PROGRAM SPECIFIC OUTCOMES (PSO)

After completing their graduation students of B.Pharm will be able to do

Sl. No.	Program Specfic Outcomes (PSOs)
PSO-1	Apply core knowledge of pharmaceutical sciences—including drug development, formulation, quality control, and regulatory practices—to effectively contribute in industrial, clinical, and academic settings, or to establish entrepreneurial ventures in the pharmaceutical and allied healthcare sectors.
PSO-2	Demonstrate professional competencies such as ethical responsibility, effective communication, leadership, teamwork, and a commitment to lifelong learning, ensuring active contribution to healthcare delivery systems and continuous advancement in pharmacy practice.

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PROGRAM OUTCOMES

PO1	**Pharmacy Knowledge**	Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
PO2	**Planning Abilities**	Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
PO3	**Problem analysis**	Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
PO4	**Modern tool usage**	Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations
PO5	**Leadership skills**	Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
PO6	**Professional Identity**	Understand, analyze and communicate the value of their professional roles in society
PO7	**Pharmaceutical Ethics**	Honor personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions
PO8	**Communication**	Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions

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PO9	**The Pharmacist and society**	Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice
PO10	**Environment and sustainability**	Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
PO11	**Life-long learning**	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-asses and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis
PO12	**Entrepreneurial and Innovation Capabilities**	Develop innovative ideas, demonstrate entrepreneurial skills, and apply knowledge to generate new products, services, or business models in the pharmaceutical and allied sectors, contributing to economic and societal development.

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BP101T: Human Anatomy and Physiology – I

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
After completing this course, the student must demonstrate the knowledge and ability to:		
CO1	Students would identify the gross morphology, structure and functions of cell, skeletal, muscular, cardiovascular system of the human body	L1: Remember L3: Apply
CO2	They would understand the various homeostatic mechanisms and their imbalances	L2: Understand L3: Apply L4: Analyse
CO3	Students would be able to identify the different types of bones in human body	L2: Understand L3: Apply L4: Analyse
CO4	Students would be able to analyse the various tissues of different systems of human body	L2: Understand L4: Analyse
CO5	Student will able to analyze the Cardiovascular system	L2: Understand L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO12
CO1	2	2	0	2	0	1	0	0	1	3	0	0
CO2	2	2	1	2	0	1	0	0	1	2	0	0
CO3	2	1	1	1	0	1	0	0	1	2	0	0
CO4	3	1	1	0	0	1	0	0	2	2	0	0
CO5	2	3	0	1	0	1	0	0	2	2	0	0
Average	2.20	1.80	1.00	1.50	0.00	1.00	0.00	0.00	1.40	2.20	0.00	0.00

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BP102T: PHARMACEUTICAL ANALYSIS – I

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	The fundamentals of pharmaceutical analysis, pharmacopoeia, volumetric analysis, sources and methods of minimizing errors, sources of impurities and methods to determine the impurities.	L1:Remember L2:Understand L3: Apply
CO2:	The need and basic principles of Acid-Base titrations and Non-aqueous titration their applications in pharmaceutical industry.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Concepts of complexometric titration, precipitation titrations, gravimetric analysis etc and their applications.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Concepts of oxidation and reduction, titrations involving them and their applications in pharmaceutical industry.	L3: Apply L4: Analyse L5: Evaluate
CO5:	The principle, types of electrodes, instrumentation and applications of Potentiometry, Conductometry and Polarography.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	0	0	3	0	2	1	0	1	3	1
CO2	3	0	0	3	0	3	2	1	0	1	3	1
CO3	3	0	0	0	0	0	2	1	0	1	3	1
CO4	3	0	0	0	0	0	2	1	0	1	3	1
CO5	3	0	0	0	0	0	2	1	0	1	3	1
Average	3.00	0.00	0.00	3.00	3.00	3.00	2.00	1.00	0.00	1.00	3.00	1.00

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BP103T: PHARMACEUTICS-I

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Understand the Professional way of handling the prescription and describe the history of pharmacy, and pharmacy profession. posology & dose calculation of drug in children. Different types of dosage form	L1:Remember L2:Understand L3: Apply
CO2:	The formulation aspects of different dosage forms and do different pharmaceutical calculations, Understand basic requirement and formulation of powders and liquid dosage forms.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Understand basic requirement and formulation of liquid (monophasic& biphasic) dosage forms.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Will acquire knowledge in differentiating different dosage forms, pharmaceutical Incompatibilities. Learn basic requirement, formulation and evaluation of suppositories and pessaries.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Understand the mechanisms of drug penetration and also the factors influencing permeation through transdermal route Explain the formulation and evaluation of semisolid preparation such as ointment, gel cream etc.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO12
CO1	2	1	2	3	3	1	0	0	0	0	0	1
CO2	1	2	3	3	3	2	2	0	0	0	0	2
CO3	2	2	3	3	2	2	3	0	0	0	0	1
CO4	2	3	2	2	2	1	1	0	0	0	0	3
CO5	2	2	2	2	2	1	1	0	0	0	0	1
Average	1.80	2.00	2.40	2.60	2.40	1.40	1.40	0.00	0.00	0.00	0.00	1.60

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BP104T: PHARMACEUTICAL INORGANIC CHEMISTRY

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Discuss Impurities in pharmaceutical substances,General methods of preparation, assay for the compounds,.	L1:Remember L2:Understand L3: Apply
CO2:	Acids, Bases and Buffers,Major extra and intracellular electrolytes: Functions of major physiological ions,Dentifrices, role of fluoride in the treatment of dental caries, Desensitizing agents, Calcium carbonate, Sodium fluoride, and Zinc,eugenol cement.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Gastrointestinal agents,Acidifiers: Ammonium chloride,Cathartics,Antimicrobials: Mechanism, classification	L3: Apply L4: Analyse L5: Evaluate
CO4:	Expectorants,Emetics: Sodium potassium tartarate,Haematinics: Ferrous sulphate*, Ferrous gluconate,Poison and Antidote,Astringents	L3: Apply L4: Analyse L5: Evaluate
CO5:	Radiopharmaceuticals: Radio activity, Measurement of radioactivity, Properties of α, β, γ radiations, Half life, radio isotopes and study of radio isotopes - Sodium iodide I131	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	2	2	3	0	1	2	3	1
CO2	3	1	2	2	1	1	1	0	0	2	2	2
CO3	3	0	0	0	1	1	1	0	0	2	2	2
CO4	3	0	2	0	1	1	1	0	0	2	2	2
CO5	1	1	1	1	1	1	1	1	1	1	1	1
Average	2.60	0.80	1.20	0.80	1.20	1.20	1.40	0.20	0.40	1.80	2.00	1.60

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BP105T.COMMUNICATION SKILLS (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to		
CO1:	Explain need of communication skills, barriers to communicate effectively.	L1:Remember L2:Understand L3: Apply
CO2:	Demonstrate perspectives of communication required to function effectively in areas of pharmaceutical operation	L3: Apply L4: Analyse L5: Evaluate
CO3:	Apply various elements, styles of communications, Basic listening skills, writing skills to communicate effectively and manage team as team player	L3: Apply L4: Analyse L5: Evaluate
CO4:	Apply Interview skills presentation skills and group discussion for development of leadership qualities and essentials	L3: Apply L4: Analyse L5: Evaluate
CO5:	Demonstrate and apply basic communication skills and advance learning skills	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	0	0	0	0	2	3	2	3
CO2	3	3	3	2	0	0	0	0	2	0	2	3
CO3	3	3	3	2	0	0	0	0	2	0	2	3
CO4	3	3	3	2	0	0	0	0	3	0	2	3
CO5	3	3	3	2	0	0	0	0	2	0	2	3
Average	3.00	3.00	3.00	2.20	0.00	0.00	0.00	0.00	2.20	3.00	2.00	3.00

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BP106RBT: REMEDIAL BIOLOGY

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Discuss characters of living organisms, Diversity in the living world, Binomial nomenclature, Five kingdoms of life and basis of classification. Salient features of Monera, Potista, Fungi, Animalia and Plantae, Virus,.	L1:Remember L2:Understand L3: Apply
CO2:	Composition of blood, blood groups, coagulation of blood, Composition and functions of lymph, Human circulatory system, Structure of human heart and blood vessels, Cardiac cycle, cardiac output and ECG, Digestion and Absorption, Breathing and respiration	L3: Apply L4: Analyse L5: Evaluate
CO3:	Excretory products and their elimination, Neural control and coordination, Chemical coordination and regulation, Endocrine glands and their secretions, Human reproduction	L3: Apply L4: Analyse L5: Evaluate
CO4:	Plants and mineral nutrition and Photosynthesis	L3: Apply L4: Analyse L5: Evaluate
CO5:	Plant respiration: Respiration, glycolysis, fermentation (anaerobic). Plant growth and development, Phases and rate of plant growth, Condition of growth, Introduction to plant growth regulators, Cell - The unit of life	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	2	1	0	0	0	0	0	2	0	2
CO2	1	1	2	1	0	0	0	0	0	2	0	2
CO3	1	1	2	1	0	0	0	0	0	2	0	2
CO4	1	1	2	1	1	1	1	1	1	2	1	2
CO5	1	1	2	1	1	1	1	1	1	2	1	2
Average	1.00	1.00	2.00	1.00	0.40	0.40	0.40	0.40	0.40	2.00	0.40	2.00

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BP 106RMT.REMEDIAL MATHEMATICS (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to		
CO1:	Solve systems of linear equations, using technology to facilitate row reduction determine the rank, eigen values and eigen vectors.	L1: Remember L2: Understand L3: Apply
CO2:	Identify special properties of a matrix, such as positive definite, etc., and use this information to facilitate the calculation of matrix characteristics.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Find partial derivatives numerically and symbolically and use them to analyse and interpret the way a function varies.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Acquire the Knowledge maxima and minima of functions of several variable.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Apply mathematical knowledge in solving Pharmacokinetic equations and chemical kinetics.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	3	0	0	0	0	0	3	0	3	2
CO2	3	3	3	3	0	0	0	0	3	0	3	3
CO3	3	3	3	3	0	0	0	0	3	0	3	3
CO4	1	3	1	3	1	1	1	1	3	1	1	1
CO5	3	1	1	1	1	1	1	1	3	1	1	1
Average	2.20	2.20	2.20	2.00	0.40	0.40	0.40	0.40	3.00	0.40	2.20	2.00

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SEMESTER-II

BP201T: Human Anatomy and Physiology – II

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
After completing this course, the student must demonstrate the knowledge and ability to:		
CO1	Students would learn the gross morphology, structure and functions of various organs of the human body.	L1: Remember L3: Apply
CO2	They would understand the various homeostatic mechanisms and their imbalances	L2: Understand L4: Analyse
CO3	Students would be able to Describe the various homeostatic mechanisms and their imbalance along with interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body	L2: Understand L4: Analyse
CO4	Students would be able to Explain the various tissues and organs of different systems of human body with coordinated working pattern of different organs of each system	L2: Understand L4: Analyse
CO5	Student will able to Describe the hematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc and also record blood pressure, heart rate, pulse and respiratory volume	L2: Understand L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	0	2	0	1	0	0	1	3	0	0
CO2	3	1	0	2	0	1	0	0	1	2	0	0
CO3	2	1	0	1	0	1	0	0	2	2	0	0
CO4	2	3	0	1	0	1	0	0	2	2	0	1
CO5	2	3	0	1	0	1	0	0	2	2	0	2
Average	2.20	1.80	0.00	1.40	0.00	1.00	0.00	0.00	1.60	2.20	0.00	0.60

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BP202T: PHARMACEUTICAL ORGANIC CHEMISTRY –I

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course students shall be able to		
CO1	Write the structure, name of the organic compounds	L1: Remember L2: Understand
CO2	Knowledge about the type of isomerism	L1: Remember L2: Understand L3: Apply
CO3	Knowledge about the functional groups and their reaction mechanism	L1: Remember L2: Understand L3: Apply
CO4	Expertise in reactivity/stability of compounds	L1: Remember L2: Understand L3: Apply
CO5	Demonstrate identification of the unknown organic compounds	L1: Remember L2: Understand L3: Apply L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	0	1	2	0	0	0	1	0	1	3	1
CO2	2	0	1	2	0	0	0	1	0	1	3	1
CO3	2	0	1	2	0	0	0	1	0	1	3	1
CO4	2	0	1	2	0	0	0	1	0	1	3	1
CO5	2	1	1	1	1	1	2	1	1	1	1	1
Average	2.00	0.20	1.00	1.80	0.20	0.20	0.40	1.00	0.20	1.00	2.60	1.00

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BP203T: BIOCHEMISTRY

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course students shall be able to		
CO1	Summerise the biochemical structure of cell	L1: Remember L2: Understand
CO2	Knowledge about structure and function of macromolecule of a cell	L1: Remember L2: Understand L3: Apply
CO3	Knowledge about different metabolic pathways	L1: Remember L2: Understand L3: Apply
CO4	Knowledge about role of enzyme, their nomenclature, kinetics and functions	L1: Remember L2: Understand L3: Apply
CO5	Biological significance of vitamins , co enzyme and minirals	L1: Remember L2: Understand L3: Apply

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	0	1	0	0	0	0	1	0	0	0
CO2	3	0	0	1	0	0	0	0	1	0	0	0
CO3	3	0	0	1	0	0	0	0	1	0	0	1
CO4	3	0	0	1	0	0	0	0	1	0	0	1
CO5	1	1	1	1	1	1	1	1	1	1	1	1
Average	2.60	0.20	0.20	1.00	0.20	0.20	0.20	0.20	1.00	0.20	0.20	0.60

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BP204T: Pathophysiology

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
After completing this course, the student must demonstrate the knowledge and ability to:		
CO1	Students would Describe the etiology and pathogenesis of the selected disease states	L1: Remember L3: Apply
CO2	They would understand the signs and symptoms of the diseases	L2: Understand L3: Apply
CO3	Students would be able to identify the complications of the diseases	L2: Understand L3: Apply L4: Analyse
CO4	Students would be able to analyse the etiology and pathogenesis of the selected disease states	L2: Understand L4: Analyse
CO5	Student will able to analyze the signs and symptoms of the diseases pertaining to CVS, Ednocrine system, Nervous system, GI system, Respiratory system, Renal system, bones joints, cancer, Heametological diseases, sexually transmitted diseases, infectious diseases	L2: Understand

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	0	0	0	0	0	0	0	0	3	0
CO2	3	0	0	0	0	0	0	0	0	0	3	1
CO3	3	0	0	0	0	0	0	0	0	0	3	1
CO4	3	0	0	0	0	0	0	0	0	0	3	1
CO5	3	0	0	0	0	0	0	0	0	0	3	1
Average	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.80

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BP205 T: COMPUTER APPLICATIONS IN PHARMACY (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	know the various types of application of computers in pharmacy	L1:Remember L2:Understand L3: Apply
CO2:	Understand Concept of Information Systems and Software, various types of databases like MYSQL, MS ACCESS, Pharmacy Drug database, Number systems, Web technologies and Bioinformatics	L3: Apply L4: Analyse L5: Evaluate
CO3:	Apply computer knowledge for Chromatographic dada analysis(CDS), Laboratory Information management System (LIMS) and Text Information Management System(TIMS)	L3: Apply L4: Analyse L5: Evaluate
CO4:	Use MS Word, MS Access for designing questionnaire, form to record patient information, creating patient database, mailing labels, invoice table, and generate reports	L3: Apply L4: Analyse L5: Evaluate
CO5:	Create HTML web page, Export Tables, Queries, Forms and Reports to web pages and XML Pages	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	0	0	3	0	0	0	0	0	0	3	1
CO2	0	0	0	3	0	0	0	0	0	0	3	1
CO3	1	0	0	3	0	0	0	0	0	0	3	1
CO4	1	1	1	1	1	1	1	0	1	0	2	1
CO5	1	1	1	1	1	1	0	1	0	0	2	1
Average	0.80	0.40	0.40	2.20	0.40	0.40	0.20	0.20	0.20	0.00	2.60	1.00

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MET FACULTY OF PHARMACY

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BP 206 T: ENVIRONMENTAL SCIENCES (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to		
CO1:	Understand Multidisciplinary nature of environmental studies Natural Resources Renewable and non-renewable resources, associated problems.	L1:Remember L2:Understand L3: Apply
CO2:	Understand, explain and Draw Structure and function of various ecosystem.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Understand Environmental Pollution and its remedial methods to reduce it.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Role of an individual in conservation of natural resources.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Acquire skills to help the concerned individuals in identifying and solving environmental problems.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	0	0	0	0	0	0	3	0	2	2	2	1
CO2	0	0	0	0	0	0	3	0	2	3	3	1
CO3	0	0	0	0	0	0	3	0	2	3	3	1
CO4	0	0	0	0	0	0	3	0	2	2	3	1
CO5	0	0	0	0	0	0	3	0	2	3	2	1
Average	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00	2.06	2.06	1.00

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SEMESTER-III

BP301T: PHARMACEUTICAL ORGANIC CHEMISTRY –II

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Understand the mechanisms of solute solvent interactions Study the limitations and applications of Distribution law	L1:Remember L2:Understand L3: Apply
CO2:	Study the use of physicochemical properties in formulation research and development	L3: Apply L4: Analyse L5: Evaluate
CO3:	Acquire skills and working knowledge of the principles and concepts of surface tension and its measurement	L3: Apply L4: Analyse L5: Evaluate
CO4:	Understand the various intermolecular forces involved in the formation of complexes and its applications.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Learn the steps involved in the preparation of pharmaceutical buffers and its importance	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2	1	1	1	1	2	2	3	3
CO2	3	2	1	2	1	1	1	1	2	2	3	3
CO3	3	2	2	2	1	1	1	1	2	2	3	3
CO4	3	2	1	2	1	1	2	1	2	2	2	1
CO5	2	2	1	1	1	1	2	1	1	2	1	1
Average	2.00	1.20	1.80	1.00	1.00	1.40	1.00	1.80	2.00	2.40	2.2.0	2.00

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BP302T: PHYSICAL PHARMACEUTICS-I

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course students shall be able to		
CO1	Understand various physicochemical properties of drug molecules in the designing the dosage form	L1: Remember L2: Understand
CO2	Know the principles of chemical kinetics &to use them in assigning expiry date for formulation.	L1: Remember L2: Understand L3: Apply
CO3	Demonstrate use of physicochemical properties in evaluation of dosage forms	L1: Remember L2: Understand L3: Apply
CO4	Appreciate physicochemical properties of drug molecules in formulation Research and development	L1: Remember L2: Understand L3: Apply
CO5	Understand the various intermolecular forces involved in the formation of complexes and its applications.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	0	2	0	0	0	0	0	0	2	1
CO2	3	0	0	3	0	0	0	0	0	0	3	1
CO3	3	0	0	1	0	0	0	0	0	0	1	1
CO4	3	0	0	3	0	0	0	0	0	0	1	1
CO5	3	0	0	3	0	0	0	0	0	0	3	1
Average	3.00	0.00	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00

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BP303T: PHARMACEUTICAL MICROBIOLOGY

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Students will be able to acquire, articulate, retain and apply specialized language and knowledge relevant to microbiology.	L1:Remember L2:Understand L3: Apply
CO2:	Students will acquire and demonstrate competency in laboratory safety and in routine and specialized microbiological laboratory skills applicable to microbiological research or clinical methods, including accurately reporting observations and analysis.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Students will communicate scientific concepts, experimental results and analytical arguments clearly and concisely, both verbally and in writing.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Students will demonstrate isolation of and identification of microbes.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Students can able to design microbiology laboratory considering all the aspects of safety	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	0	0	0	0	0	0	0	0	0	0	0
CO2	2	0	0	3	0	1	0	0	0	0	1	1
CO3	3	0	0	2	0	2	0	1	0	0	2	1
CO4	3	0	0	1	0	2	0	1	0	0	2	1
CO5	3	0	0	3	0	2	0	1	0	0	3	1
Average	2.4	0.00	0.00	1.80	0.00	1.40	0.00	0.6	0.00	0.00	1.60	0.80

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BP304: PHARMACEUTICAL ENGINEERING

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to		
CO1:	Understand the concepts of Flow of fluids, Size reduction and size separation with importance of various equipment used in these Unit operations	L1:Remember L2:Understand L3: Apply
CO2:	Analyze and evaluate the fundamentals of Heat transfer and the basic concepts and equipment used for evaporation and distillation with their applications in pharmaceutical industry.	L2:Understand L4: Analyse L5: Evaluate
CO3:	Impart knowledge on various types of equipment and applications of Drying and Mixing operations in Pharmaceutical industry	L3: Apply L4: Analyse L5: Evaluate
CO4:	Understand and apply the concepts of centrifugation and filtration process and their applications in pharmaceutical industry.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Understands about different materials of construction, various types of corrosion and preventive methods used for Corrosion control in Pharmaceutical industries.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	0	3	0	0	0	0	0	0	2	1
CO2	3	0	0	3	0	0	0	0	0	0	2	1
CO3	3	0	0	3	0	0	0	0	0	0	2	0
CO4	3	0	0	3	0	0	0	0	0	2	0	1
CO5	3	0	0	3	0	0	0	0	0	0	2	1
Average	3.00	0.00	0..00	3.00	0.00	0.00	0.00	0.00	0.00	0.40	1.60	0.80

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SEMESTER -IV

BP401T: PHARMACEUTICAL ORGANIC CHEMISTRY – III

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Stereo isomerism Optical isomerism –Optical activity, enantiomerism, diastereoisomerism, meso compounds,Elements of symmetry, chiral and achiral molecules,DL system of nomenclature of optical isomers, sequence rules, RS system of nomenclature of optical isomers,Reactions of chiral molecules,Racemic modification and resolution of racemic mixture. Asymmetric synthesis: partial and absolute	L1:Remember L2:Understand L3: Apply
CO2:	Geometrical isomerism,Nomenclature of geometrical isomers (Cis Trans, EZ, Syn Anti systems)Methods of determination of configuration of geometrical isomers. Conformational isomerism in Ethane, n-Butane and Cyclohexane. Stereo isomerism in biphenyl compounds (Atropisomerism) and conditions for optical activity.Stereospecific and stereoselective reactions	L3: Apply L4: Analyse L5: Evaluate
CO3:	Heterocyclic compounds: Nomenclature and classification Synthesis, reactions and medicinal uses of following compounds/derivatives Pyrrole, Furan, and Thiophene Relative aromaticity and reactivity of Pyrrole, Furan and Thiophene	L3: Apply L4: Analyse L5: Evaluate
CO4:	Synthesis, reactions and medicinal uses of following compounds/derivatives Pyrazole, Imidazole, Oxazole and ThiazolePyridine, Quinoline, Isoquinoline, Acridine and Indole. Basicity of pyridine Synthesis and medicinal uses of Pyrimidine, Purine, azepines and their derivatives	L3: Apply L4: Analyse L5: Evaluate
CO5:	Reactions of syntheticimportance Metal hydride reduction (NaBH4 and LiAlH4), Clemmensen reduction, Birch reduction, Wolff Kishnerreduction. Oppenauer-oxidation and Dakin reaction. Beckmanns rearrangement and Schmidt rearrangement. Claisen-Schmidt condensation	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	2	1	2	1	2	1	3	3
CO2	3	1	2	1	2	1	2	1	2	1	3	3
CO3	3	1	1	2	1	1	1	1	1	1	1	1
CO4	3	1	2	1	2	1	2	1	1	2	0	1
CO5	3	1	1	1	1	1	1	2	2	1	1	1
Average	3.00	1.00	1.60	1.20	1.60	1.00	1.60	1.20	1.60	1.20	1.60	1.80

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BP402T: MEDICINAL CHEMISTRY-I

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	The students will acquire wide knowledge on drug metabolic pathways (Phase-I and II) and factors effecting metabolism	L1: Remember L2:Understand L3: Apply
CO2:	To understand the different chemical aspects along with the synthesis, mode of action, medicinal benefits for Sympathomimetics and Sympatholytics.	L2:Understand L3: Apply
CO3:	The student shall understand the synthetic methods as well as the basic structural requirements, pharmacophoric features as well as the structural activity relationships for drugs acting on cholinergic system	L2:Understand L3: Apply
CO4:	The student shall understand the role of various drugs acting on Central nervous system. The students shall apply their knowledge in understanding the synthesis, SAR and medicinal benefits of Antiepileptics, Antipsychotics, sedatives and hypnotics.	L2:Understand L3: Apply
CO5:	The student shall understand the structural aspects and synthesis of various agents used as Narcotic and non narcotic analgesics, Non steroidal Antiinflammatory agents and drugs applied in Local anaesthesia.	L2:Understand L3: Apply

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	2	2	0	3	0	1	1	2	1	1
CO2	3	0	0	2	0	3	0	1	2	2	2	1
CO3	3	3	3	3	0	2	0	1	2	2	2	1
CO4	3	3	3	3	0	2	0	1	2	2	3	1
CO5	3	1	1	1	1	1	1	2	2	1	1	1
Average	3.00	1.40	1.80	2.20	0.20	2.20	0.20	1.20	1.80	1.80	1.80	1.00

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BP 403 T. PHYSICAL PHARMACEUTICS-II (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Acquire working knowledge and understanding the concepts of colloids and its applications	L1:Remember L2:Understand L3: Apply
CO2:	Understand the flow behavior of fluids and also to identify suitable characteristics for each formulations	L3: Apply L4: Analyse L5: Evaluate
CO3:	Learn the formulation concepts of pharmaceutical suspensions and emulsions and their stability problems	L3: Apply L4: Analyse L5: Evaluate
CO4:	Explain the derived properties and flow properties of powders and its role in formulation development	L3: Apply L4: Analyse L5: Evaluate
CO5:	Study the reaction kinetics, reaction order, factors affecting the rate of the reactions	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	0	1	2	2	1	1	1	2	1
CO2	3	2	1	0	2	2	1	1	1	1	2	1
CO3	3	1	2	1	2	1	1	1	2	2	2	1
CO4	3	2	1	0	1	1	0	1	2	2	2	1
CO5	3	1	1	1	1	1	1	2	2	1	1	1
Average	3.00	1.60	1.40	0.40	1.40	1.40	1.00	1.20	1.60	1.40	1.80	1.00

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BP404T: Pharmacology-I

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
After completing this course, the student must demonstrate the knowledge and ability to:		
CO1	Students would understand the pharmacological actions of different categories of drugs	L1: Remember L3: Apply
CO2	They would study in detailed about mechanism of drug action at organ system/sub cellular/ macromolecular levels	L2: Understand L4: Analyse
CO3	Students would be able to understand the application of basic pharmacological knowledge in the prevention and treatment of various diseases	L2: Understand L4: Analyse
CO4	Students would be able to observe the effect of drugs on animals by simulated experiments	L2: Understand L4: Analyse
CO5	Student will able to Analyze the adverse drug reactions, drug interaction and drug toxicity	L2: Understand L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	0	3	2	3	2	2	3	0	3	1
CO2	3	0	0	3	2	2	1	3	2	0	3	1
CO3	3	0	0	2	2	3	2	2	3	0	3	1
CO4	3	0	0	3	2	1	1	1	1	0	3	1
CO5	3	0	0	2	2	2	2	1	2	0	3	1
Average	3.00	0.00	0.00	2.60	2.00	2.20	1.60	1.80	2.20	0.00	3.00	1.00

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BP405T: PHARMACOGNOSY AND PHYTOCHEMISTRY I

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Discuss the definition, history, scope and development of pharmacognosy.	L1:Remember L2:Understand L3: Apply
CO2:	Cultivation of medicinal plants, identification and evaluation, uses of crude drugs and identification and estimation of phytochemicals.	L3: Apply L4: Analyse L5: Evaluate
CO3:	In vitro industrial production of secondary metabolites by plant tissue culture technique. Describe different types of primary and secondary metabolites, their general properties, classification, and their test for identification.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Describe novel medicinal agents from marine sources. Describe the role of Pharmacognosy in allopathy and traditional system of medicine.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Describe the sources, chemical constituents and uses of plants products containing plant fibers, hallucinogens teratogens, and natural allergens.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	0	0	0	0	1	2	1	2	1	3	1
CO2	2	0	0	0	0	1	2	1	2	1	3	3
CO3	2	0	0	0	0	1	2	1	2	1	2	2
CO4	2	0	0	0	0	1	2	1	2	1	2	3
CO5	3	0	0	1	1	1	2	1	2	0	2	1
Average	2.20	0.00	0.00	0.20	0.20	1.00	2.00	1.00	2.00	0.80	2.40	2.00

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SEMESTER – V

BP501T: MEDICINAL CHEMISTRY-II

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	To understand the classification, nomenclature and structure activity relationship with respect to their mechanism of actions of various anti histamines, proton pump inhibitors and anti neoplastic agents.	L1: Remember L2:Understand L3: Apply
CO2:	To understand the different chemical aspects along with the synthesis, mode of action, medicinal benefits for various classes of cardiovascular agents viz Diuretics, anti anginal, calcium channel blockers and other anti hypertensive agents	L2:Understand L3: Apply
CO3:	The student shall understand the synthetic methods as well as the basic structural requirements, pharmacophoric features as well as the structural activity relationships for various classes of medicinal agents used as anti arrhythmics, anti hyperlipidemics, coagulants and anticoagulants and drugs used in congestive heart failure.	L2:Understand L3: Apply
CO4:	The student shall understand the role of hormones, their structure, biological and therapeutic significance.	L2:Understand L3: Apply
CO5:	The student shall understand the structural aspects and synthesis of various agents used for the treatment of diabetes and drugs applied in Local anaesthesia.	L2:Understand L3: Apply

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	2	1	1	2	1	0	1	2	2
CO2	3	1	1	2	2	1	2	1	1	1	2	2
CO3	3	1	1	2	2	1	2	1	1	1	2	1
CO4	1	1	2	1	2	2	1	1	2	2	2	1
CO5	1	1	1	2	2	2	1	2	2	1	1	1
Average	2.20	1.00	1.20	1.80	1.80	1.40	1.60	1.20	1.20	1.20	1.80	1.40

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BP502T: INDUSTRIAL PHARMACY I

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course students shall be able to		
CO1	To recall the knowledge of pre formulation studies for dosage form development and its applications	L1: Remember L2: Understand
CO2	To prepare and coat tablets, capsules and pellets by various equipments and further they can evaluate in process and final product quality control.	L1: Remember L2: Understand
CO3	Explain the quality control and quality analysis of dosage forms.	L1: Remember L2: Understand L3: Apply
CO4	Formulate cosmetics, pharmaceutical aerosols	L1: Remember L2: Understand L3: Apply
CO5	Knowledge about packing materials	L1: Remember L2: Understand L3: Apply

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	1	3	3	2	2	1	2	2
CO2	3	3	2	2	3	2	3	2	2	1	2	2
CO3	3	3	2	2	2	3	3	3	1	1	2	1
CO4	3	3	3	2	3	2	2	2	1	3	2	1
CO5	1	2	2	1	1	2	1	2	2	2	1	1
Average	2.60	2.80	2.20	1.80	2.00	2.40	2.40	2.20	1.60	1.60	1.80	1.40

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BP503T: PHARMACOLOGY II

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
After completing this course, the student must demonstrate the knowledge and ability to:		
CO1	Students would explain the Neurotransmitters involved in the autonomic nervous system along with their synthesis and metabolism	L1: Remember L3: Apply
CO2	They would describe various adrenoreceptors and cholinoceptor, their subtypes and the clinical spectrum of their general and selective agonist and antagonist	L2: Understand L3: Apply
CO3	Students would be able to Clarify the agents that stimulate or relax skeletal muscle, including the cholinergic neuromuscular agonists and antagonists as well as the neuromuscular agents acting at noncholinergic sites	L2: Understand L3: Apply
CO4	Students would be able to Explain the essential pharmacotherapy and pharmacological features of common and important drugs used in cardiovascular diseases and Respiratory Disorders	L2: Understand L4: Analyse
CO5	Student will able to describe various pharmacological agents	L2: Understand L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	0	2	2	1	1	1	2	3	2
CO2	3	2	1	0	2	2	2	2	2	2	3	2
CO3	3	2	2	0	1	2	2	1	1	1	3	2
CO4	3	1	1	3	1	2	1	2	2	1	1	1
CO5	2	1	1	2	2	2	1	2	2	1	1	1
Average	2.60	1.60	1.40	1.00	1.60	2.00	1.40	1.60	1.60	1.40	2.20	1.60

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BP504T: PHARMACOGNOSY AND PHYTOCHEMISTRY II

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Phytochemical production in medicinal plants, their extraction, isolation, identification, estimation and characterization.	L1:Remember L2:Understand L3: Apply L4: Analyse
CO2:	Herb drug-drug, food-herb interactions, basic principles of traditional systems of medicine, modern extraction techniques, preparation and development of herbal formulations.	L1:Remember L2:Understand L3: Apply L4: Analyse L5: Evaluate
CO3:	Identification and quality assessment of Crude drugs including detection of type of adulteration and type of adulterants in crude drugs.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Isolation, estimation and structure elucidation of phytochemicals of pharmaceutical significance by UV-VIS spectrometry, CC, HPTLC, HPLC, MS, IR, NMR.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Describe methods for industrial production, estimation and utilization of some therapeutically important phytoconstituents.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	1	2	2	2	2	2	3	2
CO2	3	2	3	3	2	3	2	2	3	3	3	2
CO3	3	3	2	2	2	2	3	2	2	3	3	2
CO4	2	2	3	3	1	2	2	3	3	3	3	2
CO5	3	3	3	3	2	3	2	2	2	2	3	1
Average	2.60	2.60	2.80	2.80	1.60	2.40	2.20	2.20	2.40	2.60	3.00	1.80

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BP 505 T: PHARMACEUTICAL JURISPRUDENCE (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	The schedules and functioning of various committees in the Drug and Cosmetic Act and rules and Indian pharmaceutical Acts.	L1: Remember L2: Understand L3: Apply
CO2:	Know the regulatory authorities and agencies governing the manufacture and sale labelling requirements and packaging guidelines for drugs and cosmetics.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Know about narcotic and psychotropic drugs, its productions and drug abuse, its controlling.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Salient Features of Drugs and Magic Remedies Act and its Rules, Prevention of Cruelty to animals Act-1960 and National Pharmaceutical Pricing Authority	L3: Apply L4: Analyse L5: Evaluate
CO5:	Know code of ethics during the pharmaceutical practice and explain other laws as prescribed by the Pharmacy Council of India from time to time including International Laws.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	0	0	0	1	2	0	1	0	0	1
CO2	3	0	0	0	0	1	2	0	1	0	0	1
CO3	3	0	0	0	0	1	2	0	1	0	0	1
CO4	3	0	0	0	0	1	2	0	1	0	0	2
CO5	2	1	1	2	2	2	2	1	2	2	2	1
Average	2.80	0.20	0.20	0.40	0.40	1.20	2.00	0.20	1.20	0.40	0.40	1.20

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SEMESTER VI

BP601T: MEDICINAL CHEMISTRY-III

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	To understand the historical background of antibiotics, their nomenclature and chemical aspects. Apply the knowledge in understanding the structure activity relationship of beta lactam antibiotics with respect to their pharmacological actions.	L2:Understand L3: Apply
CO2:	To understand the different chemical aspects along with the metabolites and their pharmacological or adverse effects for various classes of antibiotics viz Macrolides, antimalarials and Chloramphenicol. The student needs to apply their knowledge to understand the basic concepts and applications of prodrugs.	L1: Remember L2:Understand L3: Apply
CO3:	The student shall understand the synthetic methods as well as the basic structural requirements, pharmacophoric features as well as the structural activity relationships for various classes of medicinal agents used in the treatment of Tuberculosis, Urinary tract infections and various viral diseases.	L2:Understand L3: Apply
CO4:	The student shall understand the role of various anti fungal, anti protozoal agents and sulphonamides. The students shall apply their knowledge in understanding the synthesis, SAR and medicinal benefits of these drugs.	L1: Remember L2:Understand L3: Apply
CO5:	The student shall understand and apply their knowledge in basic concepts of drug design like QSAR studies, Pharmacophore modeling and docking methods, applications of Combinatorial chemistry.	L3: Apply L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	2	3	0	0	0	0	0	0	3	2
CO2	3	0	2	2	0	0	0	0	0	0	3	2
CO3	3	0	2	0	0	0	0	0	0	0	3	1
CO4	3	0	2	2	0	0	0	0	0	0	3	2
CO5	2	2	2	2	2	2	1	2	1	1	2	1
Average	**2.80**	**0.40**	**2.00**	**1.80**	**0.40**	**0.40**	**0.20**	**0.40**	**0.20**	**0.20**	**2.80**	**1.60**

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BP602T: PHARMACOLOGY III

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
After completing this course, the student must demonstrate the knowledge and ability to:		
CO1	Students would describe the pharmacology and pharmacotherapy of various general and local anesthetics	L1: Remember L3: Apply
CO2	They would understand the illustrate the appropriate drug therapy and management of patients with specific CNS disorders	L2: Understand L3: Apply L4: Analyse
CO3	Students would be able to explain the indications, mechanism of action, adverse effects and contraindications for the major classes of drugs used in the treatment of Parkinson's Disease, Migraine and Alzheimer's disease	L2: Understand L3: Apply L4: Analyse
CO4	Students would be able to describe Pharmacological features of different classes of NSAIDs and pharmacotherapy of Rheumatoid Arthritis, Osteoarthritis and Gout	L2: Understand L4: Analyse
CO5	Student will able to understand basic principles of bioassay, types of bioassay along with advantages and disadvantages	L2: Understand L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	0	0	0	0	0	0	2	0	0	3	2
CO2	3	0	0	0	0	0	0	2	0	0	3	2
CO3	2	0	0	0	0	0	0	2	0	0	3	2
CO4	3	0	0	0	0	0	0	2	0	0	3	1
CO5	2	0	0	0	0	0	0	2	0	0	3	1
Average	2.40	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	3.00	1.60

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BP603T: HERBAL DRUG TECHNOLOGY

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Discuss the definition, history, scope and development of pharmacognosy.	L1:Remember L2:Understand L3: Apply
CO2:	Cultivation of medicinal plants, identification and evaluation, uses of crude drugs and identification and estimation of phytochemicals.	L3: Apply L4: Analyse L5: Evaluate
CO3:	In vitro industrial production of secondary metabolites by plant tissue culture technique. Describe different types of primary and secondary metabolites, their general properties, classification, and their test for identification.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Describe novel medicinal agents from marine sources. Describe the role of Pharmacognosy in allopathy and traditional system of medicine.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Describe the sources, chemical constituents and uses of plants products containing plant fibers, hallucinogens teratogens, and natural allergens.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	0	0	0	0	2	2	2	1	2	3	2
CO2	2	0	0	0	0	2	2	0	2	2	3	2
CO3	2	0	0	0	0	2	2	3	1	2	3	1
CO4	2	0	0	0	0	2	2	2	2	2	3	1
CO5	2	2	2	1	2	2	1	2	1	2	2	2
Average	2	0.4	0.4	0.2	0.4	2	1.8	1.8	1.4	2	2.8	1.6

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BP604T: BIOPHARMACEUTICS AND PHARMACOKINETICS

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to		
CO1:	Understand the concepts and principles of Absorption, Distribution, Metabolism and Elimination of Drugs	L1:Remember L2:Understand L3: Apply
CO2:	Estimate various pharmacokinetic parameters of drugs following various compartment models with different routes of administration.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Understand the concepts of Design of Dosage Regimen	L3: Apply L4: Analyse L5: Evaluate
CO4:	Demonstrate the understanding of Bioavailability and Bioequivalence studies and the calculation	L3: Apply L4: Analyse L5: Evaluate
CO5:	Understand the basic pharmacokinetic parameters that describe drug absorption and distribution.	

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	0	3	0	2	2	0	0	0	2	2
CO2	3	0	3	3	0	2	2	0	0	0	2	2
CO3	2	0	0	3	0	2	1	0	0	0	1	1
CO4	3	0	3	2	0	1	2	0	0	0	2	2
CO5	2	2	1	2	1	1	2	2	1	0	2	2
Average	2.60	0.40	1.40	2.60	0.20	1.60	1.80	0.40	0.20	0.00	1.80	1.80

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BP605T: PHARMACEUTICAL BIOTECHNOLOGY

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Students will understand the various techniques used in modern biotechnology.	L1:Remember L2:Understand L3: Apply
CO2:	Students can design research strategy with step-by-step instructions to address a research problem	L3: Apply L4: Analyse L5: Evaluate
CO3:	Students can able to provide examples of current applications of biotechnology and advances in the different areas like medical, microbial, environmental, bioremediation, agricultural, plant, animal, and forensic	L3: Apply L4: Analyse L5: Evaluate
CO4:	Students can explain the concept and application of monoclonal antibody technology	L3: Apply L4: Analyse L5: Evaluate
CO5:	Students can demonstrate and Provide examples on how to use microbes and mammalian cells for the production of pharmaceutical products	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	0	1	2	0	3	1	1	0	1	1	1
CO2	3	0	1	3	0	3	1	2	2	1	3	2
CO3	3	0	1	2	0	3	1	1	0	1	1	1
CO4	3	0	1	3	0	2	1	1	1	1	2	2
CO5	3	0	1	2	0	2	1	2	1	1	1	1
Average	3.00	0.00	1.00	2.40	0.00	2.6	1.00	1.40	0.80	1.00	1.60	1.40

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BP606T: PHARMACEUTICAL QUALITY ASSURANCE (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Understand the aspects of quality assurance, total quality Management, ICH guidelines, QbD, relevant ISO and accreditation process in a pharmaceutical industry.	L1: Remember L2: Understand L3: Apply
CO2:	Describe the importance of organization, personnel, premises, equipment and raw material as per cGMP guideline.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Explain the quality control and GLP practices followed in Pharmaceutical Industry.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Appreciate the importance of documentation and complaint procedure.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Apply the principles of calibration and validation and follow good warehousing practices	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2	2	1	2	0	0	0	0	3	2
CO2	3	3	3	2	2	2	0	0	0	0	3	1
CO3	3	3	2	2	1	1	0	0	0	0	3	2
CO4	3	3	3	2	2	2	0	0	0	0	3	2
CO5	1	2	2	2	1	2	1	2	1	2	2	1
Average	2.40	2.80	2.40	2.00	1.40	1.80	0.20	0.40	0.20	0.40	2.80	1.60

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SEMESTER VII

BP701T. INSTRUMENTAL METHODS OF ANALYSIS (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	The basic theoretical principles and instrumentation and applications of UV, IR, fluorimeter, flame photometer. Theoretically understand the aspects of estimation of multi components.	L1: Remember L2: Understand L3: Apply L4: Analyse L5: Evaluate
CO2:	The separation and identification of compounds by various chromatographic techniques. Principles, Instrumentation, separation and identification of compounds by TLC, column chromatography, paper chromatography and electrophoresis technique.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Explain theory and instrumentation of GC, HPLC, gel chromatography, ion exchange chromatography and affinity chromatography.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Learn applications of various chromatographic techniques for organic, inorganic and natural products.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Practical skills for the analysis of drugs and excipients using various instrumentation techniques.	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	0	3	0	0	3	0	3	2
CO2	3	2	3	3	0	3	0	0	3	0	3	2
CO3	3	2	3	3	0	3	0	0	3	0	3	2
CO4	3	2	3	3	0	3	0	0	3	0	3	1
CO5	2	1	2	2	1	2	2	1	2	1	2	2
Average	2.80	1.80	2.80	2.80	0.20	2.80	0.40	0.20	2.80	0.20	2.80	1.80

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BP702T: INDUSTRIAL PHARMACY-II

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course students shall be able to		
CO1	Know the process of pilot plant and scale up of pharmaceutical dosage forms.	L1: Remember L2: Understand
CO2	Understand the process of technology transfer from lab scale to commercial batch.	L1: Remember L2: Understand
CO3	Know different Laws and Acts that regulate pharmaceutical industry.	L1: Remember L2: Understand L3: Apply
CO4	Understand the approval process and regulatory requirements for drug products	L1: Remember L2: Understand L3: Apply
CO5	Discuss various key concepts to develop Quality management & Certifications and Quality by Designs.	L1: Remember L2: Understand L3: Apply

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	3	3	3	2	2	3	2	2
CO2	3	3	3	2	3	2	2	2	2	1	2	2
CO3	3	3	3	2	3	3	3	3	1	1	2	1
CO4	3	3	2	2	3	2	2	2	1	1	2	2
CO5	2	2	2	2	2	1	1	2	1	2	1	1
Average	2.80	2.80	2.60	2.00	2.80	2.20	2.20	2.20	1.40	1.60	1.80	1.60

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BP703T: PHARMACY PRACTICE

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Students will demonstrate knowledge of and ability to use principles of therapeutics, quality improvement, communication, economics, health behavior, social and administrative aspects, health policy and legal issues in the practice of pharmacy	L1:Remember L2:Understand L3: Apply
CO2:	Students will use knowledge of drug distribution methods in hospital and apply it in the practice of pharmacy.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Students will effectively apply principles of drug store management and inventory control to medication use.	L3: Apply L4: Analyse L5: Evaluate
CO4:	Students will provide patient-centered care to diverse patients using the best available evidence and monitor drug therapy of patient through medication chart review, obtain medication history interview and counsel the patients, identify drug relat ed problems.	L3: Apply L4: Analyse L5: Evaluate
CO5:	Students will engage in innovative activities by making use of the knowledge of clinical trials	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	0	0	0	2	1	2	2	0	3	2
CO2	3	2	0	0	0	1	2	2	3	0	3	2
CO3	3	2	2	0	0	2	1	2	2	0	3	2
CO4	3	2	2	2	0	2	2	3	3	0	3	1
CO5	2	1	2	2	1	2	2	2	2	1	2	2
Average	2.80	1.60	1.20	0.80	0.20	1.80	1.60	2.20	2.40	0.20	2.80	1.80

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BP 704T: NOVEL DRUG DELIVERY SYSTEMS

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Terminology/definitions and rationale, advantages, disadvantages, selection of drug candidates.Approaches to design controlled release formulations based on diffusion, dissolution and ion exchange principles. Physicochemical and biological properties of drugs relevant to controlled release formulations	L1:Remember L2:Understand L3: Apply
CO2:	Definition, advantages and disadvantages, microspheres /microcapsules, microparticles, methods of microencapsulation, applications	L3: Apply L4: Analyse L5: Evaluate
CO3:	Introduction, Permeation through skin, factors affecting permeation, permeation enhancers, basic components of TDDS, formulation approaches	L3: Apply L4: Analyse L5: Evaluate
CO4:	Concepts and approaches advantages and disadvantages, introduction to liposomes, niosomes, nanoparticles, monoclonal antibodies and their applications	L3: Apply L4: Analyse L5: Evaluate
CO5:	Ocular Drug Delivery Systems: Introduction, intra ocular barriers and methods to overcome –Preliminary study, ocular formulations and ocuserts	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	2	3	2	1	2	3	3	2
CO2	3	2	2	2	2	3	2	1	2	3	3	2
CO3	3	2	2	2	1	1	2	1	2	1	3	2
CO4	3	2	1	3	2	1	2	2	2	1	2	1
CO5	2	2	2	2	1	2	2	1	1	2	2	2
Average	**2.80**	**2.00**	**1.80**	**2.20**	**1.60**	**2.00**	**2.00**	**1.20**	**1.80**	**2.00**	**2.60**	**1.80**

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SEMESTER VIII

BP801T. BIOSTATISITCS AND RESEARCH METHODOLOGY (Theory)

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explai		
CO1:	The basic principles of Biostatistics and concepts of frequency distribution, measures of central tendency, dispersion and correlation.	L1:Remember L2:Understand L3: Apply
CO2:	Understand and analyze the concepts of Regression, Probability and Parametric tests.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Apply the Concepts of Non parametric tests and understand the fundamentals of Research, Usage of Graphs and Designing the methodology	L2:Understand L3: Apply L4: Analyse L5: Evaluate
CO4:	The concepts of Regression modeling and Practical components of Industrial and clinical trials problems	L3: Apply L4: Analyse L5: Evaluate
CO5:	Understand, design and analyze the concepts of Factorial design and Response surface methodology	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	3	3	0	0	0	2	0	0	2	1
CO2	1	1	3	3	0	0	0	2	0	0	2	2
CO3	1	1	3	3	0	0	0	2	0	0	2	1
CO4	1	1	3	3	0	0	0	2	0	0	2	2
CO5	1	1	2	2	0	0	0	2	0	0	2	2
Average	1.00	1.00	2.80	2.80	0.00	0.00	0.00	2.00	0.00	0.00	2.00	1.60

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BP802T: SOCIAL AND PREVENTIVE PHARMACY

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1:	Acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide.	L1:Remember L2:Understand L3: Apply
CO2:	Have a critical way of thinking based on current healthcare development.	L3: Apply L4: Analyse L5: Evaluate
CO3:	Evaluate alternative ways of solving problems related to health and pharmaceutical issues	L3: Apply L4: Analyse L5: Evaluate
CO4:	Design a better health care service system	L3: Apply L4: Analyse L5: Evaluate
CO5:	Students will engage in	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	0	0	0	1	2	1	2	2	0	2	2
CO2	1	1	1	0	2	2	2	2	2	0	2	2
CO3	1	2	2	0	2	2	1	2	2	0	2	2
CO4	1	0	3	0	2	2	2	2	2	0	2	1
CO5	1	2	2	0	2	2	1	2	2	0	2	1
Average	1.00	1.00	1.60	0.00	1.80	2.00	1.40	2.00	2.00	0.00	2.00	1.60

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BP803ET: Pharma Marketing Management

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to		
CO1:	Describe the concept of pharmaceutical marketing. Enumerate the concept of product management in pharmaceutical industry	L1:Remember L2:Understand L3: Apply
CO2:	Discuss the various components of promotion of pharmaceutical products	L3: Apply L4: Analyse L5: Evaluate
CO3:	Explain the different pharmaceutical marketing channels	L3: Apply L4: Analyse L5: Evaluate
CO4:	Discuss the role and responsibility of professional sales representative and pricing authorities in India	L3: Apply L4: Analyse L5: Evaluate
CO5:	Discuss the emerging concepts of marketing and the role market research	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	0	3	3	1	3	0	0	0	2
CO2	2	2	2	0	3	3	1	2	0	0	0	2
CO3	1	2	2	0	3	3	1	3	0	0	0	1
CO4	2	2	2	0	3	3	1	2	0	0	0	2
CO5	2	2	2	0	2	2	1	2	0	0	0	1
Average	1.60	2.00	2.00	0.00	2.80	2.80	1.00	2.40	0.00	0.00	0.00	1.60

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BP809ET: Cosmetic Science

S.No	Course Outcomes	Knowledge level (BLOOMS Level)
After successful completion of the course student shall be able to explain		
CO1 :	Classify and define Cosmetics and Cosmeceuticals as per Indian and EU regulations Describe the role of cosmetic excipients and building blocks in the formulation of cosmetics	L1:Remember L2:Understand L3: Apply
CO2 :	Explain the structure and function of the skin, hair, teeth and gums, bleeding gums, mouth odour, teeth discoloration and sensitive teeth.	L3: Apply L4: Analyse L5: Evaluate
CO3 :	Describe the fundamentals of sun protection and the formulation of Sunscreens, antiperspirants and deodorants	L3: Apply L4: Analyse L5: Evaluate
CO4 :	Evaluate cosmetics for various physico-chemical properties.	L3: Apply L4: Analyse L5: Evaluate
CO5 :	Design cosmetics and cosmeceuticals that address the problems of dry skin, acne, dermatitis, prickly heat, wrinkles, blemishes, hair fall, Dandruff, body odour	L3: Apply L4: Analyse L5: Evaluate

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	0	0	0	0	0	0	0	0	0	0	2
CO2	2	0	0	3	0	0	0	0	0	0	0	2
CO3	2	0	0	3	0	0	0	0	0	0	0	1
CO4	2	0	0	0	0	0	0	0	0	0	0	2
CO5	2	0	0	0	0	0	0	0	0	0	0	2
Average	2.00	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80

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BP805ET: Pharmacovigilance

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
After completing this course, the student must demonstrate the knowledge and ability to:		
CO1	Students would know why drug safety monitoring is important	L1: Remember L3: Apply
CO2	They would know history and development of pharmacovigilance, know national and international scenario of pharmacovigilance	L2: Understand L3: Apply L4: Analyse
CO3	Students would be able to identify the Dictionaries, coding and terminologies used in pharmacovigilance	L2: Understand L3: Apply L4: Analyse
CO4	Students would be able to perform Detection of new adverse drug reactions and their assessment	L2: Understand L4: Analyse
CO5	Student would have learnt International standards for classification of diseases and drugs	L2: Understand L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	0	2	3	2	1	0	3	2
CO2	2	2	2	2	0	1	3	2	1	0	1	2
CO3	3	1	2	2	0	2	3	2	1	0	2	1
CO4	3	1	2	2	0	2	3	2	1	0	3	1
CO5	3	2	1	2	0	2	2	2	1	0	3	2
Average	2.80	1.60	1.80	2.00	0.00	1.80	2.80	2.00	1.00	0.00	2.40	1.60

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MET FACULTY OF PHARMACY

(Constituent Institute of MIT Group of Institutions)

Approved by Pharmacy Council of India, New Delhi & Affiliated to Dr. A. P. J. Abdul Kalam Technical University, Uttar Pradesh

BP807ET: Computer Aided Drug Design

S. No.	Course Outcomes (CO)	Knowledge Level (Blooms Level)
After completing this course, the student must demonstrate the knowledge and ability to:		
CO1	Explain the various stages of drug discovery. Learn the concept of bioisosterism and drug resistance	L1: Remember L3: Apply
CO2	Describe physicochemical Properties and the techniques involved in QSAR. Learn introduction to Bioinformatics and Cheminformatics	L2: Understand L3: Apply L4: Analyse
CO3	Learn methods in molecular and quantum mechanics	L2: Understand L3: Apply L4: Analyse
CO4	Explain various structure based drug design methods (Molecular docking, Denovo drug design)	L2: Understand L4: Analyse
CO5	Learn the concept of pharmacophore and modelling techniques. Explain the various techniques in Virtual Screening	L2: Understand L4: Analyse

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	2	2	3	3	2	3	2	2
CO2	3	2	3	3	2	2	3	3	2	3	2	2
CO3	3	2	3	3	2	2	3	3	2	3	2	2
CO4	3	2	3	3	2	2	3	3	2	3	2	2
CO5	2	2	2	2	2	2	2	2	2	2	2	2
Average	2.75	2.00	2.75	2.75	2.00	2.00	2.75	2.75	2.00	2.75	2.00	2.00

BLOOMS Taxonomy- L1: Remember, **L2:** Understand, **L3:** Apply, **L4:** Analyse, **L5:** Evaluate, **L6:** Create

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