Dr. Rajendra N. Thite
MA (Sociology, Indology), MBA, Ph.D.
President

Dhananjay N.Thite
B.E.(Computer)
Secretary

Dwarkadas Baheti
M.Pharm, Ph.D.
Principal

Late Bapusaheb Thite
Ex. State Home Minister (Mah.)
Ex.Member of Parliament (Baramati)
Founder President

2.6 - Student Performance and Learning Outcomes

2.6.1 - Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution.

Sitabai Thite College of Pharmacy ID No. PU/PN/Pharma/174/2001 Shirur, Dist. Pune-412 210

Principal
PRINCIPAL
Sitabai Thite College of Pharmacy
Shirur (Ghodnadi), Dist. Pune

STCOP

Subjectwise Course Outcome - [B. Pharmacy - 2023-24]

Semester V 23-24	
Pharmacognosy & Phytochemistry-II [Practical | Regular]	
CO ID.	**Course Outcome**
CO331.1	To understand the morphological & histological parameters and also various powder characteristics and extraction of various crude drugs
CO331.2	To know the various chemical parameters for identification of various crude drugs
CO331.3	To carryout isolation and identification of phytoconstituents
CO331.4	To understand how phytoconstituents are identified by TLC
Pharmacology-II [Practical | Regular]	
CO ID.	**Course Outcome**
C329.1	Demonstrate isolation of different organs/tissues from the laboratory animals bysimulated experiments
C329.2	Demonstrate the various receptor actions using isolated tissue preparation
C329.3	They would have observed the effect of drugs on animals by simulated experiments
C329.4	They would have understood the signal transduction mechanism of variousreceptors
C329.5	They would have understood the experiments related with bioassay.They also have understood calculations of determination of PA2 and PD2 values
C325 Medicinal Chemistry II [Theory | Regular]	
CO ID.	**Course Outcome**
C325.1	To understand the chemistry and mechanism of action of drugs.
C325.2	Understand the Therapeutic uses and adverse effect, and toxic effects of different category of drugs.
C325.3	To know the relation between structure of drug and its biological activity (i.e. Structural activity relationship: SAR).
C325.4	To study the synthesis strategy of selected drugs.
C326 Industrial Pharmacy-I [Theory | Regular]	
CO ID.	**Course Outcome**
C326.1	Understand the basic principles of formulation and development of various dosage forms along with its advantages and disadvantages over other dosage forms
C326.2	To understand the various pharmaceutical dosage forms and their manufacturing techniques.
C326.3	T o Gain in-depth knowledge in Tablet, Capsule, Monophasic and biphasic dosage form, manufacturing and Evaluation. Understand the problems and remedies that are involved in it.
C326.4	Gather an in depth knowledge of various excipients that are used in preparing a dosage form
C326.5	Understand the basic principles of formulation and development of Parenteral and cosmetic dosage form.
C326.6	To understand the formulation aspect of semisolid dosage forms and evaluate them for their quality
C326.7	Understand preformulation techniques involved in various dosage form
C327 Industrial Pharmacy-I [Practical | Regular]	
CO ID.	**Course Outcome**
C327.1	Able to handle all equipments related to conventional dosage form preparation and its evaluation.
C327.2	Able to understand formulation concept of different types of tablets , capsule,creams and injections.

C327.3	To be able to prepare labels to suit regulatory requirements.
C327.4	To be able to select the suitable packaging material (container-closure) for the preparation.
C327.5	Able to perform pharmaceutical calculations required to determine evaluation parameters.
C328 Pharmacology II [Theory | Regular]	
CO ID.	**Course Outcome**
C328.1	Students would have understood the pharmacological actions of different categories of drugs
C328.2	Appreciate correlation of pharmacology with related medical sciences.
C328.3	They would have studied in detailed about mechanism of drug action at organ system
C328.4	They would have understood the application of basic pharmacological knowledge in the prevention and treatment of various diseases.
C328.5	They would got an idea about correlation of pharmacology with other bio medical sciences.
C330 Pharmacognosy & Phytochemistry II [Theory | Regular]	
CO ID.	**Course Outcome**
CO330.4	To know the modern extraction techniques of the herbal drugs and phytoconstituents.
CO330.2	To understand the production of of Phytoconstituents.
CO330.1	To understand the metabolic pathways in formation of secondary metabolites and application of biogenetic studies.
CO330.3	To carryout isolation and identification of phytoconstituents
CO330.5	To know the characterization and identification of the herbal drugs and phytoconstituents
C332 Pharmaceutical Jurisprudence [Theory | Regular]	
CO ID.	**Course Outcome**
CO332.1	To apply the knowledge of the pharmaceutical legislation and their implications in the development and marketing of pharmaceuticals
CO332.2	To understand the various pharmaceutical acts and laws
CO332.3	To discuss the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals.
CO332.4	To know the code of ethics during the pharmaceutical practice.
Semester VII	
BP704T Novel Drug Delivery System [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	The need, concept, design and evaluation of various customized, Novel Drug Delivery Systems
CO2	Identify various approaches for controlled release formulations based on diffusion, dissolutionand ion exchange principles.
CO3	Describe and select polymer for controlled release formulations
CO4	Understand mucoadhesion, microencapsulation and osmotic system
CO5	Apply the concept of nanotechnology for targeted drug delivery
CO6	Understanding concept of transdermal drug delivery, gastro retentive and nasopulmonary drug delivery systems
CO7	Explain the concept behind Opthalmic drug delivery and Intrauterine drug delivery
C425 Instrumental Methods of Analysis- Theory [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Illustrate the interaction of matter with electromagnetic radiations and justify its applications in drug analysis
CO2	Classify the chromatographic separation methods and choose appropriate technique for analysis of drugs.
CO3	Evaluate analytical technique in the context of qualitative and quantitative analysis.

CO4	Understand analytical data and its interpretation.
CO5	Appraise general characteristics of analytical method used in drug analysis.
CO6	Employ the knowledge of sophisticated instrumental techniques in advance pharmaceutical research.
C426 Instrumental Methods of Analysis [Practical | Regular]	
CO ID.	**Course Outcome**
CO1	Understand the operation and calibration of analytical instrument for separation/isolation and assay of APIs and formulation as per pharmacopoeial standards.
CO2	Know the expression of various concentrations, dilutions and its preparations
CO3	Select an optimum analytical techniques for the analysis of given known and unknown sample.
CO4	Take appropriate safety measures while handling the instruments.
CO5	Understand the interpretation of data obtained through experimentation and report the result as per the regulatory requirments.
CO6	Employ the knowledge of sophisticated instrumental techniques in advance pharmaceutical research.
C427 Industrial Pharmacy-II [Theory | Regular]	
CO ID.	**Course Outcome**
CO427.1	To Know the process of pilot plant and scale up of pharmaceutical dosage forms
CO427.2	To Understand the process of technology transfer from lab scale to commercial batch.
CO427.3	To Know different Laws and Acts that regulate pharmaceutical industry
CO427.4	To Understand the approval process and regulatory requirements for drug products.
C428 Pharmacy Practice [Theory | Regular]	
CO ID.	**Course Outcome**
C428.1	To know various drug distribution methods in a hospital
C428.2	To monitor drug therapy of patient through medication chart review and clinical review and obtain medication history interview and counsel the patients.
C428.3	To detect and assess adverse drug reactions, interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states
C428.4	To do patient counseling in community pharmacy
C428.5	To understand the concept of Rational drug therapy
C428.6	To understand the pharmacy stores management and inventory control
Semester 3	
Pharma. Engineering [Theory | Regular]	
CO ID.	**Course Outcome**
C229.1	To know various unit operations used in Pharmaceutical industries
C229.2	To explain the process of heat exchangers, filters, centrifuges, dryers, refrigeration systems etc. required for the manufacturing of various pharmaceutical formulations
C229.3	To analyze the efficiency of equipments of important operations such as filtration, drying and evaporation
C229.4	To appreciate the various preventive methods used for corrosion control in Pharmaceutical industries
C229.5	To explain the significance of construction materials in the designing and operation of equipments
C229.6	To appreciate the various preventive methods used for corrosion control in Pharmaceutical industries
Pharma. Organic Chemistry-II [Practical | Regular]	
CO ID.	**Course Outcome**
C01	Student shall be able to detect the organic compound

C02	Student shall be familiar with laboratory techniques.
C03	Student shall be able to detect analytical constant of oils or fats
C04	Student shall be able to synthesize the organic compound
C05	Student shall be able to Calculate % practical yield of synthesized organic compound
Physical Pharmaceutics I [Practical | Regular]	
CO ID.	Course Outcome
CO226.1	Operate different pharmaceutical laboratory instruments used in determining various physical properties such as surface tension, adsorption and solubility
CO226.2	Calculate critical solution temperature & determine the percentage composition of electrolyte in phenol-water system
CO226.3	Determine the partition coefficient of given compound
CO226.4	To Determine of stability constant and donor acceptor ratio by solubility and pH titration method
CO226.5	To determine the critical micelles concentration of surfactant
CO226.6	To determine thermodynamic parameters by using solubility studies
BP308P Pharma.Engineering [Practical | Regular]	
CO ID.	Course Outcome
CO1	Understand the various unit operations used in Pharmaceuticalindustries.
CO2	Perform various processes involved in pharmaceuticalmanufacturing process.
CO3	To develop rigorous skills for drying of sample in laboratory
C223 Pharmaceutical Organic Chemistry II [Theory | Regular]	
CO ID.	Course Outcome
C01	Student shall be able to write the structure, name of the organic compound
C02	Student shall be able to write the type of isomerism of the organic compoundand
C03	Student shall be able to write the reaction, name the reaction and orientation of reactions
C04	Student shall be able to ccount for reactivity/stability of compounds
C05	Student shall be able to prepare organic compounds
C225 Physical Pharmaceutics-I [Theory | Regular]	
CO ID.	Course Outcome
CO1	Understand the basics of chemical and physical phenomena that govern the in vivo and in vitro actions of pharmaceutical products such as solubility, refractive index, optical rotation, dielectric constant etc.
CO2	Articulate the interrelationships between the physiochemical properties of a drug, its dosage form, route of administration and bioavailability
CO3	To know various gases laws and theories in correlation with formation of aerosols, crystallization & is parameters, colligative properties of non-electrolytic and electrolytic solutions, solubility and distribution phenomenon and apply them in the pharmaceutical practices.
CO4	To understand the various methods for the determination of surface &i interfacial tension of liquids
CO5	To acquire knowledge of the methods of detection of complexes and describe the properties and applications of polymers.
CO6	To analyze the Buffer solution, buffer equations and buffer capacity, isotonicity.
C227 Pharma Microbiology [Theory | Regular]	
CO ID.	Course Outcome
C227.1	Name the equipment used for the sterilization of pharmaceuticals.
C227.2	To study methods of identification, cultivation and preservation of variousMicroorganisms including bacteria, fungi and viruses

C227.3	To identify the causes and basis of microbial spoilage and to know the sources & types of microbial contamination along with microbiological assay
C227.4	To study mechanism of action and effectiveness of various sterilization processes and implementation of sterilization methods in pharmaceutical industry including sterility testing of pharmaceutical products.
C227.5	To study designing of aseptic area and clean area classification
C227.6	To study disinfectants with respect to mechanism of action, its evaluation and to study importance of microbial limit tests
C227.7	To study the cell culture technology and its applications in pharmaceutical industries

C228 Pharma.Microbiology [Practical | Regular]

CO ID.	Course Outcome
CO1	Name the equipment used for the sterilization of pharmaceuticals.
CO3	To study methods of identification, cultivation and preservation of variousMicroorganisms including bacteria, fungi and viruses
CO2	Demonstrate microbiological standardization of pharmaceuticals
CO4	Perform sterility testing of pharmaceutical products.

Semester-I

Pharmaceutical Analysis-I [Theory | Regular]

CO ID.	Course Outcome
C125.1	To study the significance of analytical chemistry to pharmaceutical sciences
C125.2	To understand the basic principles of aqueous acid base and non-aqueous acid base titrations.
C125.3	To understand different terms, types and basic principles of precipitation titration
C125.4	To understand concept and reaction condition for complexation.
C125.5	To understand the difference between precipitation and gravimetric analysis
C125.6	To understand the different terms, types and basic principles of redox titration

Human Anatomy & Physiology-I [Practical | Regular]

CO ID.	Course Outcome
CO1	Describe the anatomical features of the important human tissue under microscopical condition
CO2	Study about the gross structure and function of cell, tissue, skeletal, muscular and cardiovascular system of human body.
CO3	They would have understand the various homeostatic mechanism and their imbalances.
CO4	To identify the different types of bones in human body.
CO5	They would have learnt various techniques like blood group techniques, blood group determination, blood pressure measurement, blood cell counting.

Pharmaceutical Analysis-I [Practical | Regular]

CO ID.	Course Outcome
Course outcome not yet added by the respective faculty.(Priyanka Wanjul)Course outcome not yet added by the respective faculty.(Priyanka Wanjul)Course outcome not yet added by the respective faculty.(Priyanka Wanjul)	

Pharmaceutical Inorganic Chemistry [Practical | Regular]

CO ID.	Course Outcome
C 106.1	To know how to identify impurity present in inorganic compound by limit test
C 106.2	Detection of acidic and basic radicals from inorganic binary mixture by qualitative analysis
C 106.3	To prepare the inorganic compounds
C 106.4	To identify the purity of compound by performing identification tests
C 106.5	To know the standardization of compound

C 106.6	To know the physical/ chemical properties, storage and uses of important inorganic substances used for pharmaceutical purpose
BP101T Human Anatomy and Physiology I [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Recall the basics of the anatomy, physiology and the cell.
CO2	Explain the different types of tissues and importance of the blood.
CO3	Describe the cardiovascular system and lymphatic system.
CO4	Describe the osseous system and digestive system.
BP109P Pharmaceutics-I [Practical | Regular]	
CO ID.	**Course Outcome**
C127.1	Calculate the working formula from the given master formula
C127.2	Formulate the dosage form and dispense in an appropriate container
C127.3	Design the label with the necessary product and patient information
C127.4	Evaluate the organoleptic property for the common dosage form
BP111P Communication Skills [Practical | Regular]	
CO ID.	**Course Outcome**
CO1	To improve the students ability to communicate in oral and written communication
CO2	To revise grammar in the application and communication task
CO3	To emphasize the essential critical components of written effective communication necessary for professional development
CO4	To carry our regular interpersonal communication at workplace by having an adequate understanding of various types of communication
CO5	To become proficient in communication skill pertaining to the production and presentation of message in multiple formats and to comprehend the significance of body language
CO6	To design and develop the skills of of the students in preparing job search artifacts and negotiating their use in group discussion and interviews
C127 Pharmaceutics I [Theory | Regular]	
CO ID.	**Course Outcome**
C127.1	Describe the history of pharmacy, development of pharmacy profession and industry in India
C127.2	Describe various routes of drug administration, concept of dosage forms, unit operations involved in preparation of these dosage forms
C127.3	Understand the professional way of handling the prescription
C127.4	Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations
C127.5	Preparation of various conventional dosage forms
C127.6	Summarize the factors influencing formulation of various dosage form like solution
C129 Pharmaceutical Inorganic Chemistry [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	To provide a better understanding the relevance and significance of Inorganic chemistry to Pharmaceutical sciences.
CO2	Get the knowledge of various Pharmacopoeias currently in use with the contents of official monographs in Pharmacopoeias
CO3	To understand the meaning of impure and pure chemical compound and methods to control the impurity.
CO4	To learn inorganic compounds with its mechanism of action, preparations, properties and uses.
CO5	To know in detail about Radiopharmaceuticals.
CO6	Understand the medicinal and pharmaceutical importance of inorganic compounds.

C131 Communication Skills [Theory | Regular]	
CO ID.	Course Outcome
CO131.1	To acquire the knowledge about greetings, polite expressions, agreements and disagreements.
CO131.2	To identify the concept and components of personality, thereby to apply the acquired knowledge to themselves and to march towards excellence in their respective careers.
CO131.3	To convert the conceptual understanding of communication into everyday practice.
CO131.4	To develop skill in the preparation of scientific/technical report.
CO131.5	To bring out creativity and other talents with proper goal setting so that self- esteem gets enhanced.

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Subjectwise Course Outcome - [B. Pharmacy - 2023-24]

Semester II	
Biochemistry [Theory | Regular]	
CO ID.	**Course Outcome**
C140.1	Understand the catalytic role of enzymes and importance of enzyme in biochemicalprocess.
C140.2	Understand the metabolism of nutrient molecules in physiological and pathologicalconditions.
C140.3	Understand the genetic organization of mammalian genome and functions of DNA in thesynthesis of RNAs and proteins.
C140.4	To understand the concept of bioenergitics and biomolecules
C140.5	To study and understand biomolecules.
Computer Applications in Pharmacy [Theory | Regular]	
CO ID.	**Course Outcome**
C143.1	To know the various types of application of computers in pharmacy
C143.2	To explain bioinformatics and their impact in vaccine discovery.
C143.3	To analyse the different types of databases
C143.4	To create data bases using MS Access, SQL
C143.5	To identify the role of computers for data analysis in the field of preclinical development.
C143.6	To study number system
Democracy Election and Governance [Theory | Regular]	
CO ID.	**Course Outcome**
Course outcome not yet added by the respective faculty.(Dr. Amit Lunkad)	
Computer Applications in Pharmacy [Practical | Regular]	
CO ID.	**Course Outcome**
Course outcome not yet added by the respective faculty.(Priyanka Wanjul)Course outcome not yet added by the respective faculty.(Priyanka Wanjul)Course outcome not yet added by the respective faculty.(Priyanka Wanjul)	
BP 201 T Human Anatomy and Physiology II [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Explain the anatomy and physiology of central nervous system, nerve tracts, reflex action.
CO2	knowing the gastrointestinal tract functions, secretions, digestion and absorption of nutrients and its disorders, role of ATP, creatinine and BMR.
CO3	Understand the lung functions, mechanism of respiration, resuscitation techniques and methods.
CO4	Appreciate the urinary system and its functions, formation urine, role of RAS in kidney and its disorders.
CO5	Understand the reproductive system of male & female, formation sperm and ovum, menstrual cycle, pregnancy, chromosomes, DNA and Protein synthesis, pattern of inheritance.
BP 204 T Pathophysiology [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Describe Basic principles of Cell injury Adaptation and explain the concept of inflammation and repair
CO2	Describe the etiology and pathogenesis of various disorders pertaining to CVS, respiratory and renal system

CO3	classification, etiology and pathogenesis of cancer pertaining to Hematological, endocrine ,GI and nervous system
CO4	Describe the etiology and pathogenesis of disorders related to bones and joints
CO5	Classify and explain the etiology and pathogenesis of cancer
CO6	Describe the etiology and pathogenesis of AIDS, Syphilis, Gonorrhea
BP207 P Human Anatomy and Physiology II [Practical | Regular]	
CO ID.	**Course Outcome**
CO1	Discuss the significance, anatomical and physiological characteristics of the human body.
CO2	Record vital physiological parameters of human subjects and interpret the result.
CO3	Discuss about various nerve and their functions.
CO4	Describe the various homeostatic mechanism and their imbalances.
CO5	Compare and contrast tidal volume and vital capacity.
CO6	Design promotional materials for public health awareness.
C138 Pharmaceutical Organic Chemistry I [Theory | Regular]	
CO ID.	**Course Outcome**
C138.1	Write the structure, name and the type of isomerism of the organic compound
C138.2	Write the reaction, name the reaction and orientation of reactions
C138.3	Account for reactivity/stability of compounds,
C138.4	Identify/confirm the identification of organic compound
C138.5	Explain General methods of preparation and reactions of compounds
C139 Pharmaceutical Organic Chemistry I [Practical | Regular]	
CO ID.	**Course Outcome**
C139.1	Write the structure, name and the type of isomerism of the organic compound
C139.2	Write the reaction, name the reaction and orientation of reactions
C139.3	Account for reactivity/stability of compounds
C139.4	Identify/confirm the identification of organic compound
C139.5	Explain General methods of preparation and reactions of compounds
C141 Biochemistry [Practical | Regular]	
CO ID.	**Course Outcome**
CO141.1	Detect and identify proteins, amino acids and carbohydrates by various qualitative as well as quantitative tests.
CO141.2	Detect and identify abnormal constituents of urine by various qualitative tests.
CO141.3	Detect presence of some serum constituents like creatinine, sugar and total cholesterol and study its significance.
CO141.4	Demonstrate action of salivary amylase on starch and understand denaturation of enzymes along with enzymatic hydrolysis, effect of temperature and substrate concentration
C145 ENVIRONMENTAL SCIENCES [Theory | Regular]	
CO ID.	**Course Outcome**
CO145.1	To Create the awareness about environmental problems among learners.
CO145.2	To Impart basic knowledge about the environment and its allied problems.
CO145.3	To Motivate learner to participate in environment protection and environmentimprovement.
CO145.4	Gain knowledge about environment and ecosystem.

CO145.5	To make aware about problems of environmental pollution, its impact on human and ecosystem and control measures.
Semester IV	
Pharmacology-I [Theory | Regular]	
CO ID.	Course Outcome
C209.1	Describe the basic scientific concepts and principles that serve as the foundational underpinnings of the pharmacological sciences including pharmacokinetics; pharmacodynamics; drug metabolism; and drug-drug interactions
C209.2	Describe the process by which new drugs are discovered, developed, tested and finally approved by the Federal Drug Administration for use in the clinic.
C209.3	explain how fundamental pharmacological properties can influence route of administration, drug action; drug efficacy and potency; drug levels in the body
C209.4	Understand the relative roles of passive diffusion, facilitated diffusion and active transport in, and how physicochemical properties affect, the movement of drugs in the body.
C209.6	Explain the importance of receptors, enzymes and ion channels as drug targets
C209.5	To know in detail about neurotransmitters involved in autonomic nervous system, there synthesis and metabolism
C209.7	To explain various adrenoceptars and cholinoceptars, their subtypes, selective agonist and antagonist
C209.8	To know the agents that stimulates or relaxes skeletal muscle.
Medicinal Chemistry-I [Theory | Regular]	
CO ID.	Course Outcome
CO1	To understand the chemistry of drugs with respect to their pharmacological activity.
CO2	Understand the drug metabolic pathways, adverse effect and therapeutic value of Drugs.
CO3	Know the Structural Activity Relationship (SAR) of different class of drugs.
CO4	Know the chemical synthesis of some drugs.
BP403T Physical Pharmaceutics-II [Theory | Regular]	
CO ID.	Course Outcome
CO1	State the physico-chemical properties of drug molecules, pH, and solubility
CO2	Explain the role of surfactants, interfacial phenomenon and thermodynamics
CO3	Describe the flow behavior of fluids and concept of complexation
CO4	Analyze the chemical stability tests of various drug products
CO5	Understand of physicochemical properties of drugs including solubility, distribution,adsorption, and stability
CO6	Understand of physico-chemical properties of drugs including solubility, distribution,adsorption, and stability
CO7	Have basic knowledge of pharmaceutical suspensions and colloids
CO8	Principles such as lyophilization, aerosols, condensed systems, and phase diagram
BP405T Pharmacognosy & Phytochemistry-I [Theory | Regular]	
CO ID.	Course Outcome
C210.1	To understand the meaning & significance of Pharmacognosy, Pharmacognostic parameters & classification of Crude drugs
C210.2	To know and understand the evaluation techniques for the herbal drugs.
C210.3	To know the techniques in the cultivation and production of crude drugs. To comprehend & explain various factors affecting on level of secondary metabolites, how these can be minimized to ensure quality in raw material, effect of post harvesting manipulations, and changes during storage etc & methods to control these modification.
C210.4	To understand and explain the applications of plant tissue culture for secondary metabolite production.
C210.5	To understand and explain morphology and anatomy of different plant parts.
C210.6	To Comprehend & explain basics of secondary metabolites.

C210.7	To Comprehend & explain primary metabolites comprehensively from source to their Pharmaceutical & industrial applications.
BP406P Medicinal Chemistry I [Practical | Regular]	
CO ID.	Course Outcome
CO1	To understand and perform synthesis with reaction monitoring by TLC
CO2	To purify compound by recrystallisation.
CO3	To understand and execute stereomodel construction
CO4	To obtain data through MP, BP, TLC etc
CO5	To study purification technique of synthesized compound by column chromatography
CO6	To determine partition coefficient and ionization constant
BP407P Physical Pharmaceutics II [Practical | Regular]	
CO ID.	Course Outcome
CO1	Evaluate surface tension, viscosity, specific surface area, particle size distribution of given material
CO2	Calculate Cloud point, critical micelle concentration and HLB value of given surfactant
CO3	Calculate energy of activation of acid hydrolysis, order of given reaction, relative strength of two acids
CO4	Find out composition of binary mixture by viscosity method
BP409P Pharmacognosy and Phytochemistry I [Practical | Regular]	
CO ID.	Course Outcome
CO1	Explain correct use of various equipment in Pharmacognosy laboratory
CO2	Handle simple /compound/digital microscope in technically correct way
CO3	Decide on staining reagents required for specific part of plant.
CO4	Explain significance of qualitative ,quantitative microscopy & it social relevance.
CO5	Analysis of the unorganized crude as per regulatory guidelines.
C231 Pharmaceutical Organic Chemistry III [Theory | Regular]	
CO ID.	Course Outcome
C01	Understand the methods of preparation and properties of organic compounds.
CO2	Explain the stereochemical aspects of organic compounds and stereo chemical reactions.
C03	Know the medicinal uses and other applications of organic compounds
C04	Understand various molecular representations and their interconversions
C05	Explain mechanism and applications of rearrangement of electron deficient & electron rich systems.
C237 Pharmacology I [Practical | Regular]	
CO ID.	Course Outcome
C237.1	To learn about basic instruments, common laboratory animals used inexperimental pharmacology and to organize animal house as per theCPCSEA guidelines.
C237.2	To demonstrate the common laboratory techniques like routes of administration, blood withdrawal, anesthetics and euthanasia used for animal studies
C237.3	To interpret the effects of various drugs on rabbit eye and ciliary motility offrog oesophagus in correlation with humans
C237.4	To analyse the effect of drugs acting as enzyme inducers, skeletal musclerelaxants and affecting locomotor activity in laboratory animals
C237.5	To evaluate the stereotype and anticatatonic activity of drugs in rats/mice
C237.6	To predict various screening models for anticonvulsant and anxiolyticactivity

C237.7	Learn about mechanism of action of drugs
Semester VI	
Herbal Drug Technology [Theory | Regular]	
CO ID.	Course Outcome
C337.1	To understand raw material as source of herbal drugs from cultivation to herbal drugproduct
C337.4	To know the WHO and ICH guidelines for evaluation of herbal drugs
C337.2	To Understand the Indian System of Medicine
C337.3	To know the herbal cosmetics, natural sweeteners, nutraceuticals
C337.5	To Understand patenting of herbal drugs
C337.6	To Understand the basic of Neutraceuticals along with its uses nside effects in various disease
Quality Assurance [Theory | Regular]	
CO ID.	Course Outcome
C606.1	Understand the responsibilities of QA & QC departments
C606.2	Understand the cGMP aspects in a pharmaceutical industry
C606.3	Appreciate the importance of documentation
C606.4	Understand the scope of quality certifications applicable to pharmaceutical industries
Herbal Drug Technology [Practical | Regular]	
CO ID.	Course Outcome
CO338.1	To prepare, label & evaluate herbal/ TSM formulations
CO338.3	To perform preliminary phytochemical screening of crude drugs
CO338.4	To Determine the alcohol content of Asava and Arista preparation
CO338.2	To prepared and standardized extract in formulations and their evaluation as per Pharmacopoeial requirements
CO338.5	To study the Monograph analysis of herbal drugs from recent Pharmacopoeias
CO338.6	To perform quantitative determination of phytoconstituents
608P Pharmacology-III [Practical | Regular]	
CO ID.	Course Outcome
CO1	Students were able to calculate the dose for pharmacological experiments and translate to human dose using standard calculation methods.
CO2	Screening the drugs for gastrointestinal efficacy, hypo-glycemic effect, anti-allergic effect and able to correlate the clinical, biochemical parameters with disease.
CO3	Able to understand OECD guidelines and interpret the acute toxicity and other related acute studies for safety evaluation and able to interpret the pharmacokinetic profile of the given drug.
CO4	Able to apply proper bio-statistical methods for data interpretation and calculations.
BP 602 T Pharmacology-III [Theory | Regular]	
CO ID.	Course Outcome
CO1	Describe pharmacology of drugs acting on respiratory system.
CO2	Describe pharmacology of drugs acting on GI system.
CO3	Describe pharmacology of anticancer agents.
CO4	Explain chemotherapy of specific infection and infestations.
CO5	Describe management of toxicity by barbiturates, benzodiapines, alcohol intoxication

CO6	Describe management of toxicity by morphine, organo phosphosphorus compounds, lead, mercury and arsenic poisoning.
CO7	Explain the pharmacology of immune stimulants and Immuno suppressants.
BP605T Pharmaceutical Biotechnology [Theory | Regular]	
CO ID.	**Course Outcome**
CO1	Students will understand the various techniques used in modern biotechnology.
CO2	Students can design research strategy with step-by-step instructions to address a research problem
CO3	Students can able to provide examples of current applications of biotechnology and advances in the different areas like medical, microbial, environmental, bioremediation, agricultural, plant, animal, and forensic
CO4	Students can explain the concept and application of monoclonal antibody technology
CO5	Students can demonstrate and Provide examples on how to use microbes and mammalian cells for the production of pharmaceutical products
C333 Medicinal Chemistry III [Theory | Regular]	
CO ID.	**Course Outcome**
CO333.1	Understand the importance of drug design and different techniques of drug design
CO333.2	Understand the definition, classification, chemistry of drugs with respect to their biological activity
CO333.3	Know the classification, metabolism, adverse effects and therapeutic value of drugs
CO333.4	Know the importance of SAR of drugs
CO333.5	To know about drug design
C334 Medicinal Chemistry-III [Practical | Regular]	
CO ID.	**Course Outcome**
CO334.1	Make correct use of various equipment and take safety measures while working in Medicinal chemistry laboratory
CO334.2	To know the purification of synthesized compounds by re-crystallization
CO334.3	To know synthesis, recrystallisation and understand reaction mechanisms involved in synthesis of medicinally important organic compounds
CO334.4	To determine Physicochemical parameters of compound.
CO334.5	To learn drawing of structure of medicinal compound by using Chem-draw software.
CO329 Biopharmaceutics & Pharmacokinetics [Theory | Regular]	
CO ID.	**Course Outcome**
CO339.1	To express the concept of Absorption and Distribution.
CO339.2	To understand the concept of Metabolism and Excretion.
CO339.3	To integrate the study of Bioavailability and Bioequivalence of Drug product.
CO339.4	To assess various pharmacokinetics parameters and their significance.
CO339.5	To facilitate the various Multicompartment models.
CO339.6	To understand about Non-linear pharmacokinetics.
Semester VIII	
BP 801 T Biostatistics and Research Methodology(BP801T) [Theory | Regular]	
CO ID.	**Course Outcome**
C430.1	Upon completion of the course the student shall be able to Know the various statistical techniques to solve statistical problems
C430.2	To Appreciate statistical techniques in solving the problems.
C430.3	To Know the operation of M.S. Excel, SPSS, R and MINITAB

C430.4	To know the basic concept of research methodology and implement it in their project work
BP811ET Advanced Instrumentation Techniques(BP811ET) [Theory | Elective]	
CO ID.	Course Outcome
CO1	Express the principle of the advanced instruments used and justify its applications in drug analysis
CO2	Understand the principles of analytical techniques and its application in analysis of drugs
CO3	Understand analytical data and its interpretation.
CO4	Explain the importance and methods for the calibration of various analyticalinstruments
CO5	Formulate and justify techniques for the analysis of drugs using various analyticalinstruments.
CO6	Employ the knowledge of sophisticated instrumental techniques in advance pharmaceutical research
C432 Social and Preventive Pharmacy(BP802T) [Theory | Regular]	
CO ID.	Course Outcome
CO432.1	To review Concept of Social and health education.
CO432.2	To examine general principles of prevention and control of various viral diseases.
CO432.3	To assess General principles of prevention and control of various lifestyle related and other diseases.
CO432.4	To facilitate information about various National health programs.
CO432.5	To assess a critical way of thinking based on current healthcare development.
CO432.6	To manage Community services in rural, urban and school health.
C435 Pharmacovigilance [Theory | Elective]	
CO ID.	Course Outcome
C435.1	To comprehend the background of pharmacovigilance, adverse drug reactions, and basic terminology
C435.2	To make utilisation of diverse drug disease classifications, drug dictionaries and drug information assets in pharmacovigilance.
C435.3	To describe several pharmacovigilance techniques and the communication mechanism involved in ADR reporting.
C435.4	To evaluate pharmacovigilance safety data production and ICH guidelines.
C435.5	To assess the process of medical and material vigilance, as well as the safety of drugs and vaccines in specific populations.
C435.6	Enhancing the ability to submit ADR reports using several ADR reporting forms