BP 401T. Pharmaceutical Organic Chemistry III (Theory)

CO No.	COURSE OUTCOMES
BP401T1	To understand the nomenclature, properties and methods of preparation of heterocyclic compounds and fundamentals of stereo chemical aspects.
BP401T2	To explain stereo isomerism in biphenyl compounds (atropisomerism) and conditions for optical activity.
BP401T3	To discuss optical isomerism-optical activity, enantiomerism, diastereoisomerism and meso compounds, medicinal uses and other applications of organic compounds.
BP401T4	To elaborate the reactions and synthetic importance of metal hydride reduction (NaBH4 & LiAlH4), Clemmensen reduction, Oppenauer oxidation and Beckmann rearrangement

Course Articulation Matrix: Mapping of COs with POs

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP401T1	3	3	1	-	1	1	2	-	1	1	2
BP401T2	3	2	1	-	1	1	2	-	1	1	3
BP401T3	3	2	1	-	1	1	2	-	1	1	3
BP401T4	3	1	1	-	1	1	2	-	1	1	2

PO1: Pharmacy Knowledge, PO2: Planning Abilities, PO3: Problem analysis, PO4: Modern tool usage, PO5: Leadership skills PO6: Professional identity, PO7: Pharmaceutical ethics, PO8: Communication, PO9: Pharmacist & society, PO10: Environment & sustainability, PO11: Life-long learning.

Degree of compliance: 1-low 2-medium 3- high

BP 402 T. MEDICINAL CHEMISTRY- I (Theory)

COURSE OUTCOMES (COs)

At the end of the course, the student will be able to:

CO No.	COURSE OUTCOMES
BP402T1	To understand the Structural Activity Relationship of different class of drugs.
BP402T2	To understand the chemical synthesis of selected drugs.
BP402T3	To understand the synthetic route for selected category of drugs.
BP402T4	To understand the drug metabolic pathways, adverse effect and therapeutic value of various class of drug.

Course Articulation Matrix: Mapping of COs with POs

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP402T1	3	-	-	-	-	-	-	-	2	-	2
BP402T2	2	-	2	2	-	-	-	-	2	-	2
BP402T3	3	-	3	-	-	2	-	-	-	-	3
BP402T4	3	-	-	-	-	-	-	-	-	-	2

PO1: Pharmacy Knowledge, PO2: Planning Abilities, PO3: Problem analysis, PO4: Modern tool usage, PO5: Leadership skills PO6: Professional identity, PO7: Pharmaceutical ethics, PO8: Communication, PO9: Pharmacist & society, PO10: Environment & sustainability, PO11: Life-long learning.

Degree of compliance: 1-low 2-medium 3- high

BP 403 T. PHYSICAL PHARMACEUTICS - I (Theory)

1	**BP403T.1**	Acquire working knowledge and understanding the concepts of colloids, its properties, stability and applications. Understanding the formulation concepts of pharmaceutical suspensions and emulsions and their stability.
2	**BP403T.2**	Understanding the flow behaviour of fluids and to identify suitable characteristics for each formulation and the study of different types of deformation of solids and stress- strain relationship.
3	**BP403T.3**	Explain the derived and fundamental properties, flow properties of powders and its role in formulation. Know the methods to determine particle size and its role in formulation development.
4	**BP403T.4**	Study the reaction kinetics, reaction order, factors affecting the rate of the reaction. Understanding the physical and chemical factors affecting degradation of drug, accelerated stability testing for determination of expiry date of formulation,

CO Code	Cognition level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP403T.CO1	3	2	0	1	0	0	0	0	0	0	1	1
BP403T.CO2	3	2	0	1	0	0	0	0	0	0	1	1
BP403T.CO3	3	2	0	1	0	0	0	0	0	0	1	1
BP403T.CO4	3	2	0	1	0	0	0	0	0	1	1	1
Avg	3	2	0	1	0	0	0	0	0	0.25	1	1

BP 404 T. PHARMACOLOGY I (Theory)

CO No.	COURSE OUTCOMES
BP404T1	Explain what drugs do to living organisms and how their effects can be applied to therapeutics.
BP404T2	The information about the drug's mechanism of action, physiological and biochemical effects (pharmacodynamics) of various drugs.
BP404T3	The information about absorption, distribution, metabolism and excretion (pharmacokinetics) various drugs.
BP404T4	Explain the interactions, adverse effects doses, clinical uses, contra indications and routes of administration of different classes of drugs.

Course Articulation Matrix: Mapping of COs with POs

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP503T1	3	2	2	1	-	1	1	-	1	-	3
BP503T2	3	3	2	2	1	2	-	2	2	1	3
BP503T3	3	3	2	1	1	2	1	2	1	1	3
BP503T4	3	2	2	1	1	2	1	1	1	1	3

PO1: Pharmacy Knowledge, PO2: Planning Abilities, PO3: Problem analysis, PO4: Modern tool usage, PO5: Leadership skills PO6: Professional identity, PO7: Pharmaceutical ethics, PO8: Communication, PO9: Pharmacist & society, PO10: Environment & sustainability, PO11: Life-long learning.

Degree of compliance: 1-low 2-medium 3- high

BP 405 T. PHARMACOGNOSY I (Theory)

Course Outcomes (COs)

At the end of the course, the student will be able to:

CO No.	Course Outcomes
BP408P1	Perform quantitative microscopy for leaf constants.
BP408P2	Determine different extractive and ash values as per pharmacopeial requirements.
BP408P3	Understand the morphological and microscopic features of medicinal plants, and Students will be able to identify diagnostic features of plants such as calcium oxalate, and starch.
BP408P4	Identify crude drugs based on the chemical evaluation.

Course Articulation Matrix: Mapping of COs with POs

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP408P1	3	2	2	2	-	-	-	-	-	3	3
BP408P2	3	3	3	3	-	-	-	-	2	3	3
BP408P3	3	3	3	3	-	-	-	-	-	-	3
BP408P4	3	2	2	-	-	-	-	-	-	-	3

PO1: Pharmacy Knowledge, PO2: Planning Abilities, PO3: Problem analysis, PO4: Modern tool usage, PO5: Leadership skills PO6: Professional identity, PO7: Pharmaceutical ethics, PO8: Communication, PO9: Pharmacist & society, PO10: Environment & sustainability, PO11: Life-long learning.

BP406P. Medicinal Chemistry I (Practical)

At the end of the course, the student will be able to:

CO No.	COURSE OUTCOMES
BP406P1	Learn synthesis of medicinally important compounds / drug intermediates with Recrystallization
BP406P2	To perform assays of pharmaceutically important drugs using various titrimetric methods
BP406P3	To analyze the selected drugs percentage in dosage forms and to determine the percentage purity
BP406P4	Study of Partition coefficient of drugs

Course Articulation Matrix: Mapping of COs with POs

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP406P1	3	2	1	1	-	-	1	-	2	1	3
BP406P2	3	2	1	1	-	-	1	-	2	1	3
BP406P3	3	2	1	1	-	-	1	-	2	1	3
BP406P4	3	2	1	1	-	-	1	-	2	1	3

PO1: Pharmacy Knowledge, PO2: Planning Abilities, PO3: Problem analysis, PO4: Modern tool usage, PO5: Leadership skills PO6: Professional identity, PO7: Pharmaceutical ethics, PO8: Communication, PO9: Pharmacist & society, PO10: Environment & sustainability, PO11: Life-long learning.

Degree of compliance: 1-low 2-medium 3- high

BP407P. Physical Pharmaceutics I (Practical)

1	**BP407P.1**	Apply the principles of dispersed systems and determine the stability of suspensions
2	**BP407P.2**	Determination of fundamental and derived properties of powders.
3	**BP407P.3**	Determination of viscosity of liquids using Ostwald viscometer and Brookfield viscometer
4	**BP407P.4**	Apply the principles of kinetics for detection of rate constant and accelerated stability studies.

CO Code	Cognition level	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
BP403T.CO1	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
BP403T.CO2	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
BP403T.CO3	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
BP403T.CO4	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
Avg	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**

BP408P. PHARMACOLOGY (Practical)

At the end of the course, the student will be able to:

CO No.	COURSE OUTCOMES
BP408P1	Understand the instruments and laboratory animals as per CPSCEA guidelines used in experimental pharmacology
BP408P2	Understand the different routes of administration, blood withdrawal techniques, anesthesia and euthanasia in mice/rates and various laboratory animals
BP408P3	Understand the effect of enzyme inducers in sleeping time in mice and effect of drugs on ciliary motility, rabbit's eye, role of various drugs on muscle relaxant and locomotion activity
BP408P4	Understand and apply the concept of anticatatonic, anticonvulsant, anxiolytic, and study local anaesthetic agents in rats/mice

Course Articulation Matrix: Mapping of COs with POs

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP408P1	3	1	2	2	-	-	-	-	3	-	3
BP408P2	3	1	2	3	-	-	-	-	3	-	3
BP408P3	3	1	2	2	-	-	-	-	3	-	3
BP408P4	3	1	2	3	-	-	-	-	3	-	3

PO1: Pharmacy Knowledge, PO2: Planning Abilities, PO3: Problem analysis, PO4: Modern tool usage, PO5: Leadership skills PO6: Professional identity, PO7: Pharmaceutical ethics, PO8: Communication, PO9: Pharmacist & society, PO10: Environment & sustainability, PO11: Life-long learning.

Degree of compliance: 1-low 2-medium 3- high

BP409P. PHARMACOGNOSY I (Practical)

Course Outcomes (COs)

At the end of the course, the student will be able to:

CO No.	Course Outcomes
BP408P1	Perform quantitative microscopy for leaf constants.
BP408P2	Determine different extractive and ash values as per pharmacopeial requirements.
BP408P3	Understand the morphological and microscopic features of medicinal plants, and Students will be able to identify diagnostic features of plants such as calcium oxalate, and starch.
BP408P4	Identify crude drugs based on the chemical evaluation.

Course Articulation Matrix: Mapping of COs with POs

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP408P1	3	2	2	2	-	-	-	-	-	3	3
BP408P2	3	3	3	3	-	-	-	-	2	3	3
BP408P3	3	3	3	3	-	-	-	-	-	-	3
BP408P4	3	2	2	-	-	-	-	-	-	-	3

PO1: Pharmacy Knowledge, PO2: Planning Abilities, PO3: Problem analysis, PO4: Modern tool usage, PO5: Leadership skills PO6: Professional identity, PO7: Pharmaceutical ethics, PO8: Communication, PO9: Pharmacist & society, PO10: Environment & sustainability, PO11: Life-long learning.