

PROGRAM OUTCOMES

1. **Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioural, social, and administrative pharmacy sciences; and manufacturing practices.
2. **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.
3. **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.
4. **Modern tool usage:** Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
5. **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 wellbeing.
6. **Professional Identity:** Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
7. **Pharmaceutical Ethics:** Honour 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.
8. **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.
9. **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.



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10. **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.

11. **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-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an on-going basis.

Course outcome and Mapping with Program Outcomes

First Year / Semester I

Course code	Name of the course
BP101T	Human Anatomy and Physiology I– Theory
BP102T	Pharmaceutical Analysis I – Theory
BP103T	Pharmaceutics I – Theory
BP104T	Pharmaceutical Inorganic Chemistry – Theory
BP105T	Communication skills – Theory
BP106RBT BP106RMT	Remedial Biology/ Remedial Mathematics – Theory
BP107P	Human Anatomy and Physiology – Practical
BP108P	Pharmaceutical Analysis I – Practical
BP109P	Pharmaceutics I – Practical
BP110P	Pharmaceutical Inorganic Chemistry – Practical
BP111P	Communication skills – Practical
BP112RBP	Remedial Biology – Practical

Course Code BP101T Human Anatomy and Physiology I– Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP101T .1	Upon completion of this course the student should be able to: 1. Explain the gross morphology, structure and functions of various organs of the human body.	PO1, PO2, PO3, PO4, PO8, PO9, PO11
BP101T .2	2. Describe the various homeostatic mechanisms and their imbalances.	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO11
BP101T .3	3. Appreciate coordinated working pattern of different organs of various systems like skeletal, Cardiovascular, lymphatic and peripheral nervous system.	PO1, PO2, PO3, PO4, PO8, PO9, PO11

Course Code BP102T Pharmaceutical Analysis I – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP102T .1	Upon completion of the course student shall be able to 1. Understand the principles of volumetric and electro chemical analysis	PO1, PO7, PO9, PO11

BP102T .2	2. Classify the types of titrimetric processes.	PO1, PO7, PO9, PO11,
BP102T .3	3. Identify the appropriate analytical method for the analysis of drugs	PO1, PO2, PO3, PO7, PO9, PO11

Course Code BP103T Pharmaceutics I – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP103T .1	Upon completion of this course the student should be able to: 1. Know the history of profession of pharmacy	PO1, PO5, PO6, PO7, PO11
BP103T .2	2. Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations	PO1, PO3, PO4, PO11
BP103T .3	3. Understand the professional way of handling the prescription	PO1, PO7, PO9, PO11
BP103T .4	4. Preparation of various conventional dosage forms	PO1, PO7, PO9, PO11

Course Code BP104T Pharmaceutical Inorganic Chemistry – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course, the learner will be able to:	
BP104T .1	1. Know and analyse the minute impurities in a sample	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP104T .2	2. Understand the basics of various inorganic pharmaceutical formulations including radiopharmaceuticals.	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP104T .3	3. Apply the knowledge of the inorganic formulations including radiopharmaceuticals.	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11

Course Code BP105T Communication skills – Theory

Co. No.	Course outcome	Mapped Programme Outcomes



	Upon completion of the course student shall be able to	
BP105T .1	1. Understand the behavioral needs for a Pharmacist to function effectively in the areas of pharmaceutical operation	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP105T .2	2. Communicate effectively (Verbal and Non Verbal)	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP105T .3	3. Effectively manage the team as a team player	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP105T .4	4. Develop interview skills	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11

Course Code BP106RMT Remedial Mathematics – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP106RMT.1	Objectives: Upon completion of the course the student shall be able to:- 1. Know the theory and their application in Pharmacy	PO1, PO2, PO3, CO9, CO10, CO11
BP106RMT .2	2. Solve the different types of problems by applying theory	PO1, PO2, PO3, PO6, CO7, CO9, CO10, CO11
BP106RMT .3	3. Appreciate the important application of mathematics in Pharmacy	PO1, PO3, PO5, PO10, PO11

Course Code BP106RBT Remedial Biology – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP106RBT.1	RBT - Upon completion of the course, the student shall be able to: 1. Know the classification and salient features of five kingdoms of life	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP106RBT .2	2. Understand the basic components of anatomy & physiology of plant	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP106RBT .3	3. Know understand the basic components of anatomy & physiology animal with special reference to human	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11

Course Code BP108P Pharmaceutical Analysis I – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
BP108P.1	Upon completion of this course the student should be able to: 1. carryout various volumetric and electrochemical titrations	PO1, PO7, PO9, PO11
BP108P.2	2. Apply the knowledge of volumetric analysis in the preparation of reagents and solutions	PO1, PO2, PO3, PO7, PO 9, PO11
BP108P.3	3.Relate the theoretical concepts to the designed experiments	PO1, PO2, PO3, PO7, PO 9, PO11

Course Code BP109P Pharmaceutics I – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
BP109P.1	Upon completion of the course, the learner will be able to: 1. Explain formulation, evaluation and labelling of aromatic water, glycerides, syrups,elixirs and powder preparations.	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP109P.2	2. Describe use of ingredients in formulation and category of formulation.	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP109P.3	3. Compare various monophasic preparations depending upon their formulation.	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP109P.4	4. Selection of suitable packaging material (container-closure) for the preparation.	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11

Course Code BP110P Pharmaceutical Inorganic Chemistry – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course, the learner will be able to:	
BP110P.1	1. Know the basics and analyse the minute impurities in a sample	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP110P.2	2. Identify the inorganic products through inorganic analysis	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11

BP110P.3	3. Test the purity of inorganic molecules	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP110P.4	4. Prepare and synthesize various inorganic molecules	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11

Course Code BP111P Communication skills – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course student shall be able to	
BP111P.1	1. Communicate effectively (Verbal and Non Verbal)	PO1, PO3, PO5, PO6, PO7, PO9, PO10, PO11
BP111P.2	2. Effectively manage the team as a team player	PO1, PO7, PO9, PO11
BP111P.3	3. Develop interview skills	PO1, PO7, PO9, PO11,
BP111P.4	4. Demonstrate conversation skills using appropriate body language and tone	PO1, PO2, PO3, PO7, PO9, PO11
BP111P.5	5. Develop Leadership qualities and essentials Recognize phonemes for proper articulation of words	PO1, PO7, PO9, PO11

First Year / Semester II

Course Code	Name of the course
BP201T	Human Anatomy and Physiology II – Theory
BP202T	Pharmaceutical Organic Chemistry I – Theory
BP203T	Biochemistry – Theory
BP204T	Pathophysiology – Theory
BP205T	Computer Applications in Pharmacy – Theory
BP206T	Environmental sciences – Theory
BP207P	Human Anatomy and Physiology II – Practical
BP208P	Pharmaceutical Organic Chemistry I – Practical
BP209P	Biochemistry – Practical
BP210P	Computer Applications in Pharmacy – Practical

Course Code BP201T Human Anatomy and Physiology II – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP201T.1	1. Explain the gross morphology, structure and functions of various organs of the human body.	PO1, PO6, PO8, PO9, PO11
BP201T.2	2. Describe the various homeostatic mechanisms and their imbalances.	PO1, PO2, PO3, PO4, PO6, PO8, PO9, PO11
BP201T.3	3. Appreciate coordinated working pattern of different organs of various systems like respiratory, endocrine, gastrointestinal and Central nervous system.	PO1, PO2, PO3, PO6, PO8, PO9, PO11

Course Code BP202T Pharmaceutical Organic Chemistry I – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course the learner shall be able to	
BP202T.1	1. write the structure, name and the type of isomerism of the organic compound	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP202T.2	2. write the reaction, name the reaction and orientation of reactions	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11

BP202T.3	3. account for reactivity/stability of compounds,	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP202T.4	4. identify/confirm the identification of organic compound	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11

Course Code BP203T Biochemistry – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP203T.1	Upon completion of the Co. No. student shall be able to: 1. Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes.	PO1, PO7, PO9, PO11
BP203T.2	2. Understand the metabolism of nutrient molecules in physiological and pathological conditions.	PO1, PO7, PO9, PO11
BP203T.3	3. Understand the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins.	PO1, PO7, PO9, PO11

Course Code BP204T Pathophysiology – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP204T.1	Upon completion of the Co. No. student shall be able to: 1. Describe the etiology and pathogenesis of the selected disease states.	PO1, PO4, PO7, PO8, PO9, PO11
BP204T.2	2. Describe the various homeostatic mechanisms and their imbalances.	PO1, PO4, PO7, PO8, PO9, PO10, PO11
BP204T.3	3. Appreciate coordinated working pattern of different organs of various systems like skeletal, Cardiovascular, lymphatic and peripheral nervous system.	PO1, PO4, PO7, PO8, PO9, PO11

Course Code BP205T Computer Applications in Pharmacy – Theory



Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course the student shall be able to	
BP205T.1	1. know the various types of application of computers in pharmacy	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP205T.2	2. know the various types of databases	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP205T.3	3. know the various applications of databases in pharmacy	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11

Course Code BP206T Environmental sciences – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP206T.1	Upon completion of the course the student shall be able to: 1. Create the awareness about environmental problems among learners.	PO1, PO3, PO5, PO6, PO7, PO10, PO11
BP206T.2	2. Impart basic knowledge about the environment and its allied problems.	PO1, PO2, PO3, PO5, PO6, PO7, PO10, PO11
BP206T.3	3. Develop an attitude of concern for the environment.	PO3, PO4, PO6, PO7, PO8, PO10
BP206T.4	4. Motivate learner to participate in environment protection and environment improvement.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10
BP206T.5	5. Acquire skills to help the concerned individuals in identifying and solving	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10
BP206T.6	6. Strive to attain harmony with Nature.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11

Course Code BP207P Human Anatomy and Physiology II –Practical

Co. No.	Course outcome	Mapped Programme Outcomes
BP207P.1	1. Learn the structure and functions of the various systems and homeostatic mechanisms of the human body	PO1, PO2, PO3, PO6, PO8, PO9, PO11

BP207P.2	2. Record body temperature, BMI, Lung volumes and capacities; and to examination various types of taste.	PO1, PO2, PO3, PO4, PO6, PO8, PO9, PO11
BP207P.3	3. Verify the physiological processes discussed in theory classes	PO1, PO2, PO6, PO8, PO9, PO11

Course Code BP208P Pharmaceutical Organic Chemistry I– Practical

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course the learner shall be able to	
BP208P.1	1. analyze organic compounds qualitatively.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP208P.2	2. synthesize suitable derivative of an organic compound	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP208P.3	3. construct molecular model of organic compounds	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11

Course Code BP209P Biochemistry – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
BP209P.1	Upon completion of the Co. No. student shall be able to: 1. Identify and differentiate between carbohydrates and proteins	PO1, PO2, PO3, PO7, PO9, PO11
BP209P.2	2. determine few blood constituents	PO1, PO7, PO9, PO11
BP209P.3	3. Understand how to prepare buffers	PO1, PO7, PO9, PO11
BP209P.4	4. Understand effect of temperature and concentration on enzyme activity	PO1, PO7, PO9, PO11

Course Code BP210P Computer Applications in Pharmacy – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course the student shall be able to	
BP210P.1	1. Use MS Word to create questionnaires	PO1, PO2, PO3, PO4, PO5,

	and other documentation related to pharmacy.	PO7, PO9, PO10, PO11
BP210P.2	2. Use MS Access to modify the data bases created.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP210P.3	3. Handle web and XML pages to export table, forms and queries.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP210P.4	4. Generate report; work with queries on MS Access.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP210P.5	5. Create database, HTML web page.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11

Second Year / Semester III

Course code	Name of the course
BP301T	Pharmaceutical Organic Chemistry II – Theory
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
BP 308P	Pharmaceutical Engineering –Practical

Course Code **BP301T** Pharmaceutical Organic Chemistry II – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course, the learner will be able to:	
BP301T.1	1. Know the basics of some organic molecules and its reactions	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP301T.2	2. Apply various methods of preparation and reactions of different organic compounds	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP301T.3	3. Emphasize on mechanisms and differences	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11
BP301T.4	4. Apply the concepts with examples	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO12

Course Code BP302T Physical Pharmaceutics I – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP302T.1	Upon the completion of the course student shall be able to 1. Understand various physicochemical properties of drug molecules in the designing the dosage forms	PO1, PO2, PO3, PO11,
BP302T.2	2. Know the principles of chemical kinetics & to use them for stability testing nad determination of expiry date of formulations	PO1, PO2, PO3, PO11,
BP302T.3	3. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.	PO1, PO2, PO3, PO11,

Course Code BP303T Pharmaceutical Microbiology – Theory

BP303T.1	Upon completion of the Co. No. student shall be able to; 1. Understand methods of identification, cultivation and preservation of various microorganisms	PO1, PO7, PO10, PO11
BP303T.2	2. To understand the importance and implementation of sterilization in pharmaceutical processing and industry	PO1, PO3, PO4, PO7, PO10
BP303T.3	3. Learn sterility testing of pharmaceutical products.	PO1, PO3, PO4, PO7, PO10
BP303T.4	4. Carried out microbiological standardization of Pharmaceuticals.	PO1, PO4, PO10
BP303T.5	5. Understand the cell culture technology and its applications in pharmaceutical industries	PO3, PO4, PO9, PO10

Course Code BP304T Pharmaceutical Engineering – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course student shall be able:	
BP304T.1	1. To know various unit operations used in Pharmaceutical industries.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP304T.2	2. To understand the material handling	PO1, PO2, PO3, PO4,

	techniques.	PO6, PO7, PO9, PO10, PO11
BP304T.3	3. To perform various processes involved in pharmaceutical manufacturing process.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP304T.4	4. To carry out various test to prevent environmental pollution.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP304T .5	5. To appreciate and comprehend significance of plant lay out design for optimum use of resources.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP304T.6	6. To appreciate the various preventive methods used for corrosion control in Pharmaceutical industries.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11

Course Code BP305P Pharmaceutical Organic Chemistry II – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course, the learner will be able to:	
BP305P.1	1. Know the basics of distillation & recrystallisation	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP305P.2	2. Know the basics of determination of different oil values	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP305P.3	3. Prepare different organic compounds and purify them	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP305P.4	4. Apply the concepts of distillation & recrystallisation in purification of organic compounds	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11

Course Code BP306P Physical Pharmaceutics I – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
BP306P.1	Upon completion of the course, the learner will be able to 1. Develop skills and techniques those are parts of pharmaceutical procedures through the actual use of equipment and instruments.	PO1, PO2, PO3, PO7, PO 9, PO11
BP306P.2	2. To interpret scientific data, represent the data in a tabular and/or graphical form.	PO1, PO2, PO3, PO7, PO 9, PO11
BP306P.3	3. To determination the solubility of drug at room	PO1, PO7, PO9, PO11

	temperature, pKa value by Half Neutralization/ Henderson Hassel Balch equation, Partition coefficient, CST, surface tension ,HLB number , Freundlich and Langmuir constants, CMC, stability constant and donor acceptor ratio of complex by solubility method and by pH titration method	
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Course Code BP307P Pharmaceutical Microbiology – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
BP307P.1	Upon completion of the Co. No. student shall be able to; 1. Interpret the methods of identification, cultivation and preservation of various microorganisms	PO1, PO7, PO10, PO11
BP307P.2	2. Perform & understand the importance and implementation of various sterilization methods in pharmaceutical processing and industry	PO1, PO3, PO4, PO7, PO10
BP307P.3	3. Perform sterility testing of pharmaceutical products.	PO1, PO3, PO4, PO7, PO10
BP307P.4	4. Perform the cell culture technology and its applications in pharmaceutical industries	PO3, PO4, PO9, PO10

Course Code BP308P Pharmaceutical Engineering –Practical

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course student shall be able:	
BP308P.1	1. To know various unit operations used in Pharmaceutical industries.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP308P.2	2. To understand the material handling techniques.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP308P.3	3. To perform various processes involved in pharmaceutical manufacturing process.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP308P.4	4. To carry out various test to prevent environmental pollution.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP308P.5	5. To appreciate and comprehend significance of	PO1, PO2, PO3,

	plant lay out design for optimum use of resources.	PO4, PO6, PO7, PO9, PO10, PO11
BP308P.6	6. To understand & perform the various preventive methods used for corrosion control in Pharmaceutical industries	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11

Second Year /Semester IV

Course Code	Name of the course
BP401T	Pharmaceutical Organic Chemistry III– Theory
BP402T	Medicinal Chemistry I – Theory
BP403T	Physical Pharmaceutics II – 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 I – Practical

Course Code BP401T Pharmaceutical Organic Chemistry III– Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP401T.1	Upon completion of the Co. No. student shall be able to; 1. understand the methods of preparation and properties of organic compounds	PO1, PO7, PO9, PO11
BP401T .2	2. explain the stereo chemical aspects of organic compounds and stereo chemical reactions	PO1, PO2, PO3, PO7, PO 9, PO11
BP401T .3	3. know the medicinal uses and other applications of organic compounds	PO1, PO7, PO9, PO11

Course Code BP403T Physical Pharmaceutics II – Theory

BP403T.1	Upon the completion of the course student shall be able to: 1. Understand various physicochemical properties of drug molecules in the designing the dosage forms.	PO1, PO2, PO11
BP403T.2	2. Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations	PO1, PO2, PO4, PO11
BP403T.3	3. Demonstrate use of physicochemical properties in the formulation	PO1, PO2, PO11



BP403T.4	4. Development and evaluation of dosage forms.	PO1, PO2, PO4, PO11
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Course Code BP404T Pharmacology I – Theory

BP404T.1	Upon completion of this course the student should be able to: 1. Understand the pharmacological actions of different categories of drugs	PO1, PO6, PO7, PO8, PO9, PO11
BP404T.2	2. Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels.	PO1, PO4, PO6, PO7, PO8, PO9, PO11
BP404T.3	3. Apply the basic pharmacological knowledge in the prevention and treatment of various diseases.	PO1, PO6, PO7, PO8, PO9, PO11

Course Code BP405T Pharmacognosy and Phytochemistry I

	Upon completion of this course the student should be able to:	
BP405T.1	1. Understand the techniques in the cultivation and production of crude drugs	PO1, PO3, PO4, PO8, PO 10, PO11
BP405T.2	2. Define the crude drugs, their uses and chemical nature	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP405T.3	3. Know the evaluation techniques for the herbal drugs	PO1, PO2, PO4, PO5, PO8, PO10, PO11
BP405T.4	4. Perform the microscopic and morphological evaluation of crude Drugs	PO1, PO2, PO5, PO6, PO9, PO11

Course Code BP407P Physical Pharmaceutics II – Practical

BP407P.1	Upon completion of the course, the learner will be able to: 1. To develop skills and techniques those are parts of pharmaceutical procedures through the actual use of equipment and instruments.	PO1, PO7, PO9, PO11
BP407P.2	2. To interpret scientific data, represent the data in a tabular and/or graphical form.	PO1, PO7, PO9, PO11
BP407P.3	3. To determine of particle size, particle size distribution, bulk density, true density and porosity, angle of repose and influence of lubricant on angle of repose.	PO1, PO7, PO9, PO11
BP407P.4	4. To determine of viscosity of liquid using Ostwald viscometer and using Brookfield viscometer.	PO1, PO7, PO9, PO11
BP407P.5	5. To determine sedimentation volume with effect of different suspending agent & different concentration of single suspending agent.	PO1, PO7, PO9, PO11
BP407P.6	6. To determine reaction constant in Kinetic studies.	PO1, PO7, PO9, PO11

BP407P.6	7. To perform accelerated stability studies.	PO1, PO2, PO3, PO7, PO 9, PO11
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Course Code BP408P Pharmacology I – Practical

BP408P.1	Upon completion of this course the student will be able to: 1. Understand the concepts and regulations in experimental Pharmacology	PO1, PO3, PO6, PO7, PO9, PO11
BP408P.2	2. Understand working principles of various instruments used in experimental pharmacology	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP408P.3	3. Observe the effect of drugs on animals by simulated experiments	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP408P.4	4. Appreciate correlation of pharmacology with other bio medical sciences	PO1, PO3, PO6, PO7, PO9, PO11

Third Year / Semester V

Course Code	Name of the course
BP501T	Medicinal Chemistry II – Theory
BP502T	Industrial PharmacyI– 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

BP501T Medicinal Chemistry II – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP501T.1	Upon completion of the course, the learner will be able to: 1. Know the Structural Activity Relationships (SAR) of different class of drugs and its role in pharmacologic effect	PO1, PO4, PO6, PO7
BP501T.2	2. Write the synthesis of some drugs	PO1, PO4, PO6, PO7
BP501T.3	3. Know therapeutic properties of various drug molecules	PO1, PO4, PO6, PO7

BP502T Industrial Pharmacy I– Theory

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course the student shall be able to:	
BP502T.1	1. Know the various pharmaceutical dosage forms and their manufacturing techniques.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP502T.2	2. Know various considerations in development of pharmaceutical dosage forms	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP502T.3	3. Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11

BP503T Pharmacology II – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP503T.1	Upon completion of this course the student should be able to: 1. Understand the pharmacological actions of different categories of drugs	PO1, PO6, PO7, PO8, PO9, PO11
BP503T.2	2. Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels.	PO1, PO4, PO6, PO7, PO8, PO9, PO11
BP503T.3	3. Apply the basic pharmacological knowledge in the prevention and treatment of various diseases.	PO1, PO3, PO4, PO6, PO7, PO8, PO9, PO11

BP504T Pharmacognosy and Phytochemistry II– Theory

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course, the learner will be able to	



BP504T.1	1. know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents	PO1, PO3, PO4, PO8, PO10, PO11
BP504T.2	2. Understand the preparation and development of herbal formulation.	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP504T.3	3. Find the herbal drug interactions	PO1, PO2, PO4, PO5, PO8, PO10, PO11
BP504T.4	4. Perform isolation and identification of phytoconstituents	PO1, PO2, PO5, PO6, PO9, PO11

Course Code BP505T Pharmaceutical Jurisprudence – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP505T.1	Upon completion of the course, the student shall be able to understand: 1. The Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals.	PO1, PO7, PO9, PO11
BP505T.2	2. Various Indian pharmaceutical Acts and Laws	PO1, PO7, PO9, PO11
BP505T.3	3. The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals	PO1, PO7, PO9, PO11
BP505T.4	4. The code of ethics during the pharmaceutical practice	PO1, PO2, PO3, PO7, PO9, PO11

Course Code BP506P Industrial Pharmacy I – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course, the learner will be able to:	
BP506P.1	1. perform Preformulation studies	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP506P.2	2. prepare, evaluate and perform quality control test (as per IP) of tablets, capsules	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP506P.3	3. perform Coating of tablets	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11



BP506P.4	4. prepare injection, Eye drops/ and Eye ointments, Creams (cold / vanishing cream)	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP506P.5	5. evaluation of Glass containers (as per IP)	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11

Course Code BP507P Pharmacology II – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
BP507P.1	Upon completion of this course the student should be able to: 1. Demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments	PO1, PO3, PO6, PO7, PO9, PO11
BP507P.2	2. Demonstrate the various receptor actions using isolated tissue preparation	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP507P.3	3. Observe the effect of drugs on animals by simulated experiments	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP507P.4	4. Appreciate correlation of pharmacology with other bio medical sciences	PO1, PO3, PO6, PO7, PO9, PO11

Course Code BP508P Pharmacognosy and Phytochemistry II

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course, the learner will be able to	
BP508P.1	1. Perform gross anatomical study & Powder characteristics of the crude drugs	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP508P.2	2. Know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP508P.3	3. Analyze unorganised drugs with the help of Physical & chemical test	PO1, PO3, PO6, PO7, PO9, PO11

Third Year / Semester VI

Course Code	Name of the course
BP601T	Medicinal Chemistry III – Theory
BP602T	Pharmacology III – Theory
BP603T	Herbal Drug Technology – Theory
BP604T	Biopharmaceutics and Pharmacokinetics – Theory
BP605T	Pharmaceutical Biotechnology – Theory
BP606T	Quality Assurance –Theory
BP607P	Medicinal chemistry III – Practical
BP608P	Pharmacology III – Practical
BP609P	Herbal Drug Technology – Practical

Course Code BP601T Medicinal Chemistry III – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP601T.1	Upon completion of the course the learner shall be able to 1. Understand the importance of drug design and different techniques of drug design.	PO1, PO4, PO6, PO7
BP601T.2	2. remember the chemistry of drugs with respect to their biological activity.	PO1, PO4, PO6, PO7
BP601T.3	3. Know the metabolism, adverse effects and therapeutic value of drugs.	PO1, PO4, PO6, PO7
BP601T.4	4. describe the importance of SAR of drugs	PO1, PO4, PO6, PO7

Course Code BP602T Pharmacology III – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP602T.1	Upon completion of this course the student should be able to: 1. Understand the pharmacological actions of different categories of drugs	PO1, PO6, PO7, PO8, PO9, PO11
BP602T.2	2. Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels.	PO1, PO4, PO6, PO7, PO8, PO9, PO11
BP602T.3	3. Comprehend the principles of toxicology and treatment of various poisonings	PO1, PO3, PO4, PO6, PO7, PO9, PO11
BP602T.4	4. Apply the basic pharmacological	PO1, PO3, PO4, PO6,



	knowledge in the prevention and treatment of various diseases.	PO7, PO8, PO9, PO11
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Course Code BP603T Herbal Drug Technology

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of this course the student should be able to:	
BP603T.1	1. Understand raw material as source of herbal drugs from cultivation to herbal drug product	PO1, PO2, PO4, PO6, PO8, PO10, PO11
BP603T.2	2. Know the WHO and ICH guidelines for evaluation of herbal drugs	PO1, PO5, PO6, PO7, PO8, PO10, PO11
BP603T.3	3. Know the herbal cosmetics, natural sweeteners, and nutraceuticals	PO1, PO2, PO3, PO 4, PO6, PO7, PO8, PO9, PO 10
BP603T.4	4. Appreciate patenting of herbal drugs, GMP.	PO1, PO 4, PO5, PO7, PO8, PO9, PO11

Course Code BP604T Biopharmaceutics and Pharmacokinetics

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course student shall be able to:	
BP604T.1	1. Understand the basic concepts in biopharmaceutics and pharmacokinetics and their significance.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP604T.2	2. Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution,	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP604T.3	3. To understand the concepts of bioavailability and bioequivalence of drug products and their significance.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11
BP604T.4	4. Understand various pharmacokinetic parameters, their significance & applications.	PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO11

Course Code BP605T Pharmaceutical Biotechnology – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
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BP605T.1	Upon completion of the Co. No. student shall be able to: 1. Understanding the importance of Immobilized enzymes in Pharmaceutical Industries	PO1, PO7, PO9, PO11
BP605T.2	2. Genetic engineering applications in relation to production of pharmaceuticals	PO1, PO7, PO9, PO11
BP605T.3	3. Importance of Monoclonal antibodies in Industries	PO1, PO7, PO9, PO11
BP605T.4	4. Appreciate the use of microorganisms in fermentation technology	PO1, PO7, PO9, PO11

Course Code BP606T Quality Assurance –Theory

	Upon completion of the course student shall be able to:	
BP606T.1	1. understand the cGMP aspects in a pharmaceutical industry	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11
BP606T.2	2. appreciate the importance of documentation	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11
BP606T.3	3. understand the scope of quality certifications applicable to pharmaceutical industries	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11
BP606T.4	4. understand the responsibilities of QA & QC departments	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11

Course Code BP607P Medicinal chemistry III – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
BP607P.1	Upon completion of the course the learner shall be able to 1. synthesize drugs and intermediates by conventional and microwave technique	PO2, PO3, PO5, PO8
BP607P.2	2. analyze drug samples quantitatively	PO2, PO3, PO5, PO8
BP607P.3	3. utilize softwares to draw structures of chemical compounds, compute physicochemical properties and drug likeliness.	PO2, PO3, PO5, PO8

Course Code BP608P Pharmacology III – Practical



Co. No.	Course outcome	Mapped Programme Outcomes
BP608P.1	Upon completion of this course the student should be able to: 1. Observe the effect of drugs on animals by simulated experiments	PO1, PO3, PO6, PO7, PO8, PO9, PO11
BP608P.2	2. Understand the toxicity evaluation in preclinical studies	PO1, PO3, PO4, PO6, PO7, PO8, PO9, PO11
BP608P.3	3. Comprehend the Biostatistics methods in experimental pharmacology	PO1, PO3, PO4, PO6, PO7, PO9, PO11
BP608P.4	4. Appreciate correlation of pharmacology with related medical sciences.	PO1, PO3, PO4, PO6, PO7, PO8, PO9, PO11

Fourth Year /Semester VII

Course Code	Name of the course
BP701T	Instrumental Methods of Analysis – Theory
BP702T	Industrial PharmacyII – Theory
BP703T	Pharmacy Practice – Theory
BP704T	Novel Drug Delivery System – Theory
BP705P	Instrumental Methods of Analysis – Practical

Course Code BP701T Instrumental Methods of Analysis – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
	At the end of the course the learner should be able to	
BP701T.1	Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis	PO1, PO2, PO9
BP701T.2	Understand the chromatographic separation and analysis of drugs	PO1, PO2, PO4, PO9
BP701T.3	Make the use of theoretical knowledge in Quality Control testing.	PO1, PO2, PO4, PO9
BP701T.4	Classify the use of various analytical instruments in appropriate evaluation	PO1, PO2, PO9



Course Code BP702T Industrial Pharmacy-II – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the course, the student shall be able to:	
BP702T.1	1. Know the process of pilot plant and scale up of pharmaceutical dosage forms	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11
BP702T.2	2. Understand the process of technology transfer from lab scale to commercial batch	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11
BP702T.3	3. Know different Laws and Acts that regulate pharmaceutical industry	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11
BP702T.4	4. Understand the approval process and regulatory requirements for drug products	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11

Course Code BP703T Pharmacy Practice – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP703T.1	Course Code BP703T – Pharmacy Practice Upon completion of the course, the student shall be able to: 1. Know various drug distribution methods in a hospital	PO1, PO2, PO3, PO7, PO 9, PO11
BP703T.2	2. Appreciate the pharmacy stores management and inventory control	PO1, PO7, PO9, PO11
BP703T.3	3. Monitor drug therapy of patient through medication chart review and clinical review	PO1, PO7, PO9, PO11
BP703T.4	4. Obtain medication history interview and counsel the patients	PO1, PO2, PO3, PO7, PO 9, PO11
BP703T.5	5. Identify drug related problems	PO1, PO7, PO9, PO11
BP703T.6	6. Detect and assess adverse drug reactions	PO1, PO7, PO9, PO11,
BP703T.7	7. Interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states	PO1, PO2, PO3, PO7, PO 9, PO11
BP703T.8	8. Know pharmaceutical care services	PO1, PO7, PO9, PO11
BP703T.9	9. Do patient counselling in community pharmacy	PO1, PO2, PO3, PO7, PO 9, PO11



BP703T.10	10. Appreciate the concept of rational drug therapy	PO1, PO2, PO3, PO7, PO 9, PO11
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Course Code BP704T Novel Drug Delivery System – Theory

Co. No.	Course outcome	Mapped Programme Outcomes
BP704T.1	Upon completion of the course student shall be able to: 1. Understand various approaches for development of novel drug delivery systems.	PO1, PO7, PO9, PO11
BP704T.2	2. Understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation	PO1, PO7, PO9, PO11

Course Code BP705P Instrumental Methods of Analysis – Practical

Co. No.	Course outcome	Mapped Programme Outcomes
	At the end of the course the learner should be able to	
BP705P.1	Perform quantitative & qualitative analysis of drugs using various analytical instruments	PO1, PO2, PO3, PO4, PO5, PO9
BP705P.2	To estimate drugs by UV Spectroscopy, fluorescence, flame photometry	PO1, PO2, PO3, PO4, PO5, PO9
BP705P.3	To understand working of HPLC	PO1, PO2, PO3, PO4, PO5, PO9

Fourth Year /Semester VIII

Course code	Name of the course
BP801T	Biostatistics and Research Methodology
BP802T	Social and Preventive Pharmacy
BP803ET	Pharma Marketing Management
BP804ET	Pharmaceutical Regulatory Science
BP805ET	Pharmacovigilance
BP806ET	Quality Control and Standardization of Herbals
BP807ET	Computer Aided Drug Design
BP808ET	Cell and Molecular Biology
BP809ET	Cosmetic Science
BP810ET	Experimental Pharmacology
BP811ET	Advanced Instrumentation Techniques
BP812ET	Dietary Supplements and Nutraceuticals

Course Code BP801T Biostatistics and Research Methodology

Co. No.	Course outcome	Mapped Programme Outcomes
BP801T.1	Upon completion of the course, the learner will be able to: 1. Understand basic concepts of research and its applications	PO1, PO4, PO6, PO7
BP801T.2	2. Know various statistical techniques used to solve statistical problems	PO1, PO4, PO6, PO7
BP801T.3	3. Apply the statistical methods in research	PO1, PO4, PO6, PO7

Course Code BP803ET Pharma Marketing Management

Co. No.	Course outcome	Mapped Programme Outcomes
BP803ET.1	The course aims to provide an understanding of marketing concepts and techniques and their applications in the pharmaceutical industry.	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO10

Course Code BP804ET Pharmaceutical Regulatory Science

Co. No.	Course outcome	Mapped Programme Outcomes
	Upon completion of the Co. No. student shall be able to:	



BP804ET.1	1. Know about the process of drug discovery and development	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11
BP804ET.2	2. Know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11
BP804ET.3	3. Know the regulatory approval process and their registration in Indian and international markets	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11

Course Code BP805ET Pharmacovigilance

Co. No.	Course outcome	Mapped Programme Outcomes
BP805ET.1	Upon completion of this course the student should be able to: 1.learn about history and development of pharmacovigilance and basic terminologies used in pharmacovigilance	PO1,PO6,PO9,PO11
BP805ET.2	2. Learn various methods that can be used to generate safety data and signal detection	PO1,PO3,PO4,PO9,PO11
BP805ET.3	3. Understand the process for establishment of pharmacovigilance programme in an organization,	PO1,PO3,PO4,PO9,PO11
BP805ET.4	4. Develops the skills of classifying drugs, diseases and adverse drug reactions.	PO1,PO6,PO9,PO11

Course Code BP806ET Quality Control and Standardization of Herbals

Co. No.	Course outcome	Mapped Programme Outcomes
BP806ET.1	Upon completion of the course, the learner will be able to 1. Understand WHO guidelines for quality control of herbal drugs & Quality assurance in herbal drug industry	PO1,PO4,PO7,PO10,PO11
BP806ET.2	2.Know the regulatory approval process and their registration in Indian and international markets	PO1,PO4,PO7,PO10,PO11
BP806ET.3	3. Enlist EU and ICH guidelines for quality control of herbal drug.	PO1,PO4,PO7,PO10,PO11

Course Code BP807ET Computer Aided Drug Design



Co. No.	Course outcome	Mapped Programme Outcomes
BP807ET.1	Upon completion of the course, the learner will be able to: 1. Understand the basic concepts of design and discovery of lead molecules	PO1, PO4, PO6, PO7
BP807ET.2	2. Know the role of drug design in drug discovery	PO1, PO4, PO6, PO7
BP807ET.3	3. Understand the concept of QSAR and docking and its role on drug design	PO1, PO4, PO6, PO7
BP807ET.4	4. Apply the concepts of molecular modelling in design of new drug molecules using molecular modelling software	PO1, PO4, PO6, PO7

Course Code BP808ET Cell and Molecular Biology

Co. No.	Course outcome	Mapped Programme Outcomes
BP808ET.1	Upon completion of this course the student should be able to: 1. Learn the Definitions, theory, basics and Applications of cell and molecular biology.	PO1,PO6,PO9,PO11
BP808ET.2	2. Describe the chemical foundations of cell; cellular membrane structure and function	PO1,PO4,PO10,PO11
BP808ET.3	3. Describe the protein structure and function; and basic molecular genetic mechanisms.	PO1,PO4,PO7,PO10,PO11
BP808ET.4	4. Summarize cellular composition and functioning; and the Cell Cycle.	PO1,PO9,PO11
BP808ET.5	5. Summarize cell and molecular biology history; and the DNA properties of cell biology	PO1,PO9,PO11

Course Code BP809ET Cosmetic Science

Co. No.	Course outcome	Mapped Programme Outcomes
BP809ET.1	Upon completion of this course the student should be able to: 1. Study on various cosmetic ingredients.	PO1, PO2, PO3, PO7, PO 9, PO11
BP809ET.2	2. Analysis of individual cosmetic products and	PO1, PO2, PO3, PO7, PO 9, PO11



BP809ET.3	3. stability studies and toxicological studies of cosmetic products.	PO1, PO7, PO9, PO11
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Course Code BP810ET Experimental Pharmacology/ Pharmacological Screening Method

Co. No.	Course outcome	Mapped Programme Outcomes
BP810ET.1	Upon completion of this course the student should be able to: 1. Understand the applications of various commonly used laboratory animals.	PO1,PO6,PO9,PO10,PO11
BP810ET.2	2. Understand and demonstrate the various screening methods used in preclinical research	PO1,PO3,PO6, PO10,PO11
BP810ET.3	3. Understand and demonstrate the importance of biostatistics and research methodology	PO1,PO3,PO6, PO10,PO11
BP810ET.4	4. Design and execute a research hypothesis independently	PO1,PO6,PO10,PO11

Course Code BP811ET Advanced Instrumentation Techniques

Co. No.	Course outcome	Mapped Programme Outcomes
	At the end of the course the learner should be able to	
BP811ET.1	Understand the advanced instruments used and its applications in drug analysis	PO1,PO2,PO4,PO9
BP811ET.2	Understand the chromatographic separation and analysis of drugs	PO1,PO2,PO4,PO9
BP811ET.3	Understand the calibration of various analytical instruments	PO1,PO2,PO4,PO9
BP811ET.4	know analysis of drugs using various analytical instruments	PO1,PO2,PO4,PO9

Course Code BP812ET Dietary Supplements and Nutraceuticals

Co. No.	Course outcome	Mapped Programme Outcomes
BP812ET.1	Upon completion of the Co. No. student shall be able to; 1. Understand the need of supplements by the different group of people to maintain healthy life.	PO-1, PO-2, PO-3, PO-5, PO-8, PO-9



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BP812ET.2	2. Understand the outcome of deficiencies in dietary supplements.	PO-1,PO-3, PO-4, PO-9
BP812ET.3	3. Appreciate the components in dietary supplements and the application.	PO-1, PO- 2, PO-3, PO-4, PO-9
BP812ET.4	4. Appreciate the regulatory and commercial aspects of dietary supplements including health claims.	PO-1, PO- 5, PO-6, PO-7, PO-8, PO-9