



SRI SIVANI COLLEGE OF PHARMACY

(Under the Management of Sri Sivani Educational Society, Srikakulam)
 (Estd.2007, Approved by PCI-New Delhi and Affiliated to JNTU, Gurajada-Vizianagaram)
 N.H-16, Chilakapalem Jn., Etcherla Mandal, Srikakulam Dist - 532402.

COURSE OUTCOME STATEMENT

Course Outcomes:

Course Outcomes are narrower statements that describe what students are expected to know, and be able to do at the end of each course. These relate to the skills, knowledge, and behaviour that students acquire in their enrolment through the course.

COURSE OUTCOMES

C.O NUMBER	COURSE OUTCOME
COURSE OF STUDY FOR SEMESTER I (I B.PHARMACY I SEMESTER)	
HUMAN ANATOMY AND PHYSIOLOGY-I (BP101T)	
BP101T.1	Explain the gross morphology, structure and functions of various organs of the human body.
BP101T.2	Describe the various homeostatic mechanisms and their imbalances.
BP101T.3	Identify the various tissues and organs of different systems of human body.
BP101T.4	Perform the various experiments related to special senses and nervous system.
BP101T.5	Appreciate coordinated working pattern of different organs of each system
PHARMACEUTICAL ANALYSIS-I (BP102T)	
BP102T.1	Understand the principles of volumetric and electro chemical analysis
BP102T.2	Carryout various volumetric and electrochemical titrations
BP102T.3	Develop analytical skills
BP102T.4	Explain principle, method and applications of complexometric titration & diazotization titration
BP102T.5	Demonstrate the understanding of estimation of sodium benzoate and ephedrine HCL
PHARMACEUTICS-I (BP103T)	
BP 103T.1	Know the history of profession of pharmacy
BP 103T.2	Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations

BP 103T.3	Practice the professional way of handling the prescription
BP 103T.4	Preparation of various conventional dosage forms
BP 103T.5	Define monophasic and biphasic liquids.
PHARMACEUTICAL INORGANIC CHEMISTRY(BP104T)	
BP 104T.1	Know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals
BP 104T.2	Understand the medicinal and pharmaceutical importance of inorganic compounds
BP 104T.3	Explain buffers in pharmaceutical system, their preparation and stability
BP 104T.4	Describe general methods of preparation and assay for the gastro intestinal agents(acidifiers, antacids, cathartics and anti-microbials)
BP 104T.5	Demonstrate the functions of major physiological ions, electrolytes used in replacement therapy
COMMUNICATION SKILLS(BP105T)	
BP105T.1	Understand the behavioural needs for a Pharmacist to function effectively in the areas of pharmaceutical operation
BP105T.2	Communicate effectively (Verbal and Non Verbal)
BP105T.3	Effectively manage the team as a team player
BP105T.4	Find, use, and evaluate primary academic writing associated with the communication discipline
BP105T.5	Develop Leadership qualities and essentials
REMEDIAL MATHEMETICS(BP106 RMT)	
BP106RMT.1	Know the theory and their application in Pharmacy
BP106RMT.2	Solve the different types of problems by applying theory
BP106RMT.3	Appreciate the important application of mathematics in Pharmacy
BP106RMT.4	Express equation of straight line and identify condition of perpendicular or parallel of two lines
BP106RMT.5	Demonstrate understanding of use of differential equation and lapses equation in solving chemical kinetic and Pharmaco kinetic equation
REMEDIAL BIOLOGY(BP106 RBT)	
BP106RBT.1	Know the classification and salient features of five kingdoms of life
BP106RBT.2	Understand the basic components of anatomy & physiology of plant
BP106RBT.3	Identify the basic components of anatomy & physiology animal with special reference to human

BP106RBT.4	Explain about breathing and respiration in humans
BP106RBT.5	Describe elimination, neural control, chemical coordination of human body
HUMAN ANATOMY AND PHYSIOLOGY-I PRACTICAL(BP107P)	
BP107P.1	Study of compound microscope, Microscopic study of epithelial and connective tissue, muscular and nervous tissue
BP107P.2	Identification of axial bones, appendicular bones
BP107P.3	Enumeration of white blood cell (WBC) count, total red blood corpuscles (RBC) count
BP107P.4	Determination of bleeding time, clotting time, blood group, erythrocyte sedimentation rate (ESR) heart rate and pulse rate.
PHARMACEUTICAL ANALYSIS-I PRACTICAL(BP108P)	
BP108P.1	Limit Test for Chloride, Sulphate, Iron, Arsenic
BP108P.2	Preparation and standardization of Sodium hydroxide, Sulphuric acid, Sodium thiosulfate, Potassium permanganate, Ceric ammonium sulphate
BP108P.3	Assay of the compounds along with Standardization of Titrant
BP108P.4	Determination of Normality by electro-analytical methods, Conductometric titrations
PHARMACEUTICS-I PRACTICAL(BP109P)	
BP109P.1	Preparation of Syrups, Elixirs, Linctus
BP109P.2	Formulation of Liquid dosage forms such as Solutions, Suspensions, Emulsions
BP109P.3	Explain the Preparation of Powders and Granules
BP109P.4	Demonstrate the Preparation of Suppositories, Semisolids, Gargles and Mouth washes
PHARMACEUTICAL INORGANIC CHEMISTRY PRACTICAL(BP110P)	
BP110P.1	Modified limit test for Chlorides and Sulphates, Heavy metals, Lead Arsenic II.
BP110P.2	Evaluation test for purity, Swelling power of Bentonite, Neutralizing capacity of aluminium hydroxide gel.
BP110P.3	Determination of potassium iodate and iodine in potassium Iodide.
BP110P.4	Preparation of inorganic pharmaceuticals and their Identification tests.
COMMUNICATION SKILLS PRACTICAL(BP111P)	
BP111P.1	Understand the behavioural needs for a Pharmacist to function effectively in the areas of pharmaceutical operation
BP111P.2	Communicate effectively (Verbal and Non Verbal)
BP111P.3	Effectively manage the team as a team player

BP111P.4	Develop interview skills, Develop Leadership qualities and essentials
REMEDIAL BIOLOGY PRACTICAL(BP112 RBP)	
BP112 RBP.1	Study of Microscope, Section cutting techniques, Mounting and staining, Permanent slide preparation
BP112 RBP.2	Demonstration of cell and its inclusions, Stem, Root, Leaf, seed, fruit, flower and their modifications
BP112 RBP.3	Detailed study of frog by using computer models
BP112 RBP.4	Microscopic study and identification of tissues pertinent to Stem, Root Leaf, seed, fruit and flower

C.O NUMBER	COURSE OUTCOME
COURSE OF STUDY FOR SEMESTER II (I B.PHARMACY II SEMESTER)	
HUMAN ANATOMY AND PHYSIOLOGY-II (BP201T)	
BP201T.1	Explain the gross morphology, structure and functions of various organs of the human body
BP201T.2	Describe the various homeostatic mechanisms and their imbalances
BP201T.3	Identify the various tissues and organs of different systems of human body.
BP201T.4	Perform the haematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc. and also record blood pressure, heart rate, pulse and respiratory volume
BP201T.5	Appreciate coordinated working pattern of different organs of each system
PHARMACEUTICAL ORGANIC CHEMISTRY-I (BP202T)	
BP202T.1	Write the structure, name and the type of isomerism of the organic compound
BP202T.2	Explain the reaction, name the reaction and orientation of reactions
BP202T.3	Account for reactivity/stability of compounds,
BP202T.4	Identify/confirm the identification of organic compound
BP202T.5	Describe about the carbonyl compounds
BIOCHEMISTRY(BP203T)	
BP 203T.1	Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes
BP 203T.2	Knowledge on the metabolism of nutrient molecules in physiological and pathological conditions
BP 203T.3	Explain the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins
BP 203T.4	Describe the Enzymes and IUB classification of Enzymes
BP 203T.5	Learn theoretical aspects of animal cell, biomembrane, vitamins, nucleic acids and biomolecules.
PHATHOPHYSIOLOGY(BP204T)	
BP 204T.1	Describe the etiology and pathogenesis of the selected disease states
BP 204T.2	Name the signs and symptoms of the diseases; and
BP 204T.3	Mention the complications of the diseases.
BP 204T.4	Explain about infectious diseases
BP 204T.5	Discuss about the pathology of cancer and classification of different cancers

COMPUTER APPLICATIONS IN PHARMACY (BP205T)	
BP205T.1	Know the various types of application of computers in pharmacy
BP205T.2	Explain the various types of databases
BP205T.3	Describe the various applications of databases in pharmacy
BP205T.4	Discuss various web technologies
BP205T.5	Demonstrate Computers as data analysis in Preclinical development
ENVIRONMENTAL SCIENCES (BP206T)	
BP206T.1	Create the awareness about environmental problems among learners.
BP206T.2	Impart basic knowledge about the environment and its allied problems.
BP206T.3	Develop an attitude of concern for the environment.
BP206T.4	Motivate learner to participate in environment protection and environment improvement.
BP206T.5	Acquire skills to help the concerned individuals in identifying and solving environmental problems.
HUMAN ANATOMY AND PHYSIOLOGY II – PRACTICAL(BP207P)	
BP207P.1	Know mechanisms involved in homeostasis for protection of body.
BP207P.2	Study various systems of human body using specimen, models, charts etc.
BP207P.3	Determine respiratory volumes and capacities by using Spirometer
BP207P.4	Discuss the family planning devices and pregnancy diagnosis test.
PHARMACEUTICAL ORGANIC CHEMISTRY I – PRACTICAL(BP208P)	
BP208P.1	Detect the extra elements present in compounds.
BP208P.2	Identify organic compounds by systemic qualitative analysis
BP208P.3	Determine the boiling point and melting point of organic compounds.
BP208P.4	Construct molecular models of compounds using atomic model set
BIOCHEMISTRY - PRACTICAL(BP209P)	
BP209P.1	Detect and identify proteins, amino acids and carbohydrates by various qualitative as well as quantitative tests
BP209P.2	Separate, identify and characterize proteins from various samples like egg, milk, etc and understand principle behind the technique
BP209P.3	Demonstrate action of salivary amylase on starch
BP209P.4	Perform quantitative analysis of reducing sugars and proteins, and qualitative analysis of urine for abnormal constituents

COMPUTER APPLICATIONS IN PHARMACY - PRACTICAL (BP210P)

BP210P.1	Describe how to create a database in MS Access
BP210P.2	Explain how to design a form in MS Access
BP210P.3	Introduction to MS word, MS excel, MS power point etc.
BP210P.4	Discuss Drug information storage and retrieval using MS Access

C.O NUMBER	COURSE OUTCOME
COURSE OF STUDY FOR SEMESTER III (II B.PHARMACY I SEMESTER)	
PHARMACEUTICAL ORGANIC CHEMISTRY II (BP301T)	
BP301T.1	Write the structure, name and the type of isomerism of the organic compound
BP301T.2	Explain the reaction, name the reaction and orientation of reactions
BP301T.3	Account for reactivity/stability of compounds,
BP301T.4	Prepare organic compounds
BP301T.5	Discuss about the polynuclear hydrocarbons
PHYSICAL PHARMACEUTICS I (BP302T)	
BP302T.1	Understand various physicochemical properties of drug molecules in the designing the dosage forms
BP302T.2	Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations
BP302T.3	Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.
BP302T.4	Explain about P ^H buffers and Isotonic solutions
BP302T.5	Describe Complexation and protein binding
PHARMACEUTICAL MICROBIOLOGY (BP303T)	
BP303T.1	Understand methods of identification, cultivation and preservation of various microorganisms
BP303T.2	Explain the importance and implementation of sterilization in pharmaceutical processing and industry
BP303T.3	Learn sterility testing of pharmaceutical products.
BP303T.4	Carried out microbiological standardization of Pharmaceuticals.
BP303T.5	Describe the cell culture technology and its applications in pharmaceutical industries.
PHARMACEUTICAL ENGINEERING (BP304T)	
BP304T.1	Know various unit operations used in Pharmaceutical industries.
BP304T.2	Understand the material handling techniques.
BP304T.3	Perform various processes involved in pharmaceutical manufacturing process.
BP304T.4	Carry out various test to prevent environmental pollution.
BP304T.5	Appreciate and comprehend significance of plant lay out design for optimum use of resources.

PHARMACEUTICAL ORGANIC CHEMISTRY II LAB (BP305P)	
BP305P.1	Understand the procedures for preparation of medicinal compounds
BP305P.2	Handling of various instruments (melting point, Boiling Point)
BP305P.3	Able to Carry out purification methods
BP305P.4	Determination of oil values
PHYSICAL PHARMACEUTICS I LAB (BP306P)	
BP306P.1	Explain solubility of drug at different temperatures and to interpret scientific data, represent the data in a tabular and/or graphical form.
BP306P.2	Determine the effect of temperature, pH, solvent, co-solvent on solubility
BP306P.3	Calculate critical solution temperature & effect of addition of electrolyte on CST of Phenol-water system, solubility, partition coefficient, molecular weight, heat of solution of given compound
BP306P.4	Identification of stability constant and donor acceptor ratio of Cupric-Glycine complex by PH titration method
PHARMACEUTICAL MICROBIOLOGY LAB (BP307P)	
BP307P.1	Study of different equipments and processing used in experimental microbiology
BP307P.2	Different methods of Sterilization used in microbiology and pharmaceutical industry
BP307P.3	Describe different methods for preparation of culture and sub culture
BP307P.4	Sterility testing of pharmaceutical products and microbiological standardization of pharmaceuticals
PHARMACEUTICAL ENGINEERING LAB (BP308P)	
BP308P.1	Define drying and classify different types of dryers
BP308P.2	Emphasize principles, mechanisms and theories of different unit operations.
BP308P.3	Describe types of distillation, their mechanisms with appropriate diagrams.
BP308P.4	Demonstration of colloid mill, planetary mixer, fluidized bed dryer, freeze dryer and such other major equipment

C.O NUMBER	COURSE OUTCOME
COURSE OF STUDY FOR SEMESTER IV (II B.PHARMACY II SEMESTER)	
PHARMACEUTICAL ORGANIC CHEMISTRY III (BP401T)	
BP401T.1	Understand the methods of preparation and properties of organic compounds
BP401T.2	Explain the stereo chemical aspects of organic compounds and stereo chemical reactions
BP401T.3	Know the medicinal uses and other applications of organic compounds
BP401T.4	Describe about hetero cyclic compounds
BP401T.5	Discuss the Synthesis and medicinal uses of Pyrimidine, Purine, azepines and their derivatives
MEDICINAL CHEMISTRY I (BP402T)	
BP402T.1	Understand the chemistry of drugs with respect to their pharmacological activity
BP402T.2	Explain the drug metabolic pathways, adverse effect and therapeutic value of drugs
BP402T.3	Know the Structural Activity Relationship (SAR) of different class of drugs
BP402T.4	Write the mechanism involved in chemical synthesis of drugs
BP402T.5	Describe about the Cholinergic neurotransmitters and there drugs
PHYSICAL PHARMACEUTICS II (BP403T)	
BP403T.1	Understand various physicochemical properties of drug molecules in the designing the dosage forms
BP403T.2	Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations
BP403T.3	Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.
BP403T.4	Explain the rheological properties of emulsions and emulsion formulation by HLB method
BP403T.5	Discuss about micrometric and Drug Stability
PHARMACOLOGY I (BP404T)	
BP404T.1	Know basics of pharmacology like history, scope, general principles & Pharmacokinetics, mechanism of action of drugs, Receptors, drug discovery, preclinical & clinical trials.
BP404T.2	Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels.
BP404T.3	Apply the basic pharmacological knowledge in the prevention and treatment of various diseases.
BP404T.4	Understand the mechanisms and pharmacological actions of different categories of drugs
BP404T.5	Describe the physiology and pharmacology of neurotransmitters and their roles.

PHARMACOGNOSY AND PHYTOCHEMISTRY I (BP405T)	
BP405T.1	Know the techniques in the cultivation and production of crude drugs
BP405T.2	Explain the crude drugs, their uses and chemical nature
BP405T.3	Discuss the evaluation techniques for the herbal drugs
BP405T.4	Carry out the microscopic and morphological evaluation of crude drugs
BP405T.5	Study the biological source, chemical nature and uses of drugs of natural origin
MEDICINAL CHEMISTRY I LAB (BP406P)	
BP406P.1	Synthesize medicinal compounds
BP406P.2	Estimation of partition coefficient of drugs
BP406P.3	Analyse the purity of drug.
BP406P.4	Discuss the assays of various drugs
PHYSICAL PHARMACEUTICS II LAB (BP407P)	
BP407P.1	Evaluate surface tension, viscosity, specific surface area, particle size distribution of given material
BP407P.2	Develop skills and techniques those are parts of pharmaceutical procedures through the actual use of equipment and instruments. Clarify theoretical concepts learned in Physical Pharmaceutics-II
BP407P.3	Interpret scientific data, represent the data in a tabular and/or graphical form
BP407P.4	Determination of reaction rate constant first order and second order kinetics.
PHARMACOLOGY I LAB (BP408P)	
BP408P.1	Understand the pharmacological actions of different categories of drugs
BP408P.2	Observe the effect of drugs on animals by simulated experiments
BP408P.3	Study of commonly used instruments in experimental pharmacology. Introduction to CPCSEA guidelines and OECD guidelines.
BP408P.4	Know the stereotype and anti-catatonic activity of drugs on rats/mice
PHARMACOGNOSY AND PHYTOCHEMISTRY I LAB (BP409P)	
BP409P.1	Analysis of crude drugs by through chemical testing and extractive value.
BP409P.2	Determination of microscopic and macroscopic characters of crude drugs.
BP409P.3	Identification of the purity, identity and swelling index of certain crude drugs
BP409P.4	Discuss of swelling index and foaming

C.O NUMBER	COURSE OUTCOME
COURSE OF STUDY FOR SEMESTER V (III B.PHARMACY I SEMESTER)	
MEDICINAL CHEMISTRY II (BP501T)	
BP501T.1	Discuss the chemistry of drugs with respect to their pharmacological activity
BP501T.2	Explain the drug metabolic pathways, adverse effect and therapeutic value of drugs
BP501T.3	Know the Structural Activity Relationship of different class of drugs
BP501T.4	Study the chemical synthesis of selected drugs
BP501T.5	Understand the structure, MOA, SAR, synthesis, uses, and properties of different classes of drugs.
INDUSTRIAL PHARMACY I (BP502T)	
BP502T.1	Know the various pharmaceutical dosage forms and their manufacturing techniques.
BP502T.2	Understand various considerations in development of pharmaceutical dosage forms
BP502T.3	Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality
BP502T.4	Discuss the Materials used for packaging of pharmaceutical products, factors influencing choice of containers, legal and official requirements for containers
BP502T.5	Explain about the Pharmaceutical Aerosols
PHARMACOLOGY II (BP503T)	
BP503T.1	Understand the mechanism of drug action and its relevance in the treatment of different diseases
BP503T.2	Demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments
BP503T.3	Discuss the various receptor actions using isolated tissue preparation
BP503T.4	Appreciate correlation of pharmacology with related medical sciences
BP503T.5	Explain about the Bioassay of insulin, oxytocin, vasopressin, ACTH, D-tubocurarine, digitalis, histamine and 5-HT.
PHARMACOGNOSY AND PHYTOCHEMISTRY II (BP504T)	
BP504T.1	Know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents
BP504T.2	Understand the preparation and development of herbal formulation.
BP504T.3	Explain the herbal drug interactions
BP504T.4	Discuss the isolation and identification of phytoconstituents
BP504T.5	Explain the application of latest techniques like Spectroscopy, chromatography and electrophoresis in the isolation.

PHARMACEUTICAL JURISPRUDENCE (BP505T)	
BP505T.1	Understand the Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals.
BP505T.2	Explain the Various Indian pharmaceutical Acts and Laws
BP505T.3	Discuss the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals
BP505T.4	Describe the code of ethics during the pharmaceutical practice
BP505T.5	Summarize the concepts of Intellectual Property Rights (IPR)
INDUSTRIAL PHARMACY-I(BP506P)	
BP506P.1	Evaluation paracetamol, aspirin tablets
BP506P.2	Preparation of film coating tablets/granules
BP506P.3	Formulation of injections
BP506P.4	Ointments and creams preparation
PHARMACOLOGY II (BP507P)	
BP507P.1	Effect of drugs on different organs of frog and dog
BP507P.2	Bioassay of histamine, oxytocin, serotonin, acetylcholine
BP507P.3	Determination of PA ₂ and PD ₂ values of prazosin
BP507P.4	Know the anti-inflammatory and analgesic activity of drugs
PHARMACOGNOSY AND PHYTOCHEMISTRY II (BP508P)	
BP508P.1	Morphology, histology and powder characteristics, extraction and detection of: cinchona, cinnamon, Senna, clove, ephedra, fennel and coriander
BP508P.2	Exercise involving isolation & detection of active principles of caffeine, diosgenin, atropine
BP508P.3	Separation of sugars by paper chromatography
BP508P.4	TLC, Distillation of volatile oils

C.O NUMBER	COURSE OUTCOME
COURSE OF STUDY FOR SEMESTER VI (III B.PHARMACY II SEMESTER)	
MEDICINAL CHEMISTRY III (BP601T)	
BP601T.1	Understand the importance of drug design and different techniques of drug design.
BP601T.2	Explain the chemistry of different category drugs with respect to their biological activity
BP601T.3	Know the metabolism, adverse effects and therapeutic value of drugs
BP601T.4	Discuss the classification and SAR of drugs.
BP601T.5	Describe about Physicochemical parameters used in QSAR and Understand combinatorial chemistry
PHARMACOLOGY III (BP602T)	
BP602T.1	Understand the mechanism of drug action and its relevance in the treatment of different infectious diseases
BP602T.2	Comprehend the principles of toxicology and treatment of various poisonings
BP602T.3	Appreciate correlation of pharmacology with related medical sciences
BP602T.4	Discuss the importance of chemotherapy
BP602T.5	Explain about the chronopharmacology
HERBAL DRUG TECHNOLOGY (BP603T)	
BP603T.1	Understand raw material as source of herbal drugs from cultivation to herbal drug product
BP603T.2	Know the WHO and ICH guidelines for evaluation of herbal drugs
BP603T.3	Discuss about the herbal cosmetics, natural sweeteners, nutraceuticals
BP603T.4	Summarize the patenting and regulatory requirements for herbal drugs
BP603T.5	Describe the schedules and Good manufacturing practice of Indian system of medicine
BIOPHARMACEUTICS AND PHARMACOKINETICS (BP604T)	
BP604T.1	Know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals
BP604T.2	Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination
BP604T.3	Explain the concepts of bioavailability and bioequivalence of drug products and their significance.
BP604T.4	Understand various pharmacokinetic parameters, their significance & applications
BP604T.5	Discuss the Non-linear Pharmacokinetics and about the Michaelis-menton method
PHARMACEUTICAL BIOTECHNOLOGY (BP605T)	

BP605T.1	Understanding the importance of Immobilized enzymes in Pharmaceutical Industries
BP605T.2	Discuss about the Genetic engineering applications in relation to production of pharmaceuticals
BP605T.3	Applications of Monoclonal antibodies in Pharmaceutical Industries
BP605T.4	Acquire the knowledge in detail about the design of bioreactor, various methods of fermentation and production of penicillin vitamin B12 citric acid, glutamic acid and griseofulvin
BP605T.5	Explain about the Immunoblotting techniques like ELISA, Western blotting and Southern blotting
QUALITY ASSURANCES (BP606T)	
BP606T.1	Explain the cGMP aspects in a pharmaceutical industry
BP606T.2	Appreciate the importance of documentation
BP606T.3	Understand the scope of quality certifications applicable to pharmaceutical industries
BP606T.4	Know the responsibilities of QA & QC departments
BP606T.5	Discuss about the Calibration and Validation
MEDICINAL CHEMISTRY III (BP607P)	
BP607P.1	Drugs and intermediates like chlorobutanol, tolbutamide, hexamine preparation
BP607P.2	Assays of drugs like isonicotinic acid hydrazide, chloroquine, metronidazole, dapsone
BP607P.3	Determination of physicochemical properties such as log P, clog P, MR, MW, Hydrogen bonds etc using drug design software.
BP607P.4	Preparation of medicinally important drugs and intermediates
PHARMACOLOGY III (BP608P)	
BP608P.1	Dose calculation in pharmaceutical experiments
BP608P.2	Study of anti-ulcer activity, anti-allergic activity
BP608P.3	Effects of agonists, antagonist, saline purgatives, serum biochemical parameters
BP608P.4	Test for pyrogens
HERBAL DRUG TECHNOLOGY (BP609P)	
BP609P.1	Perform preliminary phytochemical screening of crude drugs
BP609P.2	Evaluation of excipients of natural origin
BP609P.3	Incorporation of prepared and standardized extracts in cosmetic formulation, syrups, tablets
BP609P.4	Determination of aldehyde, phenol, total alkaloids contents

C.O NUMBER	COURSE OUTCOME
COURSE OF STUDY FOR SEMESTER VII (IV B.PHARMACY I SEMESTER)	
INSTRUMENTAL METHODS OF ANALYSIS (BP701T)	
BP701T.1	Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis
BP701T.2	Discuss the chromatographic separation and analysis of drugs.
BP701T.3	Perform quantitative & qualitative analysis of drugs using various analytical instruments.
BP701T.4	Explain about the working principal and applications of HPLC
BP701T.5	Describe about various Spectroscopy methods
INDUSTRIAL PHARMACY II (BP702T)	
BP702T.1	Know the process of pilot plant and scale up of pharmaceutical dosage forms
BP702T.2	Understand the process of technology transfer from lab scale to commercial batch
BP702T.3	Discuss different Laws and Acts that regulate pharmaceutical industry
BP702T.4	Explain the approval process and regulatory requirements for drug products
BP702T.5	Differentiate the Indian Regulatory Requirements
PHARMACY PRACTICE (BP703T)	
BP703T.1	Know various drug distribution methods in a hospital
BP703T.2	Extend the pharmacy stores management and inventory control
BP703T.3	Monitor drug therapy of patient through medication chart review and clinical review
BP703T.4	Obtain medication history interview and counsel the patients
BP703T.5	Identify drug related problems
NOVEL DRUG DELIVERY SYSTEM (BP704T)	
BP704T.1	Understand various approaches for development of novel drug delivery systems.
BP704T.2	Explain about the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation
BP704T.3	Discuss about the Targeted drug delivery system
BP704T.4	Importance of Intrauterine Drug Delivery Systems
BP704T.5	Appreciate the importance of Implantable

INSTRUMENTAL METHODS OF ANALYSIS (BP705P)	
BP705P.1	Determination of absorption maxima and effect of solvent on absorption
BP705P.2	Estimation of dextrose and sulphanilamide by calorimetry
BP705P.3	Sodium and potassium determination by flame photometry
BP705P.4	Separation of amino acids and sugars by paper and thin layered chromatography
PRACTICE SCHOOL (BP706PS)	
BP706PS.1	Carryout advanced experimental procedures in the drug development disciplines
BP706PS.2	Explain the concepts of advanced drug design and development concepts
BP706PS.3	Describe the advances in the area of pharmacology, biotechnology and drug delivery systems
BP706PS.4	Application of knowledge gained in isolation, identification
BP706PS.5	Discuss about the formulation, manufacturing and evaluation of pharmaceuticals

C.O NUMBER	COURSE OUTCOME
COURSE OF STUDY FOR SEMESTER VIII (IV B.PHARMACY II SEMESTER)	
BIOSTATISTICS AND RESEARCH METHODOLOGY (BP801T)	
BP801T.1	Know the operation of M.S. Excel, SPSS, R and MINITAB® , DoE (Design of Experiment)
BP801T.2	Explain the various statistical techniques to solve statistical problems
BP801T.3	Appreciate statistical techniques in solving the problems.
BP801T.4	Discuss the different types of graphs and designing methodology
BP801T.5	Describe about the factorial designs and also response surface methodology
SOCIAL AND PREVENTIVE PHARMACY(BP802T)	
BP802T.1	Acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide.
BP802T.2	Have a critical way of thinking based on current health care development.
BP802T.3	Evaluate alternative ways of solving problems related to health and pharmaceutical issues
BP802T.4	Understand about the National health programs, its objectives, functioning and outcomes
BP802T.5	Discuss about the community services in rural urban and school health
PHARMACOVIGILANCE (BP805ET)	
BP805ET.1	Explain the importance of drug safety monitoring
BP805ET.2	Discuss the History and development of pharmacovigilance
BP805ET.3	Understand about the National and international scenario of pharmacovigilance
BP805ET.4	Differentiate Dictionaries, coding and terminologies used in pharmacovigilance
BP805ET.5	Describe about the Detection of new adverse drug reactions and their assessment
ADVANCED INSTRUMENTATION TECHNIQUES (BP811ET)	
BP811ET.1	Understand the advanced instruments used and its applications in drug analysis
BP811ET.2	Explain the chromatographic separation and analysis of drugs
BP811ET.3	Discuss the calibration of various analytical instruments
BP811ET.4	Know analysis of drugs using various analytical instruments

BP811ET.5	Differentiate between hyphenated techniques
PROJECT WORK (BP813PW)	
BP813PW.1	Study on multidisciplinary areas related to pharmacy profession.
BP813PW.2	Develop required skills for technical presentation.
BP813PW.3	Concentrate on specific topic in scientific and pharmacy fields
BP813PW.4	Gain more advanced knowledge of the research and manuscript writing
BP813PW.5	Describe new trends among group of students and faculties