R. L. TAWDE FOUNDATION'S
SAROJINI COLLEGE OF PHARMACY
R. S. No. 576, Near Rajendranagar Water Tank, Rajendranagar, Kolhapur. – 416004
E - mail – sarojini.instituteofpharmacy@gmail.com Website : www.sarojinicollegeofpharmacy.com

INSTITUTIONAL COURSE OUTCOMES

R. L. TAWDE FOUNDATION'S
SAROJINI COLLEGE OF PHARMACY
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Our Vision

To be recognized among the best institutes in India for excellence in Pharmacy education.

Our Mission

To impart value based Pharmacy Education and nurture research activities by inculcating personal touch and mutual respect amongst the stakeholders.

Program Educational Objectives

1. To achieve excellence in academic, administrative and personality development fronts through our teaching learning process.
2. To achieve a status of premier pharmacy institute.
3. To develop research and development and consultancy cell.
4. To strengthen industry-institute interaction to provide industrial exposure to the students and up- gradation of faculty knowledge about advance trends.

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PROGRAM OUTCOMES (POs)

1. **Pharmacy Knowledge:** An ability to acquire, demonstrate, core and basicknowledge of Pharmaceutical and Life Sciences.

2. **Planning Abilities:** An ability to develop, implement, effectively plan andorganize work using time management, resource management, delegation skills and organizational skills to achieve goals in specified timeline.

3. **Problem Analysis:** An ability to identify, analyze, interpret data and take appropriate decision to solve problems related to routine Pharmacy Practices by applying acquired knowledge.

4. **Modern Tool Usage:** An ability to understand, choose and utilize Moderntechniques and computing tools for Pharmacy practices by considering constraints.

5. **Leadership Skills:** An understanding of pharmaceutical management principles and apply these to one's own work, as a member and leader ina team, to manage projects to facilitate improvement in social health and well-being.

6. **Professional Identity:** Ability to recognize, analyze and communicate Pharmacy professional values as a healthcare promoter.

7. **Pharmaceutical Ethics:** Ability to understand and use professional, ethical, legal, social issues and responsibilities for well-being of the society.

8. **Communication:** An ability to comprehend, write reports, present and document to communicate effectively for exchange of professional information to Pharmacy community and society.

9. **The Pharmacist and Society:** An ability to overcome the societal, health and legal problems by providing better pharmaceutical care relevant to the Pharmacy profession.

10. **Environment and Sustainability**: An ability to recognize the impact of the professional Pharmaceutical solutions in social and environmental circumstances for sustainable development.

11. **Life-Long Learning:** An ability to recognize the need to engage in continuous Professional development by taking in consideration timely feedback and technological changes for lifelong learning process.

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The Program Outcomes are published and disseminated as follows

HOW TO PUBLISHED	WHERE TO PUBLISHED	HOW DISSEMINATED
Incorporated in presentation given in Orientation, Course files,Academic Book	Academic Book, Course Files, Laboratories in the Departments	Discussed during Orientation Discussed during student Counseling DistributedinCour se file, Practicalwork book
Flex	Class Rooms/Laboratories Department, Notice Boards,	Self-reading by Students, Parentsand Alumni
Digital Media	Institute Website: www.sarojinicollegeofpharmacy.com	Available for Self- reading in public domain

BLOOM'S TAXONOMY

Bloom's Taxonomy was created by Benjamin Bloom in 1956, published as a kind of classification of learning outcomes and objectives that have, in the more than half-century since, been used for everything from framing digital tasks and evaluating apps to writing questions and assessments.

The original sequence of cognitive skills was Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. The framework was revised in 2001 by Lorin Anderson and David Krathwohl, yielding the revised Bloom's Taxonomy. The most significant change was the removal of 'Synthesis' and the addition of 'Creation' as the highest-level of Bloom's Taxonomy. And being at the highest level, the implication is that it's the most complex or demanding cognitive skill–or at least represents a kind of pinnacle for cognitive tasks.

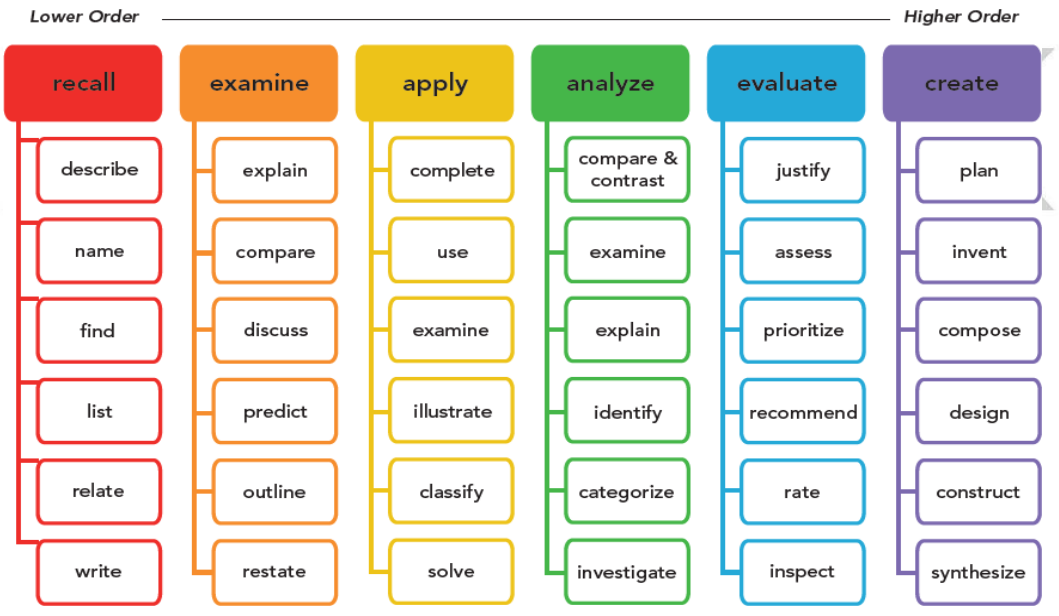

Fig. No. 1 Bloom's Taxonomy

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STATEMENT OF COURSE OUTCOME

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Odd Semester

BP101T Human Anatomy and Physiology I [Theory | regular]	
CO ID.	**Course Outcome**
BP101T CO1	Utilize appropriate medical terminology and normal physiological values related to the structure and function of the human body systems
BP101T CO2	Describe the structural characteristics and functional processes common to all human cells and tissues.
BP101TCO3	Integrate understanding of basic chemical concepts and principles into understanding the human anatomy and physiology
BP101T CO4	Describe the interrelationships of cells, tissues, and body organ systems, homeostasis and the complementarily of structure and functions.
BP101T CO5	Demonstrate an understanding of the location, structure and functioning of the major body systems studied.
BP102T Pharmaceutical Analysis I [Theory | regular]	
CO ID.	**Course Outcome**
BP102TCO1	Acquire a basic understanding of Analytical techniques used in pharmaceutical analysis.
BP102TCO2	Summarizing different theories in acid base titration and Non-aqueous titration.
BP102TCO3	Discuss adequate knowledge of the basic principles and techniques of titrations.
BP102TCO4	Define different terms and principles of Oxidation and reduction reactions
BP102TCO5	Understanding of the fundamentals and principles of electrochemical and volumetric analysis.
BP103T Pharmaceutics I [Theory | regular]	
CO ID.	**Course Outcome**
BP103TCO1	Describe history, pharmacopoeias, dosage forms, prescription handling and posology in Pharmacy.
BP103TCO2	Define & Dispense Powder & Liquid Dosage forms with various calculations.
BP103TCO3	Discuss and Produce Monophasic and Biphasic Dosage forms
BP103TCO4	Interpret Pharmaceutical Incompatibilities, Prepare and evaluate suppositories.
BP103TCO5	Summarise Semisolid Dosage forms
BP104T Pharmaceutical Inorganic Chemistry [Theory | regular]	
CO ID.	**Course Outcome**
BP104TCO1	Define pharmaceutical impurities & able to analyze various impurities.
BP104TCO2	State & explain importance of acids, bases, buffers & electrolytes in pharmaceutical preparations.
BP104TCO3	Describe dental & gastrointestinal agents in formulations
BP104TCO4	Discuss the pharmaceutical significance of different inorganic compounds with their methods of Preparation, chemical reactions and assays.
BP104TCO5	Explain the concepts and applications of radiopharmaceuticals.

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BP105T Communication Skills [Theory | regular]	
CO ID.	**Course Outcome**
BP105T CO1	Explain need of communication skills, barriers to communicate effectively.
BP105T CO2	Demonstrate perspectives of communication required to function effectively in areas of pharmaceutical operation
BP105T CO3	Apply various elements, styles of communications, Basic listening skills, writing skills to communicate effectively and manage team as team player
BP105T CO4	Apply Interview skills presentation skills and group discussion for development of leadership qualities and essentials
BP105T CO5	Apply basic communication skills and advance learning skills
BP107P Human Anatomy and Physiology I [Practical | regular]	
CO ID.	**Course Outcome**
BP107Pco1	Recognize and describe different types of tissues and bones.
BP107Pco2	Perform haematological experiments
BP107Pco3	Record human heart rate, pulse rate, blood pressure and respiratory volumes.
BP107PCO4	Record blood pressure, heart-rate, pulse rate
BP108P Pharmaceutical Analysis I [Practical | regular]	
CO ID.	**Course Outcome**
BP108PCO1	Get acquainted to basic apparatus and instruments along with their calibration procedures.
BP108PCO2	Carryout limit tests and various volumetric & electrochemical titrations.
BP108PCO3	Develop analytical skills in titrimetric & gravimetric analysis.
BP108PCO4	Determination of Normality by electro- analytical method
BP109P Pharmaceutics I [Practical | regular]	
CO ID.	**Course Outcome**
BP109PCO1	Explain formulation, evaluation and labeling of aromatic water, glycerides, syrups, elixirs and powder preparations.
BP109PCO2	Select various ingredients in different category of formulation.
BP109PCO3	Prepare various monophasic & Biphasic dosage form.
BP109PCO4	Prepare the labels in prescribed manner including all the component/parts.
BP110P Pharmaceutical Inorganic Chemistry [Practical | regular]	
CO ID.	**Course Outcome**
BP110PCO1	Develop skills to perform limit test for given sample with precision.
BP110PCO2	Identify inorganic salts through various qualitative tests.
BP110PCO3	Perform tests for purity for different inorganic compounds as per IP.
BP110PCO4	Prepare different inorganic salts like boric acid, potash alum and FeSO4.
BP111P Communication Skills [Practical | regular]	
CO ID.	**Course Outcome**
BP111P CO1	Communicate in oral and written communication.

BP111P CO2	Enhance Vocabulary, language, grammar and fluency
BP111P CO3	Develop the skills in preparing job search artifacts and negotiating their use in GDs and interviews
BP111P CO4	Make use of communication guidelines to prepare and deliver effective presentation.
BP101T Human Anatomy and Physiology I [Theory | regular]	
CO ID.	**Course Outcome**
BP101T CO1	Utilize appropriate medical terminology and normal physiological values related to the structure and function of the human body systems
BP101T CO2	Describe the structural characteristics and functional processes common to all human cells and tissues.
BP101T CO3	Integrate understanding of basic chemical concepts and principles into understanding the human anatomy and physiology.
BP101T CO4	Describe the interrelationships of cells, tissues, and body organ systems, homeostasis and the complementarily of structure and functions.
BP101T CO5	Demonstrate an understanding of the location, structure and functioning of the major body systems studied.
BP102T Pharmaceutical Analysis I [Theory | regular]	
CO ID.	**Course Outcome**
BP102TCO1	Acquire a basic understanding of Analytical techniques used in pharmaceutical analysis.
BP102TCO2	Summarizing different theories in acid base titration and Non-aqueous titration.
BP102TCO3	Discuss adequate knowledge of the basic principles and techniques of titrations
BP102TCO4	Define different terms and principles of Oxidation and reduction reactions
BP102TCO5	Understanding of the fundamentals and principles of electrochemical and volumetric analysis.
BP103T Pharmaceutics I [Theory | regular]	
CO ID.	**Course Outcome**
BP103TCO1	Describe history, pharmacopoeias, dosage forms, prescription handling and posology in Pharmacy.
BP103TCO2	Define & Dispense Powder & Liquid Dosage forms with various calculations.
BP103TCO3	Discuss and Produce Monophasic and Biphasic Dosage forms
BP103TCO4	Interpret Pharmaceutical Incompatibilities, Prepare and evaluate suppositories.
BP103TCO5	Summarise Semisolid Dosage forms
BP104T Pharmaceutical Inorganic Chemistry [Theory | regular]	
CO ID.	**Course Outcome**
BP104TCO1	Define pharmaceutical impurities & able to analyse various impurities.
BP104TCO2	State & explain importance of acids, bases, buffers & electrolytes in pharmaceutical preparations.
BP104TCO3	Describe dental & gastrointestinal agents in formulations

BP104TCO4	Discuss the pharmaceutical significance of different inorganic compounds with their methods of Preparation, chemical reactions and assays.
BP104TCO5	Explain the concepts and applications of radiopharmaceuticals.
BP105T Communication Skills [Theory | regular]	
CO ID.	**Course Outcome**
BP105T CO1	Explain need of communication skills, barriers to communicate effectively.
BP105T CO2	Demonstrate perspectives of communication required to function effectively in areas of pharmaceutical operation
BP105T CO3	Apply various elements, styles of communications, Basic listening skills, writing skills to communicate effectively and manage team as team player
BP105T CO4	Apply Interview skills presentation skills and group discussion for development of leadership qualities and essentials
BP105T CO5	Apply basic communication skills and advance learning skills
BP107P Human Anatomy and Physiology I [Practical | regular]	
CO ID.	**Course Outcome**
BP107PCO1	Demonstrate use of microscope in study of various human tissues
BP107PCO2	Identify different human bones
BP107PCO3	Perform the haematological tests in human subjects and interpret the results
BP107PCO4	Record blood pressure, heartrate, pulse rate
BP108P Pharmaceutical Analysis I [Practical | regular]	
CO ID.	**Course Outcome**
BP108PCO1	Get acquainted to basic apparatus and instruments along with their calibration procedures.
BP108PCO2	Carryout limit tests and various volumetric & electrochemical titrations
BP108PCO3	Develop analytical skills in titrimetric & gravimetric analysis
BP108PCO4	Determination of Normality by electro- analytical method
BP109P Pharmaceutics I [Practical | regular]	
CO ID.	**Course Outcome**
BP109PCO1	Explain formulation, evaluation and labeling of aromatic water, glycerides, syrups, elixirs and powder preparations.
BP109PCO3	Prepare various monophasic & Biphasic dosage form.
CO3	Prepare various monophasic preparations depending upon their formulation.
BP109PCO4	Prepare the labels in prescribed manner including all the component/parts.

BP110P Pharmaceutical Inorganic Chemistry [Practical | regular]	
CO ID.	**Course Outcome**
BP110PCO1	Develop skills to perform limit test for given sample with precision.
BP110PCO2	Identify inorganic salts through various qualitative tests
BP110PCO3	Perform tests for purity for different inorganic compounds as per IP.
BP110PCO4	Prepare different inorganic salts like boric acid, potash alum and FeSO4.
BP111P Communication Skills [Practical | regular]	
CO ID.	**Course Outcome**
BP111P CO1	Communicate in oral and written communication.
BP111P CO2	Enhance Vocabulary, language, grammar and fluency
BP111P CO3	Develop the skills in preparing job search artifacts and negotiating their use in GDs and interviews
BP111P CO4	Make use of communication guidelines to prepare and deliver effective presentation.
BP 308P Pharmaceutical Engineering [Practical | regular]	
CO ID.	**Course Outcome**
BP308P CO1	Demonstrate the handling of various equipment used in pharmaceutical industry
BP308P CO2	Perform, evaluate, interprete the size reduction, size separation, drying process, filtration and its significance in manufacturing process.
BP308P CO3	Evaluate various methods of mixing process and assessing efficacy of mixing techniques.
BP308P CO4	Implement and incorporate various methods of preparation of crystals and compare their size and yield.
BP301T Pharmaceutical Organic Chemistry II [Theory | regular]	
CO ID.	**Course Outcome**
BP301T CO1	Analyse resonating structures in Benzene and explain reactivity & orientation of Benzene towards electrophilic substitution reactions.
BP301T CO2	Predict the effect of substituents on chemical nature of aromatic amines, aromatic acids and phenols along with their methods of preparation.
BP301T CO3	Determine analytical constants of fats & oils.
BP301T CO4	Explain the chemistry, synthesis and reactivity of Polynuclear hydrocarbons.
BP301T CO5	Illustrate stability theories & reactions of cyclopropane and cyclobutane.

BP303T Pharmaceutical Microbiology [Theory | regular]	
CO ID.	**Course Outcome**
BP303TCO1	Compile the basic knowledge about contributions of various scientists in the field of microbiology; and the detailed information regarding bacteria morphology and cultivation and different types of microscopes
BP303TCO2	Explain the identification techniques of bacteria and merits and demerits of various sterilization techniques
BP303TCO3	Explain the morphology and cultivation of virus and fungi and describe different types of disinfectants used in the pharmaceutical industry and their evaluation techniques and sterility testing as per various pharmacopoeia
BP303TCO4	Describe the aseptic techniques, microbiological assay of antibiotics, vitamins and amino acids
BP303TCO5	Explain the factors affecting microbiological spoilage in pharmaceutical products and evaluation of preservatives and details of cell culture techniques and their application in pharmaceuticals
BP304T Pharmaceutical engineering [Theory | regular]	
CO ID.	**Course Outcome**
BP304T CO1	Explain various unit operations & the material handling techniques used in pharmaceutical industries.
BP304T CO2	Perform various processes involved in pharmaceutical manufacturing process.
BP304T CO3	Design plant lay out for optimum use of resources.
BP304T CO4	Apply the various preventive methods to prevent environmental pollution.
BP304T CO5	AppreciatethevariouspreventivemethodsusedforcorrosioncontrolinPharmaceuticalindustries.
BP305P Pharmaceutical Organic Chemistry-II [Practical | regular]	
CO ID.	**Course Outcome**
BP305P CO1	Purify synthesized organic compounds by recrystallization methods.
BP305P CO2	Determine analytical constants of fats & oils.
BP305P CO3	Synthesize organic compounds & its derivatives.
BP305P CO4	Understand the reactions & mechanism of synthesized organic compounds.
BP306P Physical pharmaceutics I [Practical | regular]	
CO ID.	**Course Outcome**
BP306P.1 CO1	Evaluate solubilityof drug and pKa value of the drugs.
BP306P.2 CO2	Determine Partitionco-efficientand evaluate their quality control parameters.
BP306P.3 CO3	Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.

BP306P.4 CO4	Determine the complexation by different methods.
BP307P Pharmaceutical Microbiology [Practical | regular]	
CO ID.	**Course Outcome**
BP307PCO1	Handle various instruments involved in sterilization
BP307PCO2	Perform identification, isolation and sub-culturing of different bacteria
BP307PCO3	Perform microbiological assays and biochemical tests
BP307PCO4	Understand the cell culture technology and its applications in pharmaceutical industries.
BP403T Physical Pharmaceutics I [Theory | regular]	
CO ID.	**Course Outcome**
BP302TC01	Express solubility phenomena of drug molecules in designing the dosage forms
BP302TCO2	Define States of Matter and various physicochemical properties of drug molecules.
BP302TCO3	Explain the role of surface and interfacial Phenomenon in formulation of dosage forms.
BP302TCO4	Define the principles of Complexation and protein binding in drug action.
BP302TCO5	Explain the concept of pH buffer of solutions in Pharmaceutical and biological Systems.
BP301T Pharmaceutical Organic Chemistry II [Theory | regular]	
CO ID.	**Course Outcome**
BP301T CO1	Analyse resonating structures in Benzene and explain reactivity & orientation of Benzene towards electrophilic substitution reactions.
BP301T CO2	Predict the effect of substituents on chemical nature of aromatic amines, aromatic acids and phenols along with their methods of preparation.
BP301T CO3	Determine analytical constants of fats & oils.
BP301T CO4	Explain the chemistry, synthesis and reactivity of Polynuclear hydrocarbons.
BP301T CO5	Illustrate stability theories & reactions of cyclopropane and cyclobutane.
BP303T Pharmaceutical Microbiology [Theory | regular]	
CO ID.	**Course Outcome**
BP303TCO1	Compile the basic knowledge about contributions of various scientists in the field of microbiology; and the detailed information regarding bacteria morphology and cultivation and different types of microscopes
BP303TCO2	Explain the identification techniques of bacteria and merits and demerits of various sterilization techniques

BP303TCO3	Explain the morphology and cultivation of virus and fungi and describe different types of disinfectants used in the pharmaceutical industry and their evaluation techniques and sterility testing as per various pharmacopoeia
BP303TCO4	Describe the aseptic techniques, microbiological assay of antibiotics, vitamins and amino acids
BP303TCO5	Explain the factors affecting microbiological spoilage in pharmaceutical products and evaluation of preservatives and details of cell culture techniques and their application in pharmaceuticals
BP304T Pharmaceutical engineering [Theory | regular]	
CO ID.	**Course Outcome**
BP304T CO1	Explain various unit operations & the material handling techniques used in pharmaceutical industries.
BP304T CO2	Perform various processes involved in pharmaceutical manufacturing process.
BP304T CO3	Design plant lay out for optimum use of resources.
BP304T CO4	Apply the various preventive methods to prevent environmental pollution.
BP304T CO5	Appreciate the various preventive methods used for corrosion control in Pharmaceutical industries.
BP305P Pharmaceutical Organic Chemistry-II [Practical | regular]	
CO ID.	**Course Outcome**
BP305P CO1	Purify synthesized organic compounds by recrystallization methods.
BP305P CO2	Determine analytical constants of fats & oils.
BP305P CO3	Synthesize organic compounds & its derivatives.
BP305P CO4	Understand the reactions & mechanism of synthesized organic compounds.
BP306P Physical Pharmaceutics I [Theory | regular]	
CO ID.	**Course Outcome**
BP302T.1 CO1	Express solubility phenomena of drug molecules in designing the dosage forms.
BP302T.2 CO2	Define States of Matter and various physicochemical properties of drug molecules.
BP302T.3 CO3	Explain the role of surface and interfacial Phenomenon in formulation of dosage forms
BP302T.4 CO4	Define theprinciplesofComplexationandproteinbinding in drug action.
BP302T.5 CO5	Explain the concept of pH buffer of solutions in Pharmaceutical and biological Systems

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BP306P Physical pharmaceutics I [Practical | regular]	
CO ID.	**Course Outcome**
BP306PCO1	Evaluate solubility of drug and pKa value of the drugs.
BP306PCO2	Determine Partitionco-efficientand evaluate their quality control parameters.
BP306PCO3	Evaluate surfacetension and HLBnumberofsurfactant properties.
BP306PCO4	Determine the complexation by different methods.
BP307P Pharmaceutical Microbiology [Practical | regular]	
CO ID.	**Course Outcome**
BP307PCO1	Handle various instruments involved in sterilization
BP307PCO2	Perform identification, isolation and sub-culturing of different bacteria
BP307PCO3	Perform microbiological assays and biochemical tests
BP307PCO4	Carried out microbiological standardization of Pharmaceuticals.
BP308P Pharmaceutical Engineering [Practical | regular]	
CO ID.	**Course Outcome**
BP308PCO1	Demonstrate the handling of various equipment used in pharmaceutical industry
BP308PCO2	Perform, evaluate, interpret the size reduction, size separation, drying process, filtration and its significance in manufacturing process.
BP308PCO3	Evaluate various methods of mixing process and assessing efficacy of mixing techniques.
BP308PCO4	Implement and incorporate various methods of preparation of crystals and compare their size and yield.
BP 508 P Pharmacognosy and Phytochemistry II [Practical | regular]	
CO ID.	**Course Outcome**
BP508T.1	Examine raw materials using physical and chemical methods of analysis.
BP508T.2	Demonstrate methods for isolation and detection of phytoconstituents
BP508T.3	Compare phytoconstituents by using simple chromatographic techniques
BP508T.4	Analyze herbal drug using Fingerprint method of analysis
BP501T Medicinal Chemistry II [Theory | regular]	
CO ID.	**Course Outcome**
BP501TCO1	Explain detail chemistry of antihistamine and antineoplastic agents.
BP501TCO2	Evaluate chemistry of anti-anginal and anti-hypertensive agents

BP501TCO3	Define all basic involved in anti-arrhythmic, anticoagulant, anti-hyperlipidemic agents and drugs used in congestive heart failure
BP501TCO4	Elaborate the various drugs acting on endocrine system and thyroid gland
BP501TCO5	To study various antidiabetic agents and local anesthetics
BP502T Industrial Pharmacy -I [Theory | regular]	
CO ID.	**Course Outcome**
BP502T01	Describe preformulation considerations and BCS Classification of Drug
BP502T02	Explain formulation consideration and evaluation of tablets and liquid orals
BP502T03	Describe formulation consideration and evaluation of capsules and pellets
BP502T04	Explain formulation consideration and evaluation of sterile dosage forms
BP502T05	Design and evaluate package material for pharmaceutical dosage forms
BP503T Pharmacology II [Theory | regular]	
CO ID.	**Course Outcome**
BP503T.CO1	Explain the mechanism of drug action at the organ system, subcellular, and macromolecular level
BP503T.CO2	Understand the pharmacological actions and rational use of therapeutic agents.
BP503T.CO3	Clinical exploration of the pharmacological implications of autacoids, cardiovascular, and hormonal therapeutic agents in
BP503T.CO4	Capable of implementing ethical strategies for the safer use of autacoids, cardiovascular, and hormonal therapeutic agents
BP503T.CO5	Gain fundamental understanding of drug bioassays applicable in the process of discovering and developing new drugs.
BP504T Pharmacognosy and PhytoChemistry II [Theory | regular]	
CO ID.	**Course Outcome**
BP504TCO1	Explain basic biosynthetic pathways, Plant metabolism and pharmacognosy involved in secondary metabolites
BP504TCO2	Understand and demonstrate Isolation, Identification and Analysis of secondary metabolites
BP504TCO3	Apply the knowledge of isolated, identified plant constituents for its medicinal value.
BP504TCO4	Explain industrial production, estimation, and utilization of therapeutically useful phytoconstituents.
BP504TCO5	Explain and demonstrate extraction methods and analysis by using modern instruments.

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BP505T Pharmaceutical Jurisprudence [Theory | regular]	
CO ID.	**Course Outcome**
BP505T CO1	Explain the objectives and regulations for import and manufacture of drugs in accordance with Drugs and Cosmetics Act, 1940 and its rules.
BP505T CO2	Describe schedules, regulations for sale of drugs, requirements for labelling and packaging in agreement with Drugs and Cosmetics Act, 1940.
BP505T CO3	Summarize the objectives and regulations of Pharmacy Act 1948, Medicinal and Toilet Preparation Act 1955 and Narcotic Drugs and Psychotropic Substances Act-1985.
BP505T CO4	Describe salient features of Drugs and Magic Remedies Act and its rules, objectives, and guidelines of Prevention of Cruelty to animals Act1960 and National Pharmaceutical Pricing Authority.
BP505T CO5	Implement the knowledge of Pharmaceutical Legislations, Code of Pharmaceutical Ethics, Medical Termination of Pregnancy Act, Right to Information Act and Intellectual Property Rights.
BP506 P Industrial Pharmacy-I [Practical | regular]	
CO ID.	**Course Outcome**
BP506P01	Design and evaluate tablets, coated tablets and liquid orals
BP506P02	Formulate and evaluate , capsules and pellets
BP506P03	Formulate and evaluate sterile dosage form
BP506P04	Design and evaluate packaging material for pharmaceutical dosage forms
BP507P Pharmacolgy II [Practical | regular]	
CO ID.	**Course Outcome**
BP507P.CO1	To understand the basic knowledge about pharmacological experiments.
BP507P.CO2	To analyze the responses of various drugs by In Vitro methods.
BP507P.CO3	To identify the drug by understanding pharmacological responses of various animals
BP507P.CO4	Correlate the theoretical knowledge to the practical by using softwares
BP501T Medicinal Chemistry II [Theory | regular]	
CO ID.	**Course Outcome**
BP501TCO1	Explain detail chemistry of antihistamine and antineoplastic agents
BP501TCO2	Evaluate chemistry of anti-anginal and anti-hypertensive agents
BP501TCO3	Define all basic involved in anti-arrhythmic, anticoagulant, anti-hyperlipidemic agents and drugs used in congestive heart failure
BP501TCO4	Elaborate the various drugs acting on endocrine system and thyroid gland
BP501TCO5	To study various antidiabetic agents and local anaesthetics

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BP502T Industrial Pharmacy -I [Theory | regular]	
CO ID.	**Course Outcome**
BP502T01	Describe Preformulation consideration and BCS classes of drug
BP502T02	Explain formulation consideration and evaluation of tablets and liquid orals
BP502T03	Discuss formulation consideration and evaluation of capsules and pellets.
BP502T04	Explain formulation consideration and evaluation of sterile dosage forms
BP502T05	Design and evaluate packaging material for Pharmaceutical dosage forms
BP503T Pharmacology II [Theory | regular]	
CO ID.	**Course Outcome**
BP503TCO1	Explain the mechanism of drug action at the organ system, subcellular, and macromolecular levels
BP503TCO2	Understand the pharmacological actions and rational use of autacoids, cardiovascular, and hormonal therapeutic agents.
BP503TCO3	Clinical exploration of the pharmacological implications in various diseases
BP503TCO4	Capable of implementing ethical strategies for the safer use of various drugs
BP503TCO5	Gain fundamental understanding of drug bioassays applicable in the process of discovering and developing new drugs
BP504T Pharmacognosy and PhytoChemistry II [Theory | regular]	
CO ID.	**Course Outcome**
BP504TCO1	Explain basic biosynthetic pathways, Plant metabolism and pharmacognosy involved in secondary metabolites.
BP504TCO2	Understand anddemonstrate Isolation, Identification and Analysis of secondary metabolites.
BP504TCO3	Apply the knowledge of isolated, identified plant constituents for its medicinal value.
BP504TCO4	Explain industrial production, estimation, and utilization of therapeutically useful phytoconstituents.
BP504TCO5	Explain and demonstrate extraction methods and analysis by using modern instruments.
BP505T Pharmaceutical Jurisprudence [Theory | regular]	
CO ID.	**Course Outcome**
BP505T CO1	Explain the objectives and regulations for import and manufacture of drugs in accordance with Drugs and Cosmetics Act, 1940 and its rules.

BP505T CO2	Describe schedules, regulations for sale of drugs, requirements for labelling and packaging in agreement with Drugs and Cosmetics Act, 1940.
BP505T CO3	Summarize the objectives and regulations of Pharmacy Act 1948, Medicinal and Toilet Preparation Act 1955 and Narcotic Drugs and Psychotropic Substances Act-1985.
BP505T CO4	Describe salient features of Drugs and Magic Remedies Act and its rules, objectives, and guidelines of Prevention of Cruelty to animals Act1960 and National Pharmaceutical Pricing Authority.
BP505T CO5	Implement the knowledge of Pharmaceutical Legislations, Code of Pharmaceutical Ethics, Medical Termination of Pregnancy Act, Right to Information Act and Intellectual Property Rights.
BP506P Industrial Pharmacy-I [Practical | regular]	
CO ID.	**Course Outcome**
BP506P01	Design and evaluate tablets, coated tablets and liquid orals
BP506P02	Formulate and evaluate Capsules and pellets
BP506P03	Formulate and evaluate sterile dosage form
BP506P04	Design and evaluate packaging material for pharmaceutical dosage forms
CO5	study the preformulation, goals and objectives
BP507P Pharmacolgy II [Practical | regular]	
CO ID.	**Course Outcome**
BP507P.CO1	To understand the basic knowledge about pharmacological experiments.
BP507P.CO2	To analyze the responses of various drugs by In Vitro methods.
BP507P.CO3	To identify the drug by understanding pharmacological responses of various animals
BP507P.CO4	Correlate the theoretical knowledge to the practical by using softwares
BP508P Pharmacognosy and Phytochemistry II [Practical | regular]	
CO ID.	**Course Outcome**
BP508T.1	Examine raw materials using physical and chemical methods of analysis
BP508T.2	Demonstrate methods for isolation and detection of phytoconstituents
BP508T.3	Compare phytoconstituents by using simple chromatographic techniques
BP508T.4	Analyze herbal drug using Fingerprint method of analysis

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BP 702 T Industrial Pharmacy-II [Theory | regular]	
CO ID.	**Course Outcome**
BP702TCO1	Define fundamental knowledge on pharmaceutical product and translation from laboratory practice
BP702TCO2	Understand the process of pilot plant and scale up of pharmaceutical dosage forms.
BP702TCO3	Explain the process of technology transfer from lab scale to commercial batch
BP702TCO4	Know different laws and acts that regulate pharmaceutical industry
BP702TCO5	Impart the approval process and regulatory requirements for drug products.
BP 703T Pharmacy Practice [Theory | regular]	
CO ID.	**Course Outcome**
BP703T CO1	To comprehend the organizational frameworks and operational roles of hospitals, hospital pharmacies, and community pharmacies, as well as the procedures for evaluating, handling, and reporting adverse drug reactions (ADRs) to regulatory bodies, encompasses several fundamental components.
BP703T CO2	Knowing hospital formularies and various drug distribution methodologies, along with gathering medication history, interviewing patients, keeping track of patients drug regimens through medication illustrations, and conducting clinical reviews are all essential aspects.
BP703T CO3	Gain expertise in patient counselling, participate part in hospital-based pharmacy training and education programs, and learn about the Pharmacy and Therapeutics Committee and its function in delivering medication information services.
BP703T CO4	Gain knowledge regarding clinical pharmacy concepts, budgeting, and the responsible use of common over-the-counter drugs.
BP703T C05	Figure out how to manage a pharmacy, covering inventory control as well as to assess clinical laboratory results in relation to therapeutic drug monitoring.
BP701T Instrumental Methods of Analysis [Theory | regular]	
CO ID.	**Course Outcome**
BP701T CO1	To impart a fundamental knowledge on the principles and instrumentation of UV & IR spectroscopy.
BP701T CO2	Understand the interaction of matter with electromagnetic radiations andits applications in drug analysis.
BP701T CO3	Explain both theoretical and practical understanding of contemporary spectroscopic and chromatographic instruments utilized in drug testing.
BP701T CO4	Classify both quantitative and qualitative drug analysis utilizing a variety of spectroscopic techniques
BP701T CO5	Implementation of experimental design approach in solving the pharmaceutical examples
BP704T Novel Drug Delivery System [Theory | regular]	
CO ID.	**Course Outcome**
BP704TCO 1	Discuss and explain the concept of controlled drug delivery systems, design controlled release formulations based on different principles, evaluate the physicochemical and biological properties of drugs.

BP704TCO 2	Define, classify and discuss polymer-based drug delivery systems, explain polymers in formulation.
BP704TCO3	Define, explain and discuss microencapsulation techniques and methods.
BP704TCO4	Discuss and describe different novel drug delivery systems (Mucosal, Implantable, Transdermal, Gastroretentive, Nasopulmonary, Ocular, and Intrauterine).
BP704TCO5	Describe the concepts, approaches and their applications in different targeted drug delivery strategies (Liposomes, Niosomes, Nanoparticles, Monoclonal and Antibodies).
BP705P Instrumental methods of Analysis [Practical | regular]	
CO ID.	**Course Outcome**
BP701T CO1	Understand the interaction of matter with electromagnetic radiations and its applications in analysis.
BP701T CO3	Understand the chromatographic separation in analysis of drugs.
BP701T CO4	Perform quantitative & qualitative analysis of drugs using various analytical instruments like UV...
BP701P CO4	Explain instrumentation of HPLC, GC & ion-exchange chromatography
BP706PS Practice School [Theory | regular]	
CO ID.	**Course Outcome**
BP706 PS.1	Implement knowledge in a practical setting or realistic way solving.
BP706 PS.2	Permit students to apply and redefine the skills they possess
BP706 PS.3	Distinguish between conventional classroom learning and gaining valuable real-life experience in an industry or research organization.
BP706 PS.4	Enhances interpersonal skills, communication skills, leadership qualities etc.
BP706 PS.5	Enables students to have a smoother transition from academics to professional world.
BP 702 T Industrial Pharmacy-II [Theory | regular]	
CO ID.	**Course Outcome**
BP702TCO1	Define fundamentals knowledge on pharmaceutical product development and translation from laboratory market.
BP702TCO2	Understand the process of pilot plant and scale up of pharmaceutical dosage forms.
BP702TCO3	Explain the process of technology transfer from lab scale to commercial batch
BP702TCO4	Know different laws and acts that regulate pharmaceutical industry
BP702TCO5	Impart the approval process and regulatory requirements for drug products.

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BP 703T Pharmacy Practice [Theory | regular]	
CO ID.	**Course Outcome**
BP703T CO1	To comprehend the organizational frameworks and operational roles of hospitals, hospital pharmacies, and community pharmacies, as well as the procedures for evaluating, handling, and reporting adverse drug reactions (ADRs) to regulatory bodies, encompasses several fundamental components.
BP703T CO2	Knowing hospital formularies and various drug distribution methodologies, along with gathering medication history, interviewing patients, keeping track of patients drug regimens through medication illustrations, and conducting clinical reviews are all essential aspects.
BP703T CO3	Gain expertise in patient counselling, participate part in hospital-based pharmacy training and education programs, and learn about the Pharmacy and Therapeutics Committee and its function in delivering medication information services.
BP703T CO4	Gain knowledge regarding clinical pharmacy concepts, budgeting, and the responsible use of common over-the-counter drugs.
BP703T C05	Figure out how to manage a pharmacy, covering inventory control as well as to assess clinical laboratory results in relation to therapeutic drug monitoring.
BP701T Instrumental Methods of Analysis [Theory | regular]	
CO ID.	**Course Outcome**
BP701T CO1	Understand the interaction of matter with electromagnetic radiations and applications in drug analysis.
BP701T CO2	Understand the interaction of matter with electromagnetic radiations andits applications in drug analysis.
BP701T CO3	Explain both theoretical and practical understanding of contemporary spectroscopic and chromatographic instruments utilized in drug testing.
BP701T CO4	Comprehend the knowledge of regression studies using Excel, SPSS, design of experiments tools and software's
BP701T CO5	Implementation of experimental design approach in solving the pharmaceutical examples
BP704T Novel Drug Delivery System [Theory | regular]	
CO ID.	**Course Outcome**
BP704TCO1	Discuss and explain the concept of controlled drug delivery systems, design controlled release formulations based on different principles, evaluate the physicochemical and biological properties of drugs.
BP704TCO2	Define, classify and discuss polymer-based drug delivery systems, explain polymers in formulation.
BP704TCO3	Define, explain and discuss microencapsulation techniques and methods
BP704TCO4	Discuss and describe different novel drug delivery systems (Mucosal, Implantable, Transdermal, Gastroretentive, Nasopulmonary, Ocular, and Intrauterine).
BP704TCO5	Describe the concepts, approaches and their applications in different targeted drug delivery strategies (Liposomes, Niosomes, Nanoparticles, Monoclonal and Antibodies).

BP705P Instrumental methods of Analysis [Practical | regular]	
CO ID.	**Course Outcome**
BP705P CO1	Understand the interaction of matter with electromagnetic radiations and its application in drug analysis.
BP705P CO2	Understand the chromatographic separation and analysis of drugs in various chromatographic separations.
BP705P CO3	Perform quantitative & qualitative analysis of drugs using various analytical instruments like UV spectrophotometer,Colorimeter etc.
BP705P CO4	Understand instruments used in pharmaceutical industry
BP706PS Practice School [Theory | regular]	
CO ID.	**Course Outcome**
BP706 PS.1	Implement knowledge in a practical setting or realistic way solving.
BP706 PS.2	Permit students to apply and redefine the skills they possess
BP706 PS.3	Distinguish between conventional classroom learning and gaining valuable real-life experience in an industry or research organization.
BP706 PS.4	Enhances interpersonal skills, communication skills, leadership qualities etc.
BP706 PS.5	Enables students to have a smoother transition from academics to professional world.

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Even Semester

Sem-II	
BP 204T Pathophysiology [Theory | regular]	
CO ID.	**Course Outcome**
BP 204T CO1	student will be able to understand etiology & pathogenesis of disease
BP 204TCO 2	Student will be able to identify signs & symptoms of disease
BP 204T CO3	student will be able to understand complications of the disease
BP 204T CO4	students will be able to know pathogenesis of disease
BP 204T CO5	student will be able to find out causes of disease
BP 206 T Environmental Science [Theory | regular]	
CO ID.	**Course Outcome**
BP 206 T CO1	Explain Multidisciplinary nature of environmental studies, Natural Resources, Renewable and non-renewable resources and associated problems.
BP 206 T CO2	Relate the connecting link between the different ecosystems and individual
BP 206 T CO3	Apply the knowledge for control of various pollution
BP 206 T CO4	Identify role of individual in conservation of resources and ecosystems.
BP 206 T CO5	Create the awareness about environmental problems
BP201T Human Anatomy and Physiology II [Theory | regular]	
CO ID.	**Course Outcome**
BP201TCO1	Explain morphology, structure and functions of various organs of the human body.
BP201TCO2	Describe the various homeostatic mechanisms and their imbalances
BP201TCO3	Identify the various tissues and organs of different systems of human body
BP201TCO4	Appreciate coordinated working pattern of different organs of each system
BP201TCO5	Explain linter mechanisms in the maintenance of normal function of human body
BP202T Pharmaceutical Organic Chemistry I [Theory | regular]	
CO ID.	**Course Outcome**
BP202TCO1	Classify the organic compounds and compare types of isomerism.
BP202TCO2	Apply the rules of IUPAC nomenclature, draw structures and name the Organic compounds
BP202TCO3	Apply the knowledge of functional groups and explain the methods of preparation and chemical reactivity of organic compounds.
BP202TCO4	Analyze the reactivity/stability of organic compounds.
BP202TCO5	Understand the structure, uses, & named reactions in Organic compounds.

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BP203T Biochemistry [Theory | regular]	
CO ID.	**Course Outcome**
BP203TCO1	Express biomolecules and bioenergetics in metabolisms of biomolecules Express biomolecules and bioenergetics in metabolisms of biomolecules
BP203TCO2	Evaluate metabolism of carbohydrates, lipids and amino acids in physiological and pathological conditions
BP203TCO3	Demonstrate structure of DNA & RNA and describe the functions of DNA
BP203TCO4	Explain biological oxidation in process of various mechanisms
BP203TCO5	Identify the Biochemical Pathway.
BP205T Computer Applications [Theory | regular]	
CO ID.	**Course Outcome**
BP205T CO1	Describe the various types of application of computers in pharmacy
BP205T CO2	Explain the various types of databases.
BP205T CO3	Describe the various applications of databases in pharmacy
BP205T CO4	Describe aspects related to Number System and Software Development Life Cycle
BP205T CO5	Summarize the objectives and impact of bioinformatics in the field of pharmacy
BP207P Human Anatomy and Physiology II [Practical | regular]	
CO ID.	**Course Outcome**
BP207PCO1	State the various system with their function by using specimen models & charts
BP207PCO2	Calculate the various volume with related respiratory mechanism
BP207PCO3	Recording of body Temperature, BMI, Etc.
BP207PCO4	Demonstration of Sensory activities
BP209P Biochemistry [Practical | regular]	
CO ID.	**Course Outcome**
BP209PCO1	Identify carbohydrates, proteins and amino acids by qualitative analysis
BP209PCO2	Evaluate given lipid sample by qualitative tests.
BP209PCO3	Define contrast normal and abnormal constituents of urine and blood sample
BP209PCO4	Explain effect of substrate concentration & temperature on enzyme activity of salivary amylase.
BP210P Computer Applications [Practical | regular]	
CO ID.	**Course Outcome**
BP210P CO1	Use Word Application and Surf Online tools
BP210P CO2	Create Web Page using HTML, Database, designing a form in MS Access and Invoice, Generating and Printing Reports
BP210P CO3	Store and Retrieve in MS Access and Export Tables, Queries, Forms
BP210P CO4	Export Tables, Queries, Forms and Reports to Web pages and XML pages.
BP305P Pharmaceutical Organic Chemistry I [Practical | regular]	
CO ID.	**Course Outcome**
BP208PCO1	Identify organic compounds by systemic qualitative analysis
BP208PCO2	Prepare organic compounds

BP208PCO3	Determine the boiling point and melting point of organic compounds.
BP208PCO4	Construct molecular models of compounds using atomic model set.
Sem-IV Div A	
BP401T Pharmaceutical Organic Chemistry III [Theory | regular]	
CO ID.	**Course Outcome**
BP401T CO1	Discuss the reaction and methods of preparation of organic compounds.
BP401T CO2	Explain the stereo chemical aspects of organic compounds.
BP401T CO3	Deduce the nomenclature & conformations of geometric isomerism.
BP401T CO4	Design the synthesis, reactions & aromaticity of heterocyclic compounds.
BP401T CO5	Elaborate medicinal uses of heterocyclic compounds.
BP402T Medicinal Chemistry I [Theory | regular]	
CO ID.	**Course Outcome**
BP402TCO1	Acquire basic concepts,History,Development of Medicinal chemistry
BP402TCO2	Classify different medicinal compounds with respect to Pharmacological activity and structure.
BP402TCO3	Discuss chemistry & pharmacokinetic profile of medicinal agents.
BP402TCO4	Illustrate SAR of different classes of medicinal agents.
BP402TCO5	Derive synthetic path of different medicinal agents.
BP403T Physical Pharmaceutics II [Theory | regular]	
CO ID.	**Course Outcome**
BP403T CO 1	Explain various types, preparation, purification, and properties of colloids.
BP403T CO2	Describe the theory and application of Rheology in formulation of Dosage form.
BP403T CO3	Explain the theory, physicochemical and evaluation methods for coarse dispersions
BP403T CO4	Describe the theory and application of Micrometrics in formulation of Dosage form.
BP403T CO5	Define the principles of chemical kinetics and use them for stability testing and determination of the shelf life of formulations.
BP404T Pharmacology I [Theory | regular]	
CO ID.	**Course Outcome**
BP404T.CO1	Understand the concepts of pharmacokinetics and pharmacodynamics of therapeutic agents.
BP404T.CO2	Develop an understanding of the ethical considerations required for the clinical use of the included class of therapeutic agents and controlled substances.
BP404T.CO3	Integrate the pharmacological implications of the included class of therapeutic agents and controlled substances with various pathological conditions.
BP404T.CO4	Capable of implementing strategies for the safer use of the included class of therapeutic agents and controlled substances.

BP404T.CO5	Effectively communicate and demonstrate the rational use of the included class of therapeutic agents and controlled substances for societal health-care.
BP405T Pharmacognosy and Phytochemistry I [Theory | regular]	
CO ID.	**Course Outcome**
BP405T CO1	Define pharmacognosy, express it's history , scope, classification of crude drugs and understand the techniques of cultivation and production.
BP405T CO2	Understand the knowledge about the crude drugs, their uses and chemical nature.
BP405T CO3	Discuss various evaluation techniques for the herbal drugs.
BP405T CO4	Define & apply the knowledge of alternative system of medicine in pharmacognosy & illustrate the different secondary metabolites & their pharmaceutical importance.
BP405T CO5	Study of plant metabolites along with in detail pharmcognosy including marine drugs..
BP406P Medicinal Chemistry I [Practical | regular]	
CO ID.	**Course Outcome**
BP406P CO1	Explain reactions and principle involved in synthesis of medicinal agents.
BP406P CO2	Standardize prepared titrants using volumetric principles.
BP406P CO3	Synthesize medicinal agents by appropriate chemical reactions and purify them by recrystallization methods.
BP406P CO4	Determine partition coefficient of of Medicinal Agents.
BP407P Physical Pharmaceutics II [Practical | regular]	
CO ID.	**Course Outcome**
BP 407P CO1	Evaluate physicochemical properties of the drugs, excipients and dosage forms
BP 407P CO2	Formulate coarse dispersions and evaluate their quality control parameters.
BP 407P CO3	Evaluate micrometric properties and determination of Particle size.
BP 407P CO4	Determine the rate constant and order of reaction to assess their stability and predict the shelf life of Pharmaceuticals.
BP408P Pharmacology I [Practical | regular]	
CO ID.	**Course Outcome**
BP508PCO1	To understand the basic knowledge about pharmacological experiments.
BP508PCO2	To understand the basic knowledge about equipments to be used for the screening of various drugs.
BP508PCO3	To identify the drug by understanding pharmacological responses of various animals
BP508PCO4	Correlate the theoretical knowledge to the practical by using software.
BP408P Pharmacognosy and Phytochemistry I [Practical | regular]	
CO ID.	**Course Outcome**
BP408 P CO1	Identify and analyze unorganized crude drugs systematically

BP408 P CO2	Evaluate and analyze quality of crude drugs by microscopic methods
BP408 P CO3	Evaluate and analyze quality of crude drugs by physico-chemical parameters
BP408 P CO4	Understand and Identify the various leaf constant.
Sem-VI Div A	
BP601T Medicinal Chemistry III [Theory | regular]	
CO ID.	**Course Outcome**
BP601T CO1	Remember structures, mechanism of actions and uses of medicinal drugs
BP601T CO2	Correlate the relationship between structure and biological activity of drug molecules
BP601T CO3	Know the metabolism, adverse effects and therapeutic value of drugs.
BP601T CO4	Remember the synthesis of medicinal drugs
BP601T CO5	Understand the concept of drug design and chemistry of drugs
BP602T Pharmacology III [Theory | regular]	
CO ID.	**Course Outcome**
BP602T.CO1	Understand the Clinical exposition of pharmacological agents in various disorders.
BP602T.CO2	Gain in depth understanding of clinical use of drugs in various infectious diseases and malignancies.
BP602T.CO3	Perceive knowledge regarding use of Immunological agents in pharmacotherapy
BP602T.CO4	Comprehend the principles of toxicology and treatment of various poiso
BP602T.CO5	Communicate and demonstrate the concept of chronopharmacology
BP603T Herbal Drug Technology [Theory | regular]	
CO ID.	**Course Outcome**
BP609TCO1	Convert the knowledge of herbal raw material through good agricultural practice into herbal products
BP609TCO 2	Apply the knowledge of nutraceutical agents in various metabolic disorders and explain herb-drug and herb- food interaction.
BP609TCO3	Recall herbal raw material to develop various herbal formulations and analyze them.
BP609TCO4	Analyze herbal raw material as per statutory guidelines and understand the regulatory requirements associated with natural products.
BP609TCO5	Explain the working of herbal drug industry as per relevant GMP
BP604T Biopharmaceutics and Pharmacokinetics [Theory | regular]	
CO ID.	**Course Outcome**
BP604T01	Describe basic concepts in biopharmaceutics and its applications formulation development
BP604T02	Discuss various pharmacokinetic processes and their relevance in dosage form design
BP604T03	Explain the concept of bioavailability and bioequivalence

BP604T04	Discuss nonlinear pharmacokinetics, compartment and non-compartment models of analysis
BP604T05	Explain mechanism of dissolution and in vivo- in vitro correlation
BP605T Pharmaceutical Biotechnology [Theory | regular]	
CO ID.	**Course Outcome**
BP605T CO1	Identify the importance of Immobilized enzymes in Pharmaceutical Industries
BP605T CO2	Apply genetic engineering applications in relation to production of pharmaceuticals
BP605T CO3	Recognise immunity and Types of immunity
BP605T CO4	Recognise the importance of Monoclonal antibodies in Industries
BP605T CO5	Appreciate the use of microorganisms in fermentation technology
BP606T Quality Assurance [Theory | regular]	
CO ID.	**Course Outcome**
BP606T.CO1	State the cGMP aspects in a pharmaceutical industry.
BP606T.CO2	appreciate the importance of documentation
BP606T.CO3	Describe the scope of quality certifications applicable to pharmaceutical industries.
BP606T.CO4	To know the responsibilities of QA &QC departments.
BP606T.CO 5	Outline the importance and scope of calibration, validation in pharmaceutical industry
BP607P Medicinal Chemistry III [Practical | regular]	
CO ID.	**Course Outcome**
BP607P CO1	Understand the importance of drug design and different techniques of drug design.
BP607P CO2	Understand the chemistry of drugs with respect to their biological activity.
BP607P CO3	Know the metabolism, adverse effects and therapeutic value of drugs.
BP607P CO4	Know the importance of SAR of drugs.
BP608P Pharmacology III [Practical | regular]	
CO ID.	**Course Outcome**
BP607P.CO1	To calculate the dose required for pharmacological experiments.
BP607P.CO2	To understand the basic knowledge toxicity study that has to be used for the screening of various drugs
BP607P.CO3	To identify the drug by understanding pharmacological responses of various animals
BP607P.CO4	Correlate the theoretical knowledge to the practical by using softwares
BP609P Herbal Drug Technology [Practical | regular]	
CO ID.	**Course Outcome**
BP609P.1	Evaluate various crude drugs for presence of secondary metabolites
BP609P.2	Analyze various herbal formulations including traditional formulations

BP609P.3	Utilization of standardized extract in various herbal formulation
BP609P.4	Outline the Monograph analysis of herbal drugs from recent pharmacopoeia
Sem IV Div B	
BP401T Pharmaceutical Organic Chemistry III [Theory | regular]	
CO ID.	**Course Outcome**
BP401T CO1	Discuss the reaction and methods of preparation of organic compounds.
BP401T CO2	Explain the stereo chemical aspects of organic compounds.
BP401T CO3	Deduce the nomenclature & conformations of geometric isomerism.
BP401T CO4	Design the synthesis, reactions & aromaticity of heterocyclic compounds.
BP401T CO5	Elaborate medicinal uses of heterocyclic compounds.
BP402T Medicinal Chemistry I [Theory | regular]	
CO ID.	**Course Outcome**
BP402TCO1	Acquire basic concepts,History,Development of Medicinal chemistry
BP402TCO2	Classify different medicinal compounds with respect to Pharmacological activity and structure.
BP402TCO3	Discuss chemistry & pharmacokinetic profile of medicinal agents
BP402TCO4	Illustrate SAR of different classes of medicinal agents.
BP402TCO5	Derive synthetic path of different medicinal agents.
BP403T Physical Pharmaceutics II [Theory | regular]	
CO ID.	**Course Outcome**
BP403T CO 1	Explain various types, preparation, purification, and properties of colloids.
BP403T CO2	Describe the theory and application of Rheology in formulation of Dosage form.
BP403T CO3	Explain the theory, physicochemical and evaluation methods for coarse dispersions
BP403T CO4	Describe the theory and application of Micrometrics in formulation of Dosage form.
BP403T CO5	Define the principles of chemical kinetics and use them for stability testing and determination of the shelf life of formulations.
BP404T Pharmacology I [Theory | regular]	
CO ID.	**Course Outcome**
BP404T.CO1	Understand the concepts of pharmacokinetics and pharmacodynamics of therapeutic agents.
BP404T.CO2	Develop an understanding of the ethical considerations required for the clinical use of the included class of therapeutic agents and controlled substances.
BP404T.CO3	Integrate the pharmacological implications of the included class of therapeutic agents and controlled substances with various pathological conditions.
BP404T.CO4	Capable of implementing strategies for the safer use of the included class of therapeutic agents and controlled substances.

BP404T.CO5	Effectively communicate and demonstrate the rational use of the included class of therapeutic agents and controlled substances for societal health-care.
BP405T Pharmacognosy and Phytochemistry I [Theory | regular]	
CO ID.	**Course Outcome**
BP405T CO1	Define Pharmacognosy, express its history and scope and recall the various classes of crude drugs and execute the evaluation of adulterants present in them
BP405T CO2	Understand the knowledge about the crude drugs, their uses and chemical nature.
BP405T CO3	Discuss various evaluation techniques for the herbal drugs.
BP405T CO4	Define & apply the knowledge of alternative system of medicine in pharmacognosy & illustrate the different secondary metabolites & their pharmaceutical importance.
BP405T CO5	Study of plant metabolites along with in detail pharmcognosy including marine drugs..
BP406P Medicinal Chemistry I [Practical | regular]	
CO ID.	**Course Outcome**
BP406P CO1	Explain reactions and principle involved in synthesis of medicinal agents.
BP406P CO2	Standardize prepared titrants using volumetric principles.
BP406P CO3	Synthesize medicinal agents by appropriate chemical reactions and purify them by recrystallization methods.
BP406P CO4	Determine partition coefficient of of Medicinal Agents.
BP407P Physical Pharmaceutics II [Practical | regular]	
CO ID.	**Course Outcome**
BP 407P CO1	Evaluate physicochemical properties of the drugs, excipients and dosage forms.
BP 407P CO2	Determine the rate constant and order of reaction to assess their stability and predict the shelf life of Pharmaceuticals.
BP 407P CO3	Formulate coarse dispersions and colloidal dispersions and evaluate their efficacy.
BP 407P CO4	Determine the complexation by different methods.
BP408P Pharmacology I [Practical | regular]	
CO ID.	**Course Outcome**
BP408PCO1	To understand the basic knowledge about pharmacological experiments.
BP508PCO2	To understand the basic knowledge about equipments to be used for the screening of various drugs.
BP408PCO3	To identify the drug by understanding pharmacological responses of various animals
BP408PCO4	Correlate the theoretical knowledge to the practical by using software.

BP408P Pharmacognosy and Phytochemistry I [Practical | regular]	
CO ID.	**Course Outcome**
BP408 P CO1	Identify and analyze unorganized crude drugs systematically
BP408 P CO2	Evaluate and analyze quality of crude drugs by microscopic methods
BP408 P CO3	Evaluate and analyze quality of crude drugs by physico-chemical parameters
BP408 P CO4	Understand and Identify the various leaf constant
Sem VI Div B	
BP601T Medicinal Chemistry III [Theory | regular]	
CO ID.	**Course Outcome**
BP601T CO1	Remember structures, mechanism of actions and uses of medicinal drugs
BP601T CO2	Correlate the relationship between structure and biological activity of drug molecules
BP601T CO3	Know the metabolism, adverse effects and therapeutic value of drugs.
BP601T CO4	Remember the synthesis of medicinal drugs
BP601T CO5	Understand the concept of drug design and chemistry of drugs
BP602T Pharmacology III [Theory | regular]	
CO ID.	**Course Outcome**
BP602T.CO1	Understand the Clinical exposition of pharmacological agents in respiratory and gastrointestinal disorders.
BP602T.CO2	Gain in depth understanding of clinical use of drugs in various infectious diseases and malignancies
BP602T.CO3	Perceive knowledge regarding use of Immunological agents in pharmacotherapy
BP602T.CO4	Comprehend the principles of toxicology and treatment of various poisoning
BP602T.CO5	Communicate and demonstrate the concept of chronopharmacology.
BP603T Herbal Drug Technology [Theory | regular]	
CO ID.	**Course Outcome**
BP609TCO1	Convert the knowledge of herbal raw material through good agricultural practice into herbal products
BP609TCO2	Apply the knowledge of nutraceutical agents in various metabolic disorders and explain herb-drug and herb- food interaction.
BP609TCO3	Recall herbal raw material to develop various herbal formulations and analyze them.
BP609TCO4	Analyze herbal raw material as per statutory guidelines and understand the regulatory requirements associated with natural products
BP609TCO5	Explain the working of herbal drug industry as per relevant GMP.
BP604T Biopharmaceutics and Pharmacokinetics [Theory | regular]	
CO ID.	**Course Outcome**
BP604T01	Describe basic concepts in biopharmaceutics and pharmacokinetics and its applications in formulation development
BP604T02	Discuss various pharmacokinetic processes and their relevance in dosage form design.

BP604T03	Explain the concepts of bioavailability and bioequivalence
BP604T04	Discuss nonlinear pharmacokinetics, compartments and non-compartment model for analysis.
BP604T05	Explain mechanism of dissolution and in vivo- in vitro correlation
BP605T Pharmaceutical Biotechnology [Theory | regular]	
CO ID.	**Course Outcome**
BP605T CO1	Identify the importance of Immobilized enzymes in Pharmaceutical Industries
BP605T CO2	Apply genetic engineering applications in relation to production of pharmaceuticals
BP605T CO3	Recognise immunity and Types of immunity
BP605T CO4	Recognise the importance of Monoclonal antibodies in Industries
BP605T CO5	Appreciate the use of microorganisms in fermentation technology
BP606T Quality Assurance [Theory | regular]	
CO ID.	**Course Outcome**
BP606T.CO1	understand the cGMP aspects in a pharmaceutical industry
BP606T.CO2	appreciate the importance of documentation
BP606T.CO3	understand the scope of quality certifications applicable to pharmaceutical industries
BP606T.CO4	understand the responsibilities of QA & QC departments
BP606T.CO 5	Outline the importance and scope of calibration, validation in pharmaceutical industry
BP607P Medicinal Chemistry III [Practical | regular]	
CO ID.	**Course Outcome**
BP607P CO1	Understand the importance of drug design and different techniques of drug design.
BP607P CO2	Understand the chemistry of drugs with respect to their biological activity.
BP607P CO3	Know the metabolism, adverse effects and therapeutic value of drugs.
BP607P CO4	Know the importance of SAR of drugs.
BP608P Pharmacology III [Practical | regular]	
CO ID.	**Course Outcome**
BP607P.CO1	To calculate the dose required for pharmacological experiments.
BP607P.CO2	To understand the basic knowledge toxicity study that has to be used for the screening of various drugs
BP607P.CO3	To identify the drug by understanding pharmacological responses of various animals
BP607P.CO4	Correlate the theoretical knowledge to the practical by using softwares
BP609P Herbal Drug Technology [Practical | regular]	
CO ID.	**Course Outcome**
BP609P.1	Evaluate various crude drugs for presence of secondary metabolites

BP609P.2	Analyze various herbal formulations including traditional formulations
BP609P.3	Utilization of standardized extract in various herbal formulation
BP609P.4	Outline the Monograph analysis of herbal drugs from recent pharmacopoeia
Sem-VIII Div A	
BP801T Biostatistics and Research Methodology [Theory | regular]	
CO ID.	**Course Outcome**
BP801T CO1	Recognize the relationships between variables by analysing measures of central tendency and dispersion statistically.
BP801T CO2	Examine the outcomes using both parametric and non-parametric tests to assess the significance of studies and hypothesis testing. Understand diverse statistical techniques to address statistical issues effectively.
BP801T CO3	Comprehend the importance of research, experimental design, and interpreting results through graphical representation.
BP801T CO4	Gain expertise in regression analysis utilizing tools like Excel, SPSS, and software for experimental design.
BP801T CO5	Applying experimental design methodologies to address pharmaceutical case studies.
BP802T Social and Preventive Pharmacy [Theory | regular]	
CO ID.	**Course Outcome**
BP802TCO1	Apply the knowledge of health, hygiene and disease for prevention and control of disease and also for overcoming the factors responsible for disease
BP802TCO2	Explain epidemiology, transmission ,prevention and control of disease
BP802TCO3	Explain the healthcare systems, policies, and regulations at local, national, and international levels and also understand national health programs and their impact on public
BP802TCO4	Relate the importance of healthcare facilities in delivering preventive services and promoting public health ensuring access to quality healthcare for all.
BP802TCO5	Describe healthcare services, health education and maintenance of sanitary conditions.
BP804ET Pharmaceutical Regulatory Science [Theory | regular]	
CO ID.	**Course Outcome**
BP804ET-CO1	Apply the study of Pharmaceutical Legislation, relevance, drug development andSignificance of regulatory authorities, affairs to Pharmaceutical Sciences
BP804ET-CO2	Distinguish fundamentals of registration of Indian drug to regulate import manufacture, distribution and sales of drug in overseas market .
BP804ET-CO3	Describe the various parameters of INDA, NDA, ANDA in accordance with regulatory agencies throughout the world.
BP804ET-CO4	Explain the concepts of guidance, guidelines, regulations, laws and acts, code of federal regulatory

BP804ET-C05	Regulatroy concept. Guidline Guidance and regulation.
BP805ET Pharmacovigilance [Theory | regular]	
CO ID.	**Course Outcome**
BP805ET.1 CO1	Define drug safety monitoring is important and History and development of pharmacovigilance
BP805ET.2 CO2	Explain about international standards for classification of diseases and drugs and Dictionaries, coding and terminologies used in pharmacovigilance
BP805ET.3 CO3	Define about Adverse drug reaction reporting systems and communication in pharmacovigilance
BP805ET.4 CO4	Apply Drug safety evaluation in pediatrics, geriatrics, pregnancy and lactation
BP805ET.5 CO5	Apply Drug safety evaluation in pediatrics, geriatrics, pregnancy and lactation
BP812PW Project Work [Theory | regular]	
CO ID.	**Course Outcome**
BP812PW.1	Define multidisciplinary areas related to pharmacy profession
BP812PW.2	Transform required skills for professional world.
BP812PW.3	Compose specific topic in scientific and pharmacy fields.
BP812PW.4	Archive advanced knowledge in research and manuscript writing
BP812PW.5	Explain new trends among group of students and faculties.
Sem VIII Div B	
BP801T Biostatistics and Research Methodology [Theory | regular]	
CO ID.	**Course Outcome**
BP801T CO1	Recognize the relationships between variables by analysing measures of central tendency and dispersion statistically.
BP801T CO2	Examine the outcomes using both parametric and non-parametric tests to assess the significance of studies and hypothesis testing. Understand diverse statistical techniques to address statistical issues effectively.
BP801T CO3	Comprehend the importance of research, experimental design, and interpreting results through graphical representation.
BP801T CO4	Gain expertise in regression analysis utilizing tools like Excel, SPSS, and software for experimental design.
BP801T CO5	Applying experimental design methodologies to address pharmaceutical case studies.
BP802T Social and Preventive Pharmacy [Theory | regular]	
CO ID.	**Course Outcome**
BP802T CO1	Apply the knowledge of health, hygiene and disease for prevention and control of disease and also for overcoming the factors responsible for disease.
BP802T CO2	Explain epidemiology, transmission ,prevention and control of disease

BP802T CO3	Explain the healthcare systems, policies, and regulations at local, national, and international levels and also understand national health programs and their impact on public.
BP802T CO4	Relate the importance of healthcare facilities in delivering preventive services and promoting public health ensuring access to quality healthcare for all.
BP802T CO5	Describe healthcare services, health education and maintenance of sanitary conditions.
BP804ET Pharmaceutical Regulatory Science [Theory | regular]	
CO ID.	**Course Outcome**
BP804ET-CO1	Apply the study of Pharmaceutical Legislation, relevance, drug development andSignificance of regulatory authorities, affairs to Pharmaceutical Sciences
BP804ET-CO2	Distinguish fundamentals of registration of Indian drug to regulate import manufacture, distribution and sales of drug in overseas market .
BP804ET-CO3	Describe the various parameters of INDA, NDA, ANDA in accordance with regulatory agencies throughout the world.
BP804ET-CO4	Explain the concepts of guidance, guidelines, regulations, laws and acts, code of federal regulatory
BP804ET-CO5	Regulatroy concept. Guidline Guidance and regulation.
BP805ET Pharmacovigilance [Theory | regular]	
CO ID.	**Course Outcome**
BP805ET.1 CO1	To Evaluate drug safety monitoring is important and History and development of pharmacovigilance.
BP805ET.2 CO2	To demonstrate about international standards for classification of diseases and drugs and Dictionaries, coding and terminologies used in pharmacovigilance
BP805ET.3 CO3	Define about Adverse drug reaction reporting systems and communication in pharmacovigilance
BP805ET.4 CO4	To demonstrate ICH guidelines for ICSR, PSUR, expedited reporting, pharmacovigilance planning
BP805ET.5 CO5	To Explain about Drug safety evaluation in pediatrics, geriatrics, pregnancy and lactation
BP812PW Project Work [Theory | regular]	
CO ID.	**Course Outcome**
BP812PW.1	Define multidisciplinary areas related to pharmacy profession
BP812PW.2	Transform required skills for professional world.
BP812PW.3	Compose specific topic in scientific and pharmacy fields.
BP812PW.4	Archive advanced knowledge in research and manuscript writing
BP812PW.5	Explain new trends among group of students and faculties.