	2	2	1	2	3	2	1	2	2	3
CO104.4	3	2	2	1	2	3	2	1	2	2	3
CO104.5	3	2	2	1	2	3	2	1	2	2	3
Total	15	10	10	5	10	15	10	5	10	10	15

BP104T	3	2	2	1	2	3	2	1	2	2	3

Name of Course: BP 105 T Communication Skills (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO105.1	To know the four types of skills, by which they can easily understand and read the sentences.
CO105.2	Understand the grammar part with its figure of speeches.
CO105.3	Communication with help of all the grammar topic's with its definition, methods, classification and its importance

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO105.1	3	2	2	1	2	2	2	1	2	2	3
CO105.2	3	2	2	1	2	2	2	1	2	2	3
CO105.3	3	2	2	1	2	2	2	1	2	2	3
Total	9	6	6	3	6	6	6	3	6	6	9
BP105T	3	3	2	1	2	2	2	1	2	2	3

Name of Course: BP106 RBT Remedial Biology (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO106.1	To know the classification and salient features of five kingdoms of life
CO106.2	To understand the basic components of anatomy & physiology of plant
CO106.3	To know understand the basic components of anatomy & physiology of animal with special reference to human

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO106.1	3	1	1	1	-	1	2	2	3	2	3
CO106.2	3	3	3	1	-	3	2	2	3	2	3
CO106.3	3	3	3	1	-	3	2	2	3	2	3
Total	9	7	7	3	-	7	6	6	9	6	9
BP106T	3	2.3	2.3	1	-	2.3	2	2	3	2	3

Name of Course: BP106T Remedial Mathematics (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO106.1	Define partial fraction, logarithms, functions, matrices ,analytical geometry, differential equation and laplace transform.
CO106.2	Describe types/theory/properties of logarithms, matrices and determinant, integration, differential equation and laplace transform.
CO106.3	Explain different methods and characteristics of logarithms, matrices, integration and differential equation.

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO106.1	1	2	1	2	2	3	1	2	3	2	2
CO106.2	1	1	1	3	2	3	1	2	3	2	2
CO106.3	1	2	3	2	2	3	1	2	3	2	2
Total	3	5	5	7	6	9	3	6	9	6	6
BP106T	1	2	3	2	2	3	1	2	3	2	2

Name of Course: BP 107 Human Anatomy & Physiology-I (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO107.1	Know the basic techniques , functioning and application of different instrument used in Human Anatomy & Physiology Laboratory.
CO107.2	Identify the various tissues and organs of different system of human body according to their macroscopic and microscopic study
CO107.3	Perform various experimental techniques related to physiology like blood group determination, measurement of blood pressure, heart rate and pulse rate
CO107.4	Perform different hematological techniques to find out the pathological conditions like determination of bleeding time, clotting time, Hb content, blood cell count, erythrocyte sedimentation rate etc.

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO107.1	3	2	1	2	2	3	1	2	3	2	2
CO107.2	3	2	1	3	2	3	1	2	3	2	2
CO107.3	3	2	3	2	2	3	1	2	3	2	2
CO107.4	3	2	3	2	2	3	1	2	3	2	2
Total	12	8	8	9	8	12	4	8	12	8	8
BP107P	3	2	2	2.2	2	3	1	2	3	2	2

Name of Course: BP108P: Pharmaceutical Analysis (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO108.1	Explain principle, procedure involved in limit tests, and assay by volumetric and electrochemical methods.
CO108.2	Perform limit test and assay of compounds by volumetric and electrochemical methods using appropriate analytical skill.
CO108.3	Perform calculations for percentage purity of compounds.

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO108.1	3	3	3	2	-	3	3	2	2	1	3
CO108.2	3	3	3	3	-	3	3	2	1	-	3
CO108.3	3	3	3	2	-	3	3	1	-	-	3
Total	9	9	9	7	-	9	9	5	--	-	9
BP108P	3	3	3	2.3	-	3	3	1.6	-	-	3

Name of Course: BP 109P Pharmaceutics I (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO109.1	Understand preparation of various conventional dosage forms
CO109.2	Understand principal of formulation
CO109.3	Understand preparation of labels for various dosage forms

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO109.1	3	3	2	3	1	3	2	1	2	-	3
CO109.2	3	2	3	-	1	-	-	1	1	-	3
CO109.3	3	2	-	-	1	-	2	1	2	-	3
Total	9	7	5	3	3	3	4	3	5	-	9
BP109P	3	2.3	1.6	1	1	1	1.3	1	1.2	-	3

Name of Course: BP 110P Pharmaceutical Inorganic Chemistry (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO110.1	Know the basic about impurities in inorganic compounds
CO110.2	Identify various inorganic compounds with identification tests
CO110.3	To perform purity test for inorganic compounds
CO110.4	Preparation of inorganic compounds

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO110.1	3	2	2	1	2	3	2	1	2	2	3
CO110.2	3	2	2	1	2	3	2	1	2	2	3
CO110.3	3	2	2	1	2	3	2	1	2	2	3
CO110.4	3	2	2	1	2	3	2	1	2	2	3
Total	12	8	8	4	8	12	8	4	8	8	12
BP110P	3	2	2	1	2	3	2	1	2	2	3

Name of Course: **BP111 Communication Skill (Practical)**

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO111.1	Define basic terminologies related to communication skill.
CO111.2	Describe Conversation, Interview skill, communication style, listening skill, presentation technique, e-mail etiquettes and their importance.
CO111.3	Demonstrate effective oral and written communication skills.
CO111.4	Execute the conversation in different situations with appropriate pronunciation.

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO111.1	3	2	2	1	2	2	2	1	2	2	3
CO111.2	3	2	2	1	2	2	2	1	2	2	3
CO111.3	3	2	2	1	2	2	2	1	2	2	3
CO111.4	3	2	2	1	2	2	2	1	2	2	3
Total	12	8	8	4	8	8	8	4	8	8	12
BP111P	3	2	2	1	2	2	2	1	2	2	3

Name of Course: **BP112 RBP Remedial Biology (Practical)**

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO112.1	To understand basic experiments related to microscope, section setting techniques
CO112.2	To identify parts of plants, cell and its inclusions and bones
CO112.3	To perform determination of blood group, blood pressure and tidal volume

MAPPING OF COURSE OUTCOMES TO PERFORM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO201.1	3	1	1	1	-	1	2	2	3	2	3
CO201.2	3	3	3	1	-	3	2	2	3	2	3
CO201.3	3	3	3	1	-	3	2	2	3	2	3
Total	9	9	7	3	-	7	6	6	9	6	9
BP101T	3	3	2.3	1	-	2.3	2	2	3	2	3

2. COURSE OF STUDY FOR SEMESTER II

Subject	Subject Names
BP201T	Human Anatomy & Physiology-Il (Theory)
BP202T	Pharmaceutical Organic Chemistry (Theory)
BP203T	Biochemistry (Theory)
BP204T	Pathophysiology (Theory)
BP205T	Computer Application in Pharmacy (Theory)
BP206T	Environment Science (Theory)
BP207P	Human Anatomy & Physiology II (Practical)
BP208P	Pharmaceutical Organic Chemistry (Practical)
BP209P	Biochemistry (Practical)
BP210P	Computer Application in Pharmacy (Practical)

Name of Course: BP 201T Human Anatomy & Physiology-ll (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO201.1	To understand the gross morphology, structure and functions of various organ of Human Body
CO201.2	To understand the various interlinked mechanisms for normal functioning of body.
CO201.3	To understand coordinated working pattern of different organs of each system.
CO201.4	To understand the various physiological process, biochemical parameters, and its role and consequence of imbalances.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO201.1	3	1	1	2	2	3	1	1	3	1	3
CO201.2	3	1	1	2	2	3	1	1	3	1	3
CO201.3	3	1	1	2	2	3	1	1	3	1	3
CO201.4	3	1	1	2	2	3	1	1	3	1	3
Total	12	4	4	8	8	12	4	4	12	4	12
BP101T	3	1	1	2	2	3	1	1	3	1	3

Name of Course: BP202T: Pharmaceutical Organic Chemistry (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO202.1	To understand the structure, nomenclature and the type of isomerism of the organic compound
CO202.2	To understand the reaction, name the reaction and orientation of reactions
CO202.3	To understand the account of reactivity, stability of organic compounds
CO202.4	To understand structure & uses of organic compounds

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO202.1	3	2	2	1	2	3	2	1	2	2	3
CO202.2	3	2	2	1	2	3	2	1	2	2	3
CO202.3	3	2	2	1	2	3	2	1	2	2	3
CO202.4	3	2	2	1	2	3	2	1	2	2	3
Total	12	8	8	4	8	12	8	4	8	8	12
BP102T	3	2	2	1	2	3	2	1	2	2	3

Name of Course: BP 203 T BIOCHEMISTRY (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO203.1	Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes.
CO203.2	Understand the metabolism of nutrient molecules in physiological and pathological conditions.
CO203.3	Understand the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO203.1	3	3	1	3	2	2	3	2	3	3	2
CO203.2	3	3	1	3	2	2	3	2	3	3	2
CO203.3	3	3	1	3	2	2	3	2	3	3	2
Total	9	9	3	9	6	6	9	6	9	9	6
BP103T	3	3	1	3	2	2	3	2	3	3	2

Name of Course: BP 204 Pathophysiology (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO204.1	To understand the etiology and pathogenesis of the selected disease states
CO204.2	To understand signs and symptoms of the disease
CO204.3	To understand the complications of the diseases
CO204.4	To understand the baseline knowledge required to practice medicine safely, confidently, rationally and effectively

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO204.1	3	-	2	-	-	1	1	-	1	1	3
CO204.2	3	-	3	2	-	2	2	1	2	2	3
CO204.3	3	-	3	2	-	2	2	1	2	2	3
CO204.4	3	2	2	2	1	2	2	1	2	2	3
Total	12	2	10	6	1	7	7	3	7	7	12
BP104T	3	0.5	2.5	1.5	0.25	1.75	1.75	1	1.75	1.75	3

Name of Course: BP205 Computer Application in Pharmacy (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO205.1	To learn to calculate the number system and learn to plan how to develop information system
CO205.2	To understand the different web technologies and database software
CO205.3	To understand the applications of computer in pharmacy
CO205.4	To understand the concepts of bioinformatics

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO205.1	3	2	2	1	2	3	2	1	2	2	3
CO205.2	3	2	2	1	2	3	2	1	2	2	3
CO205.3	3	2	2	1	2	3	2	1	2	2	3
CO205.4	3	2	2	1	2	3	2	1	2	2	3
Total	12	8	8	4	8	12	8	4	8	8	12
BP105T	3	2	2	1	2	3	2	1	2	2	3

Name of Course: BP206T Environment Science (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO206.1	Create awareness about environmental problems among learners.
CO206.2	Impart basic knowledge about the environment and its allied products.
CO206.3	Motivate learners to participate in environment protection and environment improvement.
CO206.4	Acquire skills to help the concerned individuals in identifying and solving environmental problems.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO206.1	-	3	2	2	2	1	-	1	2	2	3
CO206.2	-	2	2	2	2	1	-	1	2	2	3
CO206.3	-	2	2	1	2	1	-	1	2	2	3
CO206.4	-	2	2	1	2	1	-	1	2	2	3
Total	-	9	8	6	8	4	-	4	8	8	12
BP106T	-	2.2	2	1.5	2	1	-	1	2	2	3

Name of Course: BP 207 P Human Anatomy & Physiology-II (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO207.1	To identify the various tissues and organs of different systems of human body.
CO207.2	To explain the gross morphology, structure and functions of various organs of the human body
CO207.3	To perform and learn about the experiments related to various physiological process such as Neurological reflex activity, Visual acquity etc.
CO207.4	To perform the tests for different physiological parameters such as recording of body temperature, Tidal volume, total blood count , BMI etc. to find out the pathological conditions

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO207.1	3	1	1	1	2	2	2	2	2	2	3
CO207.2	3	3	2	2	2	1	2	2	2	2	3
CO207.3	3	2	2	3	2	2	2	2	2	2	3
CO207.4	3	2	2	2	2	2	1	2	2	2	3
Total	12	8	7	8	8	7	7	8	8	8	12
BP207P	3	2	1.75	2	2	1.75	1.75	2	2	2	3

Name of Course: BP208P: Pharmaceutical Organic Chemistry I (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO208.1	To perform systematic qualitative analysis of unknown organic compounds
CO208.2	To explain preparation of suitable solid derivative from organic compounds
CO208.3	To understand the identification of unknown compound based on physical constant
CO208.4	To understand the construction of molecular models

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO208.1	3	2	2	1	2	3	2	1	2	2	3
CO208.2	3	2	2	1	2	3	2	1	2	2	3
CO208.3	3	2	2	1	2	3	2	1	2	2	3
CO208.4	3	2	2	1	2	3	2	1	2	2	3
Total	12	8	8	4	8	12	8	4	8	8	12
BP208P	3	2	2	1	2	3	2	1	2	2	3

Name of Course: BP 209 P BIOCHEMISTRY (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO209.1	To perform chemical tests for identification of carbohydrates, proteins and urine for abnormal constituents.
CO209.2	To analyse carbohydrates, proteins, blood sugar, blood creatinine and blood cholesterol by colorimetry
CO209.3	To understand the effect of temperature, substrate concentration on the activity of the salivary amylase enzyme.
CO209.4	To understand the effect of salivary amylase on the hydrolysis of starch and activity of salivary amylase
CO209.5	To understand preparation of buffer solutions.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO209.1	3	3	2	2	3	2	2	2	3	1	3
CO209.2	3	3	2	2	3	2	2	2	3	1	3
CO209.3	3	3	2	2	3	2	2	2	3	1	3
CO209.4	3	3	2	2	3	2	2	2	3	1	3
CO209.5	3	3	2	2	3	2	2	2	3	1	3
Total	15	15	10	10	15	10	10	10	15	5	15
BP209P	3	3	2	2	3	2	2	2	3	1	3

Name of Course: BP210P Computer Application in Pharmacy (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO210.1	To Design a questionnaire using a word processing package & Create a HTML web page
CO210.2	To Retrieve the information of a drug and its adverse effects using online tools
CO210.3	To prepare reports using MS Access
CO210.4	To prepare labels using MS word

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO210.1	1	1	1	1	1	1	1	1	1	1	1
CO210.2	1	1	1	1	1	1	1	1	1	1	1
CO210.3	1	1	1	1	1	1	1	1	1	1	1
CO210.4	1	1	1	1	1	1	1	1	1	1	1
Total	4	4	4	4	4	4	4	4	4	4	4
BP2010P	1	1	1	1	1	1	1	1	1	1	1

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

3. COURSE OF STUDY FOR SEMESTER III

Subject	Subject Names
BP301T	Pharmaceutical Organic Chemistry II
BP302T	Physical Pharmaceutics I (Theory)
BP303T	Pharmaceutical Microbiology (Theory)
BP304T	Pharmaceutical Engineering (Theory)
BP305P	Pharmaceutical Organic Chemistry II (Practical)
BP306P	Physical Pharmaceutics I (Practical)
BP307P	Pharmaceutical Microbiology (Practical)
BP308P	Pharmaceutical Engineering (Practical)

Name of the Course: BP301T Pharmaceutical Organic Chemistry II (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO301.1	Understand how to write the structure, name and the type of isomerism of the organic compound
CO301.2	Understand and able to write the reaction, name the reaction and orientation of reactions
CO301.3	Understand the reactivity/stability of compounds
CO301.4	Understand the preparation of organic compounds

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO301.1	3	3	3	2	-	2	2	1	1	-	3
CO301.2	3	3	2	1	-	2	1	1	1	-	3
CO301.3	3	3	2	1	-	2	1	1	1	-	3
CO301.4	3	3	3	2	-	2	1	1	1	-	3
Total	12	12	10	6	-	8	5	4	4	-	12
BP301T	3	3	2.5	1.5	-	2	1.25	1	1	-	3

Name of Course: BP302T Physical Pharmaceutics I (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO302.1	Understand the various physical phenomena involved in designing various formulations.
CO302.2	Determine various physical parameters of drugs and formulations.
CO302.3	Predict and anticipate in-process problems based on raw materials and manufacturing methods
CO302.4	Apply the knowledge of physical phenomena in selecting raw materials, including drugs, and inactive ingredients of appropriate quality leading to stable formulations.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO302.1	3	3	3	2	-	2	2	1	1	-	3
CO302.2	3	3	2	1	-	2	1	1	1	-	3
CO302.3	3	3	2	1	-	2	1	1	1	-	3
CO302.4	3	3	3	2	-	2	1	1	1	-	3
Total	12	12	10	6	-	8	5	4	4	-	12
BP302T	3	3	2.5	1.5	-	2	1.25	1	1	-	3

Name of Course: BP 303T Pharmaceutical Microbiology (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO303.1	Understand methods of identification, cultivation and preservation of various microorganisms
CO303.2	To understand the importance and implementation of sterilization in pharmaceutical processing and industry.
CO303.3	to get knowledge of sterility testing of pharmaceutical products
CO303.4	Carried out microbiological standardization of Pharmaceuticals.
CO303.5	Understand the cell culture technology and its applications in pharmaceutical industries

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO303.1	3	2		1	-	-		1	-	1	
CO303.2	3	2	2	1	-	-		1		1	
CO303.3	3	2		1	-	-		1		1	
CO303.4	3	2		1	-	-		1		0	
CO303.5	3	2		2	-	-		1		2	2
Total	15	10		6	-	-		5	-	5	
BP303T	3	2		1.2	-	-		1		1	

Name of Course: BP304T Pharmaceutical Engineering (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO304.1	To know various unit operations used in Pharmaceutical industries
CO304.2	To understand the material handling techniques
CO304.3	To perform various processes involved in pharmaceutical manufacturing process
CO304.4	To carry out various test to prevent environmental pollution

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO304.1	3	3	2	2	-	-	-	1	-	2	2
CO304.2	3	2	2	2	-	-	-	1	-	2	2
CO304.3	3	2	2	2	-	-	-	1	-	2	2
CO304.4	3	1	2	2	-	-	-	1	-	2	2
Total	12	8	8	8	-	-	-	4	-	8	8
BP304T	3	2	2	2	-	-	-	1	-	2	2

Name of the Course: BP305P Pharmaceutical Organic Chemistry II (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO305.1	Carry out recrystallization of drugs
CO305.2	Demonstrate the steam distillation
CO305.3	Carry out the acid value, saponification value, iodine value
CO305.4	Carry out the synthesis based on hydrolysis, oxidation, reduction, halogenation, diazotization reaction

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO305.1	3	2		1	-	-		1	-	1	
CO305.2	3	2		1	-	-		1		1	
CO305.3	3	2		1	-	-		1		1	
CO305.4	3	2		1	-	-		1		1	
Total	12	8		4	-	-		4		4	
BP305P	3	2		1	-	-		1		1	

Name of the Course: BP306P Physical Pharmaceutics I – Practical (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO306.1	Carry out recrystallization of drugs
CO306.2	Demonstrate the steam distillation
CO306.3	Carry out the acid value, saponification value, iodine value
CO306.4	Carry out the synthesis based on hydrolysis, oxidation, reduction, halogenation, diazotization reaction

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO306.1	3	3	3	2	1	2	1	1	1	-	3
CO306.2	3	1	1	2	1	2	1	1	1	-	3
CO306.3	3	1	1	2	1	2	1	1	1	-	3
CO306.4	3	3	3	2	1	2	1	1	1	-	3
Total	12	8	8	8	4	8	4	4	4	-	12
BP306P	3	2	2	2	1	2	1	1	1	-	3

Name of Course: BP 307P Pharmaceutical Microbiology (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO307.1	Introduction and study of different equipments and its functions
CO307.2	Subculturing of bacteria ans Isolation of Pure culture and identification of bacteria by different staining methods
CO307.3	Perform microbiological assay of antibiotics and biochemical tests
CO307.4	to perform sterility testing of injection and water analysis by MPN no

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO307.1	3	1	1	2	-	1	-	-	-	-	2
CO307.2	3	2	2	2	1	2	1	1	1	1	2
CO307.3	3	2	2	2	1	2	1	-	1	2	2
CO307.4	3	2	2	2	1	2	1	-	1	2	2
Total	12	7	7	8	3	7	3	1	3	4	8
BP307P	3	2.3	2.3	2	0.75	2.3	0.75	0.25	0.75	1	2

Name of Course: BP308P Pharmaceutical Engineering (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO308.1	To understand various unit operations Drying, Mixing, Distillation
CO308.2	To Understand equipments used for Drying, Distillation, Mixing, Tablet Compression

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO308.1	3	3	3	3	-	-	-	-	-	-	-
CO308.2	3	3	3	3	-	-	-	-	-	-	-
Total	6	6	6	6	-	-	-	-	-	-	-
BP308 P	3	3	3	3	-	-	-	-	-	-	-

4.COURSE OF SYUDY FOR SEMESTER IV

Subject	Subject Names
BP401T	Pharmaceutical Organic Chemistry III (Theory)
BP402T	Medicinal Chemistry 1 (Theory)
BP403T	Physical Pharmaceutics || (Theory)
BP404T	Pharmacology I (Theory)
BP405T	Pharmacognosy and phytochemistry I (Theory)
BP406P	Medicinal Chemistry I (Practical)
BP407P	Physical Pharmaceutics II (Practical)
BP408P	Pharmacology I (Practical)
BP409P	Pharmacognosy and phytochemistry | (Practical)

Name of the coarse: BP401T pharmaceutical organic chemistry III(Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO401.1	Understand the methods of preparation of organic compounds
CO401.2	Understand the concept of stereochemistry of various compounds
CO401.3	Understand the medicinal uses of organic compounds

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO401.1	3	3	3	3	-	-	-	1	-	-	-
CO401.2	3	2	3	3	-	-	-	1	-	-	-
CO401.3	3	2	3	3	-	-	-	1	-	-	-
Total	9	7	9	9	-	-	-	3	-	-	-
BP401T	3	2.3	3	3	-	-	-	1	-	-	-

Name of Course: BP402T Medicinal Chemistry I - Theory

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO402.1	Understand the chemistry of drugs with respect to pharmacological activity
CO402.2	Understand the metabolic pathways, adverse effects of various drugs
CO402.3	Understand the SAR of various class of drugs
CO402.4	Understand the chemical synthesis of given drugs

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO402.1	3	3	3	3	-	-	-	1	-	-	
CO402.2	3	2	3	3	-	-	-	1	-	-	
CO402.3	3	2	3	3	-	-	-	1	-	-	
CO402.4	3	2	3	3	-	-	-	1	-	-	
Total	12	9	12	12				4			
BP402T	3	2.2	3	3				1			

Name of Course: BP403T Physical Pharmaceutics II (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
C0403. 1	Understand various physicochemical properties of drug molecules in the designing the dosage forms
CO403.2	Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations
CO405.3	Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO403.1	3	3	3	3	-	-	-	1	-	-	
CO403.2	3	2	3	3	-	-	-	1	-	-	
CO403.3	3	2	3	3	-	-	-	1	-	-	
Total	9	7	9	9				3			
BP403T	3	2.3	3	3				1			

Name of Course: BP404T Pharmacology (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO404.1	Explain the general principles of pharmacology
CO404.2	Describe the pharmacokinetic, pharmacodynamic, adverse drug reactions and drug interactions.
CO404.3	Explain drug discovery and clinical evaluation of new drugs.
CO404.4	Explain the drugs acting on the peripheral nervous system.
CO404.5	Describe the drugs acting on the central nervous system.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO404.1	3	_	2	2	_	2	_	2	2	1	1
CO404.2	3	_	2	2	_	2	_	2	2	1	1
CO404.3	3	_	2	2	_	2	_	2	2	1	2
CO404.4	3	_	2	2	_	2	_	2	2	1	2
CO404.5	3	_	2	2	_	2	_	2	2	1	1
Total	15		10	10		10		10	10	5	7
BP404T	5		2	2		2		2	2	1	1.4

Name of Course: BP405T Pharmacognosy & Phytochemistry

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO405.1	To know the techniques in the cultivation and production of crude drugs
CO405.2	To know the crude drugs, their uses and chemical nature
CO405.3	To know the evaluation techniques for the herbal drugs
CO405.4	To carry out the microscopic and morphological evaluation of crude drugs

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO405.1	3	1	3	3	_	1	2	_	1	3	2
CO405.2	3	1	3	3	_	1	2	_	1	3	2
CO405.3	3	1	3	3	_	1	2	_	1	3	2
CO405.4	3	1	3	3	_	1	2	_	1	3	2
Total	12	4	12	12		4	8		4	12	8
BP405T	3	1	3	3		1	2		1	3	2

Name of Course: BP406P Medicinal Chemistry I – Practical

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO406.1	Understand the synthesis of various drugs
CO406.2	Understand the assays of various drugs
CO406.3	Understand the partition co efficient of drugs

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO406.1	3	3	3	3	-	-	-	-	-	-	-
CO406.2	3	3	3	3	-	-	-	-	-	-	-
CO406.3	3	3	3	3	-	-	-	-	-	-	-
Total	9	9	9	9							
BP406T	3	3	3	3							

Name of Course BP407P Physical Pharmaceutics II-Practical

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO407.1	Explain fundamental concepts of micromeritic properties, viscosity, disperse system, sedimentation volume, and chemical kinetics
CO407.2	Describe principle, working and applications of basic and advanced techniques, equipments used in determination of micromeritic properties, viscosity, sedimentation volume, and chemical kinetics
CO407.3	Demonstrate various experiments of micromeritic properties, viscosity, sedimentation volume and chemical kinetics.
CO407.4	Operate different pharmaceutical laboratory instruments used in the determination of micromeritic properties, viscosity, sedimentation volume and chemical kinetics.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO407.1	3	3	3	3	-	-	-	-	-	-	-
CO407.2	3	3	3	3	-	-	-	-	-	-	-
CO407.3	3	3	3	3	-	-	-	-	-	-	-
CO407.4	3	3	3	3	-	-	-	-	-	-	-
Total	12	12	12	12							
BP407P	3	3	3	3							

Name of Course: BP408 P Pharmacology I (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO408.1	Describe the basic and commonly used instruments for screening of various activities in experimental pharmacology
CO408.2	Explain commonly used laboratory animals and CPCSEA guidelines for maintenance of experimental animals
CO408.3	Describe various laboratory techniques used for blood collection, anaesthesia and euthanasia.
CO408.4	Compare different routes of drug administration in rat/ mice
CO408.5	Demonstrate effect of drugs on cilliary motility and rabbit eye.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO408.1	3	1	2	2	_	1	_	2	2	1	1
CO408.2	3	1	2	2	_	1	_	2	2	1	1
CO408.3	3	1	2	2	_	1	_	2	2	1	1
CO408.4	3	1	2	2	_	1	_	2	2	1	1
CO408.5	3	1	2	2	_	1	_	2	2	1	1
Total	15	5	10	10		5		10	10	5	5
BP408P	3	1	2	2		1		2	2	1	1

Name of Course BP409P Pharmacognosy and Phytochemistry I Practical

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO409.1	Explain various methods for evaluation of crude drugs.
CO409.2	Demonstrate proficiency in handling microscopes, chemicals and other laboratory equipment.
CO409.3	Select appropriate method for evaluation of crude drugs
CO409.4	Analyse crude drugs on the basis of their physical, chemical, and microscopical features.
CO409.5	Discuss the possible factors affecting quality of crude drugs.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO409.1	3	1	3	3	_	1	2	_	1	3	2
CO409.2	3	1	3	3	_	1	2	_	1	3	2
CO409.3	3	1	3	3	_	1	2	_	1	3	2
CO409.4	3	1	3	3	_	1	2	_	1	3	2
CO409.5	3	1	3	3	_	1	2	_	1	3	2
Total	15	5	15	15		5	10		5	15	10
BP409P	3	1	3	3		1	2		1	3	2

5. COURSE OF SYUDY FOR SEMESTER V

Subject	Subject Names
BP501T	Medicinal Chemistry II (Theory)
BP502T	Industrial Pharmacy 1 (Theory)
BP503T	Pharmacology II (Theory)
BP504T	Pharmacognosy and phytochemistry II (Theory)
BP505T	Pharmaceutical Jurisprudence (Theory)
BP506P	Industrial Pharmacy I (Practical)
BP507P	Pharmacology II (Practical)
BP508P	Pharmacognosy and Phytochemistry II (Practical)

Name of Course: BP501T Medicinal Chemistry II (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO501.1	To understand chemistry of drugs with respect to their pharmacological activity
CO501.2	To understand the drug metabolic pathways, adverse effect and therapeutic value of drugs
CO501.3	To understand the Structural Activity Relationship of different class of drug
CO501.4	To Study the chemical synthesis of selected drug

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO501.1	2	3	2	3	-	-	-	1	-	-	-
CO501.2	3	2	2	3	-	-	-	2	-	-	-
CO501.3	3	2	3	2	-	-	-	2	-	-	-
CO501.4	3	2	3	3	-	-	-	2	-	-	-
Total	11	9	10	11	-	-	-	7	-	-	-
BP101T	3	2.2	2.5	3	-	-	-	2	-	-	-

Name of Course: BP502T Industrial Pharmacy I (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO502.1	To understand the physical & chemical properties of powders & liquids.
CO502.2	To study the formulation & preparation of tablet capsules & liquid oral using established procedures.
CO502.3	To formulate parenteral & ophthalmic preparation& also to know different types of container required for preparation..
CO502.4	To understand the formulation & preparation of cosmetic preparation, pharmaceutical aerosol & to understand different packaging material.

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO502.1	3	3	3	2	2	1	1	1	1	1	2
CO502.2	3	3	3	2	1	1	3	1	1	1	1
CO502.3	3	3	3	3	1	3	1	1	1	1	1
CO502.4	3	3	3	3	1	3	1	1	1	1	1
Total	12	12	12	10	5	8	6	4	4	4	5
BP502T	3	3	3	2.5	1.25	2	1.5	1	1	1	1.25

Name of Course: BP503T Pharmacology II (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO503.1	Understand the mechanism of drug action and its relevance in the treatment of different diseases
CO503.2	Demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments
CO503.3	Demonstrate the various receptor actions using isolated tissue preparation
CO503.4	Appreciate correlation of pharmacology with related medical sciences

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO503.1	3	2	3	3	1	1	1	3	3	3	3
CO503.2	3	3	3	2	1	1	2	2	2	2	3
CO503.3	3	3	3	2	2	3	3	3	3	3	3
CO503.4	3	3	3	1	2	3	3	3	3	3	3
Total	12	11	12	8	6	8	9	11	11	11	12
BP103T	3	3	3	2	1.5	2	2.25	3	3	3	3

Name of Course: BP504T Pharmacognosy and Phytochemistry II (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO 504.1	To know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents
CO 504.2	To understand the biosynthesis of Secondary metabolite
CO 504.3	To study phytochemistry and pharmacology of secondary metabolite
CO 504.4	To carryout isolation and identification of phytoconstituents

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO 504.1	3	1	3	3	_	1	2	_	1	3	2
CO 504.2	3	1	3	3	_	1	2	_	1	3	2
CO 504.3	3	1	3	3	_	1	2	_	1	3	2
CO 504.4	3	1	3	3	_	1	2	_	1	3	2
Total	12	4	12	12		4	8		4	12	8
BP103T	3	1	3	3		1	2		1	3	2

Name of Course: BP505T Pharmaceutical Jurisprudence II (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO 505.1	Interpret Pharmaceutical Legislation
CO 505.2	Understand pricing of drugs & pharmaceuticals
CO 505.3	Summarize offences & penalties concerned with laws for drugs and pharmaceuticals
CO 505.4	Understand an insight into Drug Regulatory Affairs

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO 505.1	3	1	2	1	1	3	3	1	3	1	3
CO 505.2	3	1	2	1	1	3	3	1	3	1	3
CO 505.3	3	1	2	1	1	3	3	1	3	1	3
CO 505.4	3	1	2	1	1	3	3	1	3	1	3
Total	12	4	8	4	4	12	12	4	12	4	12
BP101T	3	1	2	1	1	3	3	1	3	1	3

Name of Course: BP507P Pharmacology II (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO 507.1	Understand In-Vitro Pharmacology and Physiological salt solutions.
CO 507.2	Understand the mechanism and effect of drugs on various animal tissues/organs
CO 507.3	Understand the Bioassay of various drugs on animal models
CO 507.4	Understand drug antagonism and PA2 value

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO 507.1	3	3	2	3	1	1	2	2	3	3	3
CO 507.2	3	3	2	3	1	1	2	2	3	3	3
CO 507.3	3	3	2	3	1	1	2	2	3	3	3
CO 507.4	3	3	2	3	1	1	2	2	3	3	3
Total	12	12	8	12	4	4	8	8	12	12	12
BP507P	3	3	2	3	1	1	2	2	3	3	3

Name of Course: BP508P Pharmacognosy and Phytochemistry II (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO508.1	To Study morphology and microscopical study of crude drugs
CO508.2	To perform the extraction and isolation of phytoconstituents, Volatile oil and its identification test & TLC
CO508.3	To perform TLC of herbal Extracts
CO508.4	Analysis of Phytoconstituents by Chemical tests

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO508.1	3	1	3	3	_	1	2	_	1	3	2
CO508.2	3	1	3	3	_	1	2	_	1	3	2
CO508.3	3	1	3	3	_	1	2	_	1	3	2
CO508.4	3	1	3	3	_	1	2	_	1	3	2
Total	12	4	12	12		4	8		4	12	8
BP508P	3	1	3	1		1	2		1	3	2

6. COURSE OF SYUDY FOR SEMESTER VI

Subject	Subject Names
BP601T	Medicinal Chemistry-Ill (Theory)
BP602T	Pharmacology Ill (Theory)
BP603T	Herbal Drug Technology (Theory)
BP604T	Bio pharmaceutics and Pharmacokinetics (Theory)
BP605T	Pharmaceutical Biotechnology (Theory)
BP606P	Quality Assurance (Theory)
BP607P	Medicinal Chemistry IV (Practical)
BP608P	Pharmacology III (Practical)
BP609P	Herbal Drug Technology (Practical)

Name of Course: BP 601 Medicinal Chemistry-III (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO601.1	Understand the importance of drug design and different techniques of drug design.
CO601.2	Understand the chemistry of drugs with respect to their biological activity.
CO601.3	Know the metabolism, adverse effects and therapeutic value of drugs.
CO601.4	Know the importance of SAR of drugs.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO601.1	3	2	3	3	1	3	3	2	3	3	3
CO601.2	3	2	2	1	1	2	2	2	3	3	3
CO601.3	3	2	2	1	1	2	3	2	3	3	3
CO601.4	3	1	3	3	1	2	3	2	3	3	3
Total	12	7	10	8	4	9	11	8	12	12	12
BP601T	3	2	2.5	2	1	2.25	3	2	3	3	3

Name of Course: BP 602T Pharmacology III (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO602.1	Explain Pharmacology of drugs used in Respiratory and Gastrointestinal system
CO602.2	Discuss Pharmacology of Drugs used in chemotherapy & justify the need for rational use of antimicrobials
CO602.3	Explain Pharmacology of drugs used as Immunomopharmacology
CO602.4	Discuss the principles and mechanisms of toxicology and treatment of various poisonings.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO602.1	3	2	2	2	2	2	2	3	3	3	3
CO602.2	3	2	2	2	2	3	2	3	3	3	3
CO602.3	3	2	2	2	2	2	2	3	3	3	3
CO602.4	3	2	2	2	2	2	2	3	3	3	3
Total	12	8	8	8	8	9	8	12	12	12	12
BP602T	3	2	2	2	2	2.25	2	3	3	3	3

Name of Course: BP 603 T HERBAL DRUG TECHNOLOGY (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO603.1	To Understand raw material as source of herbal drugs from cultivation to herbal drug product & Ayurvedic formulation
CO603.2	To know the development of herbal cosmetics, natural sweeteners, nutraceuticals and other herbal formulation
CO603.3	To Know the WHO and ICH guidelines for evaluation of herbal drugs and other regulatory Issues
CO603.4	To understand patenting of herbal drugs, GMP and herbal drug industry

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO603.1	3	2	2	1	1	1	1	1	2	2	2
CO603.2	3	2	1	1	1	2	1	1	2	2	2
CO603.3	3	1	1	2	1	1	1	1	2	2	2
CO603.4	3	1	1	2	1	1	1	1	2	2	2
Total	12	6	5	6	4	5	4	4	8	8	8
BP603T	3	1.5	1.25	1.5	1	1.25	1	1	2	2	2

Name of Course: BP604T Biopharmaceutics and Pharmacokinetics (Theory)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO604.1	Understand the basic concepts in Biopharmaceutics and pharmacokinetics and their significance.
CO604.2	Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination.
CO604.3	To understand the concepts of bioavailability and bioequivalence of drug products and their significance.
CO604.4	Understand various pharmacokinetic parameters, their significance & applications.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO604.1	3	3	-	1		2	-	-	1	1	2
CO604.2	3	3	-	-	-	-	-	-	1	1	2
CO604.3	3	3	-	-	-	-	-	-	1	1	2
CO604.4	3	3	-	1	-	2	-	-	1	1	2
Total	12	12	-	2	-	4	-	-	4	4	8
BP604T	3	3	-	1	-	2	-	-	1	1	2

Name of Course: BP605T Pharmaceutical Biotechnology

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO605.1	Understanding the importance of Immobilized enzymes in Pharmaceutical Industries
CO605.2	Genetic engineering applications in relation to production of pharmaceuticals
CO605.3	Importance of Monoclonal antibodies in Industries
CO605.4	Appreciate the use of microorganisms in fermentation technology

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO605.1	3	2	3	2	1	2	2	1	2	3	2
CO605.2	3	2	3	1	1	2	2	1	2	3	2
CO605.3	3	1	1	2	1	2	2	1	2	2	2
CO605.4	3	1	1	2	1	2	2	1	2	2	2
Total	12	6	8	7	4	8	8	4	8	10	8
BP605T	3	1.5	2	2	1	2	2	1	2	2.5	2

Name of Course: BP606T Quality Assurance -Theory

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO606.1	Understand GMP aspects in pharma Industry
CO606.2	Understand the responsibilities of QA & QC department
CO606.3	Understand the documentation in pharma industry
CO606.4	Distinguish between analytical instruments calibration and analytical methods validation.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO606.1	3	2	3	1	1	3	3	3	3	2	3
CO606.2	3	2	3	1	1	3	3	3	3	2	2
CO606.3	3	2	3	1	1	3	3	3	3	2	2
CO606.4	3	2	3	1	1	3	3	3	3	2	2
Total	12	8	12	4	4	12	12	12	12	12	9
BP606T	3	2	3	1	1	3	3	3	3	3	2.25

Name of Course: BP 607 Medicinal Chemistry-III (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO607.1	To understand the preparation of drugs and intermediates
CO607.2	To understand the assay of drugs
CO607.3	Understand the microwave assisted synthesis of medicinally important compounds
CO607.4	To learn to draw structures and reactions using drug design software

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO607.1	3	3	3	1	2	2	1	2	2	1	2
CO607.2	3	2	3	1	1	2	1	2	1	1	3
CO607.3	3	3	3	3	1	2	3	2	1	3	3
CO607.4	3	3	3	3	2	3	3	2	3	3	3
Total	12	11	12	8	6	9	8	8	7	8	11
BP607P	3	3	3	2	1.5	2.25	2	2	2	2	3

Name of Course: BP 608P Pharmacology III (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO608.1	To understand dose calculation and toxicity study in pharmacological experiments
CO608.2	To understand pharmacological effect of agonist and antagonists on different tissue preparations
CO608.3	To understand calculation of pharmacokinetic parameters and biostatics methods

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO608.1	3	2	2	3	1	2	1	1	2	1	1
CO608.2	3	2	2	3	1	2	1	1	1	1	1
CO608.3	3	2	2	2	1	2	1	1	1	1	1
Total	9	6	6	8	3	6	3	3	4	3	3
BP608P	3	2	2	2.6	1	2	1	1	1.3	1	1

Name of Course: BP 609 P Herbal Drug Technology (Practical)

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO609.1	To study preliminary phytochemical screening of crude drug
CO609.2	To study monograph analysis of Herbal Crude Drug
CO609.3	Able to perform analysis of Asava and aristha and Pharmaceutical excipients, Alkaloid , Phenol and aldehyde
CO609.4	Able to develop herbal formulation by incorporating standardized herbal extracts.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO609.1	3	2	2	2	1	2	-	1	1	-	2
CO609.2	3	2	2	2	1	2	-	1	1	-	2
CO609.3	3	2	2	2	1	2	-	1	1	-	2
CO609.4	3	2	2	2	1	2	1	1	2	2	2
Total	12	8	8	8	4	8	1	4	5	2	8
BP609P	3	2	2	2	1	2	1	1	1.25	2	2

7. COURSE OF SYUDY FOR SEMESTER VII

Subject	Subject Names
BP701T	Instrumental Methods of Analysis (Theory)
BP702T	Industrial Pharmacy II (Theory)
BP703T	Pharmacy Practice (Theory)
BP704T	Novel Drug Delivery System(Theory)
BP705P	Instrumental Methods of Analysis (Practical)
BP706PS	Practice School

Name of Course: BP701T Instrumental Methods of Analysis – Theory

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO701.1	Understand the interaction of EMR with Matter.
CO701.2	Summarize chromatographic and hyphenated techniques used for the separation, identification and quantification of analytes
CO701.3	Perform Qualitative and quantitative analysis of drug using various analytical instruments

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO701.1	3	3	3	3	1	3	2	-	1	-	2
CO701.2	3	3	3	2	1	3	2	-	1	-	2
CO701.3	3	3	3	2	1	3	2	-	1	-	2
Total	9	9	9	7	3	9	6		3		6
BP701T	3	3	3	2	1	3	2		1		2

Name of Course: BP702T Industrial Pharmacy II – Theory

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO702.1	Know the process of pilot plant and scale up of pharmaceutical dosage forms
CO702.2	Understand the process of technology transfer from lab scale to commercial batch
CO702.3	Know different Laws and Acts that regulate pharmaceutical industry
CO702.4	Understand the approval process and regulatory requirements for drug products

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO702.1	3	3	3	3	1	3	1	1	1	3	3
CO702.2	3	3	1	1	2	1	1	1	1	1	1
CO702.3	3	3	2	3	1	1	1	1	1	1	2
CO702.4	3	3	1	1	1	1	1	1	1	1	1
Total	12	12	7	8	5	6	4	4	4	6	7
BP609P	3	3	2	2	1.25	1.5	1	1	1	1.5	2

Name of Course: BP703T Pharmacy Practice – Theory

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO703.1	To know and understand various roles of pharmacist and also different types of pharmacies.
CO703.2	To know and understand adverse drug reactions, methods of identification, detections, assessment, reporting and management.
CO703.3	To know and understand the importance of therapeutic drug monitoring, laboratory investigation and patient medication adherence, also methods for achieving medication adherence.
CO703.4	To understand various drug distribution systems in hospitals.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO703.1	3	3	2	3	2	3	3	2	3	1	3
CO703.2	3	3	2	3	2	3	3	2	3	1	3
CO703.3	3	3	2	3	2	3	3	2	3	1	3
CO703.4	3	3	2	3	2	3	3	2	3	1	3
Total	12	12	8	12	8	12	12	8	12	4	12
BP703P	3	3	2	3	2	3	3	2	3	1	3

Name of Course: BP704T Novel Drug Delivery System – Theory

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO704.1	To understand various approaches for development of novel drug delivery systems.
CO704.2	To understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation
CO704.3	To understand the novelty in ocular drug delivery systems and intra uterine devices
CO704.4	To understand about the novel carriers used in Targeted drug delivery systems

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO704.1	3	3	2	1	1	3	1	1	1	1	3
CO704.2	3	2	2	1	1	3	1	1	1	1	3
CO704.3	2	2	2	1	1	3	1	1	1	1	3
CO704.4	2	2	2	1	1	3	1	1	1	1	3
Total	10	10	8	4	4	12	4	4	4	4	12
BP704T	2.5	2.5	2	1	1	3	1	1	1	1	3

Name of Course: BP705P Instrumental Methods of Analysis – Practical

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO705.1	Record the absorbance maxima and study solvent effect by UV spectrophotometer.
CO705.2	Relate and construct linear regression analysis data for colorimetric assays and operate a colorimeter instrument
CO705.3	Record and calculate the concentration of an analyte by measure of fluorescence of an analyte in absence and presence of quenching agent.
CO705.4	Understand the sample separation techniques by chromatography

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO705.1	3	2.5	2	1	1	3	1	1	1	1	3
CO705.2	3	2.5	2	1	1	3	1	1	1	1	3
CO705.3	3	2.5	2	1	1	3	1	1	1	1	3
CO705.4	3	2.5	2	1	1	3	1	1	1	1	3
Total	12	10	8	4	4	12	4	4	4	4	12
BP704T	3	2.5	2	1	1	3	1	1	1	1	3

8. COURSE OF SYUDY FOR SEMESTER VIII

Subject	Subject Names
BP801T	Biostatistics and Research Methodology (Theory)
BP802T	Social And Preventive Pharmacy (Theory)
BP806ET	Pharma Marketing Management (Theory)
BP811ET	Advanced Instrumentation Techniques (Theory)
BP813W	Project work

Name of Course: BP801T Biostatistics and Research Methodology

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO801.1	Know the operation of M.S. Excel, SPSS, R and MINITAB®, DoE (Design of Experiment)1.
CO801.2	Know the various statistical techniques to solve statistical problems
CO801.3	Appreciate statistical techniques in solving the problems
CO801.4	Know the operation of M.S. Excel, SPSS, R and MINITAB®, DoE (Design of Experiment)1.

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO801.1	3	2	1	3	3	2	2	3	3	3	
CO801.2	3	2	1	1	3	2	2	1	2	2	
CO801.3	2	2	1	0	1	1	1	0	1	1	
CO801.4	3	2	1	3	3	2	2	3	3	3	
Total	11	8	4	7	10	7	7	7	9	9	-
BP8701T	3	2	1	2	2	2	2	2	2.5	2.5	0

Name of Course: BP802T Social and Preventive Pharmacy

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO802.1	Acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide.
CO802.2	Have a critical way of thinking based on current healthcare development.
CO802.3	Evaluate alternative ways of solving problems related to health and pharmaceutical issues
CO802.4	Acquire high awareness of current healthcare problems related to health and pharmaceutical problem

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO802.1	3	2	3	3	1	1	1	3	3	3	3
CO802.2	3	3	3	2	1	1	2	2	2	2	3
CO802.3	3	3	3	2	2	3	3	3	3	3	3
CO802.4	3	3	3	1	2	3	3	3	3	3	3
Total	12	11	12	8	6	8	9	11	11	11	12
BP8701T	3	3	3	2	2	2	2.5	3	3	3	3

Name of Course: BP803ET Pharmaceutical Product Development

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO803.1	To discuss objectives of pharmaceutical product development and regulations related to preformulation, formulation development, stability assessment, manufacturing and quality control testing of different types of dosage form
CO803.2	To understand the advanced study of Pharmaceutical Excipients in pharmaceutical product development
CO803.3	To study Optimization techniques in pharmaceutical product development
CO803.4	To understand selection and quality control testing of packaging materials for pharmaceutical product development

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO803.1	3	2	3	1	2	1	2	2	3	1	3
CO803.2	3	3	3	1	-	1	2	1	3	1	3
CO803.3	3	3	3	3	1	1	2	2	3	3	3
CO803.4	3	3	3	1	1	1	2	1	2	2	3
Total	12	12	12	6	4	4	8	6	11	7	12
BP805T	3	3	3	2	1	1	2	2	3	2	3

Name of Course: BP805ET Pharmacovigilance

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:	
CO805.1	To discuss History and development of Pharmacovigilance ,Pharmacovigilance Program of India, Definitions and classification of ADRs, Methods of Detection and reporting of ADRs and managements of ADRs
CO805.2	To discuss and understand Drug and disease classification, Drug dictionaries and Information resources in pharmacovigilance
CO805.3	To understand and explain Pharmacogenomics of ADRs, Drug safety evaluation in Paediatrics, Geriatrics and Pregnant women, difference in Indian and global pharmacovigilance
CO805.4	To understand and explain Safety data generation in various phases of clinical trials and ICH Guidelines for Pharmacovigilance

MAPPING OF COURSE OUTCOMES TO PROGRAM OUTCOMES:

COURSE OUTCOMES	PROGRAM OUTCOMES										
	1	2	3	4	5	6	7	8	9	10	11
CO805.1	3	1	2	2	2	3	3	2	3	1	3
CO805.2	3	2	3	3	1	3	3	1	3	1	3
CO805.3	3	1	2	2	1	3	3	1	3	1	3
CO805.4	3	2	2	2	1	3	3	1	3	1	3
Total	12	6	9	9	5	12	12	5	12	4	12
BP805T	3	1.5	2	2	2	3	3	1	3	1	3