COURSE OUTCOMES FOR BACHELOR OF PHARMACY PROGRAMME

Course Code & Name	Course Outcomes
BP101T Human Anatomy and Physiology I	1. Students would have studied about the gross morphology, structure and functions of cell, skeletal, muscular, cardiovascular system of the human body. 2. They would have understood the various homeostatic mechanisms and their imbalances.
BP102T Pharmaceutical Analysis I	1. Know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals by understanding the concepts of limit test. 2. Understand the principles of volumetric and electro chemical analysis 3. Understand the concept of errors and will develop the skills to eliminate errors during analytical procedures. 4. Understand the basic skills to prepare and standardize different titrants.
BP103T Pharmaceutics I	1. Know the history of profession of pharmacy 2. Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations 3. Formulate different types of dosage forms 4. Understand the professional way of handling the prescription 5. Preparation of various conventional dosage forms
BP104T Pharmaceutical Inorganic Chemistry	1. Know the sources of impurities 2. Understand methods to determine the impurities in inorganic drugs and pharmaceuticals 3. Understand the medicinal and pharmaceutical importance of inorganic compounds
BP201T Human Anatomy and Physiology II	1. Students would have studied about the gross morphology structure and functions of nervous, respiratory, urinary, and reproductive systems in the human body. 2. They would have studied in detailed about energy and metabolism.

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	3. Students would be able to identify the various organs of different systems of human body.
BP202T Pharmaceutical Organic Chemistry I	1. Write the structure, name and the type of isomerism of the organic compound 2. Write the reaction, name the reaction and orientation of reactions 3. Account for reactivity/stability of compounds, 4. identify/confirm the identification of organic compound
BP203T Biochemistry	1. Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs. 2. therapeutic and diagnostic applications of enzymes. 3. Understand the metabolism of nutrient molecules in physiological and pathological conditions. 4. Understand the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins.
BP204T Pathophysiology – Theory	1. Understand the basic principles of cell injury and adaptation 2. Understand the basic mechanism involved in the process of inflammation and repair 3. Describe the etiology and pathogenesis of the selected disease states
BP206T Environmental Sciences	1. Acquire Basic knowledge about structure of the environment and its associated problems. 2. Inspire the students to take part in environmental protection and improvement. 3. Make the students awareness about environmental problems 4. Develop an viewpoint of treat the environment. 5. Make the students expertise in identifying and solving environmental problems.
BP301T Pharmaceutical Organic Chemistry II	1. write the structure, name and the type of isomerism of the organic compound 2. write the reaction, name the reaction and orientation of reactions 3. account for reactivity/stability of compounds,

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	4. prepare organic compounds
BP302T Physical Pharmaceutics I	1. Understand various physicochemical properties of drug molecules in the designing the dosage form 2. Demonstrate use of physicochemical properties in evaluation of dosage forms. 3. Appreciate physicochemical properties of drug molecules in formulation research and development 4. Idea about importance of preformulation study in formulation
BP303T Pharmaceutical Microbiology	1. Describe in details the morphology, the culturing techniques, biochemical activities, treatment, prevention & control measures of each bacteria. 2. Mechanisms commonly involved in the infection. 3. Methods of microorganisms and their control by sterilization & disinfection. 4. Demonstrate practical skills in fundamental microbiological techniques.
BP304T Pharmaceutical Engineering	1. Know various unit operations used in pharmaceutical industries. 2. Understand the various laws, mechanisms of unit operations. 3. Learn the various processes involved in pharmaceutical manufacturing process. 4. Understand the material handling techniques. 5. Know the principle, construction, working, uses, advantages and disadvantages of pharmaceutical equipment's used for various unit operations. 6. Understand the concepts of heat transfer and fluid flow.
BP401T Pharmaceutical Organic Chemistry III	1. understand the methods of preparation and properties of organic compounds 2. explain the stereo chemical aspects of organic compounds and stereo chemical reaction 3. know the medicinal uses and other applications of organic compounds
BP402T Medicinal Chemistry I	1. understand the chemistry of drugs with respect to their pharmacological activity 2. understand the drug metabolic pathways, adverse effect and therapeutic value of drugs 3. know the Structural Activity Relationship (SAR) of different class of drugs 4. write the chemical synthesis of some drugs

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BP403T Physical Pharmaceutics II	1. Understand various physicochemical properties of drug molecules in the designing the dosage form 2. Know the principles of chemical kinetics & to use them in assigning expiry date for Formulation 3. Demonstrate use of physicochemical properties in evaluation of dosage forms 4. Appreciate physicochemical properties of drug molecules in formulation research and Development
BP404T Pharmacology I	1. Understand the pharmacological actions of different categories of drugs 2. Explain the mechanism of drug action at organ system/sub cellular/macromolecular levels. 3. Apply the basic pharmacological knowledge in the prevention and treatment of various diseases.
BP405T Pharmacognosy and Phytochemistry I	1. Understand the importance of medicinal plants used in various system of medicine 2. Demonstrate various pharmacognostic parameters of crude drugs. 3. Carbohydrates, Lipids, Flavonoids, Tannins, Alkaloids, Resins, Volatile oils-introduction, distribution, properties, classification and identification 4. Able to built up and apply the knowledge about cultivation and production of crude drugs and Conservation of medicinal palnts. 5. The recognition of medicinal plants, identification of adulteration and contamination.
BP501T Medicinal Chemistry II	2. Understand the drug metabolic pathways, adverse effect and therapeutic value of drugs 3. Know the Structure Activity Relationship of different class of drugs 4. Study the chemical synthesis of selected drugs
BP502T Formulative Pharmacy	1. Know the various pharmaceutical dosage forms and their manufacturing techniques. 2. Know various considerations in development of pharmaceutical dosage forms 3. Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality

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BP503T Pharmacology II	1. Understand the mechanism of drug action and its relevance in the treatment of different diseases. 2. Comprehend the principles and applications of bioassay
BP504T Pharmacognosy and Phytochemistry II	1. Explain basic metabolic pathways of plants and formation of different secondary metabolites through various biosynthetic pathways in plants 2. Explain source, chemistry, therapeutic uses of various secondary metabolites containing drugs. 3. Describe methods for industrial production, estimation and utilization of some therapeutically important phytoconstituents 4. Describe various modern methods for extraction 5. Application of latest techniques for analysis of phytoconstituents 6. Explain the process of isolation, purification and identification of crude drugs
BP505T Pharmaceutical Jurisprudence	1. Understand the Pharmaceutical legislations and their implications in the development and marketing 2. Understand Various Indian Pharmaceutical Acts and Laws 3. Understand regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals 4. Understand the code of ethics during the pharmaceutical practice
BP601T Medicinal Chemistry III	1. Understand the importance of drug design and different techniques of drug design. 2. Understand the chemistry of drugs with respect to their biological activity. 3. Know the metabolism, adverse effects and therapeutic value of drugs. 4. Know the importance of SAR of drugs
BP602T Pharmacology III	1. Students would have studied elaborately on mechanism of drug action and its relevance in the treatment of different infectious diseases.

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	2. They comprehended the principles of toxicology and treatment of various poisonings. 3. They came across the methods of toxicity studies. 4. They studied about treatment of several poisonings. 5. Students can appreciate correlation of pharmacology with related medicinal sciences.
BP603T Herbal Drug Technology	1. Students will understand the process of sourcing raw materials for herbal drugs and their transformation into herbal drug products. 2. Students will be familiar with WHO and ICH guidelines for evaluating and ensuring quality in herbal drugs. 3. Students will gain knowledge about herbal formulations, herbal cosmetics, natural sweeteners, and nutraceuticals and their applications in the herbal drug industry. 4. Students will appreciate the significance of patenting herbal drugs and adhering to GMP for quality, safety, and efficacy in production.
BP604T Biopharmaceutics and Pharmacokinetics	1. Understand the basic concepts in bio pharmaceutics and pharmacokinetics. 2. Use plasma data and derive the pharmacokinetic parameters to describe the process of drug Absorption, distribution, metabolism and elimination. 3. Critically evaluate biopharmaceutical studies involving drug product equivalency 4. Design and evaluate dosage regimens of the drugs using pharmacokinetic and biopharmaceutic Parameters. 5. Detect potential clinical pharmacokinetic problems and apply basic pharmacokinetic principles
BP605T Pharmaceutical Biotechnology	1. Understanding the importance of Immobilized enzymes in Pharmaceutical Industries 2. Genetic engineering applications in relation to production of pharmaceuticals 3. Importance of Monoclonal antibodies in Industries

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	4. Appreciate the use of microorganisms in fermentation technology
BP606T Quality Assurance	1. Understand the CGMP. 2. Understand the ISO 9000 3. Understand ICH stability testing guidelines. 4. Understand the GLP.
BP701T Instrumental Methods of Analysis	1. Understand the chromatography separation. 2. Understand the analysis of drugs. 3. Understand the various analytical instruments.
BP702T Industrial Pharmacy	1. Know the process of pilot plant and scale up of pharmaceutical dosage forms 2. Understand the process of technology transfer from lab scale to commercial batch 3. Know different laws and acts that regulate pharmaceutical industry in India and US 4. Understand the approval process and regulatory requirements for drug products
BP703T Pharmacy Practice	1. Work in a hospital pharmacy. 2. Perform clinical pharmacy services. 3. Provide pharmaceutical care and disease management. 4. Provide community pharmacy services.
BP704T Novel Drug Delivery System	1. To understand various approaches for development of novel drug delivery systems. 2. To impart basic knowledge on the area of novel drug delivery systems 3. To understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation
BP801T Biostatistics and Research Methodology	1. Design a research work 2. Describe different epidemiological methods 3. Use basic biostatistical tests 4. Create a research report
BP802T Social and Preventive Pharmacy	1. Describe health policies of the government. 2. Be socially responsible in Prevention and control of communicable diseases. 3. Describe demographic status.

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	4. Work in Public health management.
BP803ET Pharmaceutical Marketing	1. Understand marketing concepts and techniques 2. Study the application of the same in the pharmaceutical industry. 3. To manage and take complex decisions which are imperative for the growth of the industry.
BP804ET Pharmaceutical Regulatory Science	1. Explain the process of drug discovery, development, and generic product development 2. Describe the regulatory approval process and registration procedures for API and drug products in various countries 3. Learn the basic understanding of regulations of India with other global regulated markets 4. Understand the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals 5. Explain basic understanding of developing clinical trial protocols 6. Understand the concept of pharmacovigilance and its significance
BP805ET Pharmacovigilance	1. Development of pharmacovigilance as a science. 2. Basic terminologies used in pharmacovigilance 3. Global scenario of Pharmacovigilance 4. Train students on establishing pharmacovigilance programme in an organization. 5. Various methods that can be used to generate safety data and signal detection. 6. Develop the skills of classifying drugs, diseases and adverse drug reactions.
BP806ET Quality Control and Standardization of Herbs	1. Understand WHO Guidelines for quality control of herbals 2. Understand Quality assurance in herbal industry 3. Understand Regulatory approval process of herbal medicine in India and International market. 4. Understand EU & ICH Guideline for quality control of herbal drugs.
BP807ET Computer Aided Drug Designing	1. Design and discovery of lead molecules 2. The role of drug design in drug discovery process

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	3. The concept of QSAR and docking 4. Various strategies to develop new drug like molecules. 5. The design of new drug molecules using molecular modeling software
BP808ET Cell and Molecular Biology	1. Understands the history of cell & molecular biology. 2. Understands the chemical foundation of cell biology. 3. Understands the DNA properties of cell biology. 4. Understands the protein structure and functions.
BP809ET Cosmetic Science	1. Know the cosmetic principles to address the needs of cosmetic industry. 2. Understand formulation science and analytical techniques required to scientifically design and develop cosmetic products. 3. Explain the scientific and technical aspects, high standards of practice and professional ethics within the cosmetic and toiletries industry
BP810ET Experimental Pharmacology	1. Understands the application of various commonly used experimental animals. 2. Understands various screening methods in preclinical studies. 3. Understands the importance of biostatics and research methodology.
BP811ET Advanced Instrumentation Techniques	1. Understand the chromatography separation. 2. Understand the analysis of drugs. 3. Understand the various analytical instruments.