Program Name	Course Code	Course Name	Year Of Introduction	Course Outcomes
B. Pharm Semester I	BP101T	Human Anatomy And Physiology(Theory)	2022-2023	**CO1**: Explain the gross morphology, structure and functions of various organs of human body **CO2:** Describe the various homeostatic mechanisms and their imbalances **CO3:** Identify the various tissues and organs of different systems of human body **CO4:** Perform the various experiments related to special senses and nervous system **CO5:** Appreciate coordinated working pattern of different organs of each system
	BP102T	Pharmaceutical Analysis (Theory)	2022-2023	**CO1**: To understand the principles of volumetric/gravimetric and electrochemical analytical techniques. **CO2:** Outline the method of expressing the concentration with preparation and standardization of various molar and normal solutions. **CO3:** To gain knowledge of sources of errors and minimizing techniques. **CO4**: To explain about accuracy, precision and significant figure error concepts. **CO5:** Describe various Acid base titration **CO6:** Describe various Acid base non aqeous titration **CO7:** Clarify different terms, basic principles and reaction conditions of precipitation reaction. **CO8:** Clarify different terms, basic principles and reaction conditions of Complexation reaction. **CO9:** To understand the principles of gravimetric analytical techniques.

				CO10: Clarify different terms, basic principles and reaction conditions of redox reaction. **CO11:** To analyze various electro chemical titrations.
	BP103T	Pharmaceutics-I (Theory)	2022-2023	**CO1:**To know the historical background and profession of pharmacy and basics of pharmaceutical dosage forms. **CO2**:To understand the importance of prescription and posology. **CO3**:To solve pharmaceutical calculations and understand the formulation of powders and liquid dosage forms. **CO4**:To develop monophasic and biphasic liquid dosage forms. **CO5**:To explain the concepts of suppositories and pharmaceutical incompatibilities. **CO6**: To formulate and evaluate semi solid dosage forms
	BP104T	Pharmaceutical Inorganic Chemistry (Theory)	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote **CO8:** Describe the properties, storage condition and application of radiopharmaceuticals

	BP105T	Communication Skill (Theory)	2022-2023	**CO1**. Understand the behavioral needs for a Pharmacist to function effectively in the **CO2**. areas of pharmaceutical operation **CO3**. Communicate effectively (Verbal and Non Verbal) **CO4**. Effectively manage the team as a team player **CO5**. Develop interview skills **CO6**. Develop Leadership qualities and essentials
	BP106RBT	Remedial Biology/ (Theory)	2022-2023	**CO1**. Cell biology (Basic Nature of Plant cell and Animal cell) **CO2**. Classification System of both Plants & Animals **CO3**. Various tissue system and organ system in plant and animals **CO4**. Theory of evolution **CO5**. Anatomy and Physiology of plants and animals
	BP106RMT	Remedial Mathematics (Theory)	2022-2023	**CO1**. Apply mathematical concepts and principles to perform computations for Pharmaceutical Sciences. **CO2**. Create, use and analyze mathematicalrepresentations and mathematical relationships **CO3**. Communicate mathematical knowledge and understanding to help in the field of Clinical Pharmacy **CO4**. Perform abstract mathematical reasoning
B. Pharm Semester II	BP201T	Human Anatomy And Physiology-II (Theory)	2022-2023	**CO1:** Explain the gross morphology, structure and functions of various organs of human body **CO2:** Describe the various homeostatic mechanisms and their imbalances **CO3:** Identify the various tissues and organs of different systems of human body **CO4:** 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. **CO5:** Appreciate coordinated working pattern of different organs of each system **CO6:** Appreciate the interlinked mechanisms in the maintainanace of normal functioning (homeostatis) of human Body.
	BP202T	Pharmaceutical Organic Chemistry-I(Theory)	2022-2023	**CO1:** Describe the classification of organic compounds and nomenclature. **CO2:** Write the structure, name of the organic compound **CO3:** Knowledge about the type of isomerism, Classify isomerism and explain structural isomerism. **CO4:** Explain hybridisation in alkanes. **CO5:** Explain hybridisation in alkenes and

				stabilities of alkenes. **CO6:** Explain the mechanism, orientation of elimination, Electrophilic, free radical and Nucleophilic addition reaction. **CO7:** Explain stabilities of conjugated dienes. **CO8:** Discuss the mechanism, kinetics, stereochemistry and factors affecting SN1 & SN2 reaction. **CO9:** Discuss the application, qualitative test and structure of organic compounds of medicinal importance. **CO10:** Knowledge about the naming reactions of carbonyl compounds **CO11:** Discuss the mechanism of some named reaction. **CO12:** Discuss the acidity of carboxylic acids. **CO13:** Discuss the basicity of amines.
	BP203T	Biochemistry(Theory)	2022-2023	**CO1**. To understand the importance of metabolism of substrates. **CO2**. Will acquire chemistry and biological importance of biological macromolecules. **CO3**. To acquire knowledge in qualitative and quantitative estimation of the biological macromolecules. **CO4**. To know the interpretation of data emanating from a Clinical Test Lab. **CO5**. To know how physiological conditions influence the structures and re-activities of biomolecules. **CO6**. To understand the basic principles of protein and polysaccharide structure
	BP204T	Pathophysiology(Theory)	2022-2023	**CO1**.Describe the etiology and pathogenesis of the selected disease states **CO2**.Knowledge of signs and symptoms of the diseases **CO3**. Identify the complications of the diseases.

				CO4.Know most commonly encountered pathophysiological state(s) and/or disease mechanism(s), as well as any clinical testing requirements
	BP205T	Computer Application In Pharmacy(Theory)	2022-2023	**CO1**.Apply the knowledge of mathematics and computing fundamentals To pharmaceutical applications for any given requirement **CO2**. Design and develop solutions to analyzepharmaceutical problems using computers. **CO3**. Integrate and apply efficiently the contemporary IT tools to all Pharmaceutical related activities **CO4**. Solve and work with a professional context pertaining to ethics, social, cultural and regulations with regard to Pharmacy .
	BP206	Environmental Science (Theory)	2022-2023	**CO1**. This program shall create an awareness aboutenvironmental problems, develop an attitude towards of concern for the environment.
B. Pharm Semester III	BP301T	Pharmaceutical Organic Chemistry-II(Theory)	2022-2023	**CO1:** Understand the principles/ mechanism of organic compounds **CO2:** Basic knowledge regarding general methods of preparation of organic compounds. **CO3:** Understand the reaction, name the reaction and orientation of reactions **CO4:** Learn reactivity/stability of organic compounds **CO5:** Learn the preparation of organic compounds **CO6:** discuss the structure and uses of the organic compounds **CO7:** Understand the chemistry, chemical reactions and analytical constant of fats and oils **CO8:**To acquire knowledge in heterocyclic compounds
	BP302T	Physical Pharmaceutics I(Theory)	2022-2023	**CO1:** Understand the mechanisms of solute solvent interactions **CO2:** Study the limitations and applications of Distribution law **CO3:** Learn the steps involved in the preparation of

				pharmaceutical buffers and its importance **CO4:** Study the use of physicochemical properties in formulation research and development **CO5:** Acquire skills and working knowledge of the principles and concepts of surface tension and its measurement **CO6:** Study the role of surfactants in various drug delivery applications **CO7:** Understand the various intermolecular forces involved in the formation of complexes and its applications. **CO8:** Understand the pharmaceutical applications of various techniques like lyophilisation
	BP303T	Pharmaceutical Microbiology (Theory)	2022-2023	**CO1**. Students will be able to acquire, articulate, retain and apply specialized language and knowledge relevant to microbiology. **CO2**. Students will acquire and demonstrate competency in laboratory safety and in routine and specialized microbiological laboratory skills applicable to microbiological research or clinical methods, including accurately reporting observations and analysis. **CO3**. Students will communicate scientific concepts, experimental results and analytical arguments clearly and concisely, both verbally and in writing. **CO4**. Students will demonstrate isolation of and identification of microbes. **CO5**. Students can able to design microbiology laboratory considering all the aspects of safety **CO6**.Students will acquire knowledge about validating the microbiological equipment and reporting the observations
	BP304T	Pharmaceutical Engineering – (Theory)	2022-2023	**CO1**: Know various unit operations used in Pharmaceutical industries. **CO2:** Understand the various laws, mechanisms of unit operations. **CO3**: Learn the various processes involved in Pharmaceutical manufacturing process. **CO4:** Understand the material handling techniques. **CO5:** Know the principle, construction, working, uses, advantages and disadvantages of Pharmaceutical equipments used for various unit operations. **CO6:** Understand significance of plant layout design for optimum use of resources. **CO7:** Know various preventive methods used for corrosion control in Pharmaceutical industries. **CO8:** Understand the concepts of heat transfer and fluid flow.
B. Pharm Semester	BP401T	Pharmaceutical Organic Chemistry III– (Theory)	2022-2023	**CO1:** Explain the stereo chemical aspects of organic compounds and stereo chemical reaction

IV				**CO2:** Understand the basic terminologies in stereochemistry and organic reactions **CO3:** Stereo-chemical features including conformation and stereo electronic effects; Geometrical isomers **CO4:** To acquire the knowledge and understanding of the basic experimental principles of heterocyclic chemistry. **CO5:** Understand the nomenclature of organic compounds **CO6:** Understand the properties of heterocyclic compounds **CO7:** Understand the methods of preparation and properties of organic compounds **CO8:** Understand the methods of preparation and properties of organic compounds **CO9:** Know the medicinal uses and other applications of organic compounds **CO10:** Understand the aromaticity and reactivity of heterocyclic compounds **CO11:** Understand the important named reactions
	BP402T	Medicinal Chemistry I – (Theory)	2022-2023	**CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes

				and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP403T	Physical Pharmaceutics II – (Theory)	2022-2023	**CO1:** Learn the formulation concepts of pharmaceutical suspensions and emulsions and their stability problems **CO2:** Acquire working knowledge and understanding the concepts of colloids and its applications **CO3:** Study the reaction kinetics, reaction order, factors affecting the rate of the reactions **CO4:** Have basic understanding of degradation and stabilization of medicinal agents as well as accelerated stability testing. **CO5:** Understand the flow behaviour of fluids and also to identify suitable characteristics for each formulations **CO6:** Study the different types of deformation of solids and stress-strain relationship **CO7:** Explain the derived properties and flow properties of powders and its role in formulation development **CO8:** Know the methods to determine particle size and its role in formulation development
	BP404T	Pharmacology I – (Theory)	2022-2023	**CO1**: To Understand the Pharmacological actionsof different categories of drugs **CO2**: Explain the mechanism of drug action at organ system / sub cellular /macromolecular levels **CO3**: Apply the basic phermacologicalknowledge in the prevention andtreatment of various diseases **CO4**: Observe the effect of drugs on animalsby simulated experiments **CO5**: Appreciate correlation of pharmacology with other biomedical sciences
	BP405T	Pharmacognosy And Phytochemistry I– (Theory)	2022-2023	CO1: Explain the importance of Pharmacognosy, its history, scope and development along with the sources of

				drugs. CO2: Detail understanding of various crude drug classifications with their merits and demerits. CO3: Describe the cultivation and collection methods for the herbs considering the various factors affecting and plant hormones. CO4: Explain the importance of plant tissue culture, nutritional requirements, its growth and edible vaccines. CO5: Explain the significant role of Pharmacognosy in different system of medicine. CO6: Describe the different types of secondary metabolites and their role in treatments of diseases. CO7: Explain the complete description of natural fibres with hallucinogens, teratogens and natural allergens. CO8: Explain and discuss the metabolic processes in plants and significant role of different metabolites in treating the diseases.
B. Pharm Semester V	BP501T	Medicinal Chemistry II – (Theory)	2022-2023	**CO1**. Helps in correlating between pharmacology of a disease and its mitigation or cure. **CO2**. To write the chemical synthesis of some drugs. **CO3**. To know the structural activity relationship of different class of drugs. **CO4**. Knowledge about the mechanism pathways of different class of medicinal compounds. **CO5**. To acquire knowledge about the chemotherapy for cancer. **CO6**. To understand the chemistry of drugs with respect to their pharmacological activity
	BP502T	Industrial Pharmacy I– (Theory)	2022-2023	**CO1**: Carry out assessment of physicochemical properties of drugs as a tool in the optimization of solid and liquid dosage forms. **CO2**: Formulate and prepare tablets, capsules and liquid orals using established procedures and technology. **CO3**: Describe the facilities and standards necessary for the industrial production of sterile dosage forms. **CO4**: Formulate and prepare different types of parenteral and ophthalmic dosage forms

				CO5: Evaluate the pharmaceutical dosage forms for quality and stability and compare with standards prescribed in the pharmacopoeia **CO6**: Select ingredients and formulate cosmetics such as lipsticks, shampoos, cold cream and vanishing cream, tooth pastes, hair dyes and sunscreens **CO7**: Identify containers, closures, valves and propellants for different types of aerosol systems. **CO8**: Select and evaluate appropriate packaging materials for various pharmaceutical dosage forms.
	BP503T	Pharmacology II – (Theory)	2022-2023	**CO1**. Students would have understood the mechanism of drug action and itsrelevance in the treatment of different diseases **CO2**.They would be trained with isolation of different organs/tissues from the laboratory animals by simulated experiments **CO3**.They would have observed the various receptor actions using Isolated tissue preparation **CO4**.Students would appreciate the correlation of pharmacology with related medical sciences **CO5**.They would have understood the cell communication mechanism **CO6**. They would appreciate the newer targets of several disease conditions for treatment.
	BP504T	Pharmacognosy And Phytochemistry II– (Theory)	2022-2023	CO1:Explain the basic metabolic pathways and metabolites formation in higher plants. CO2: Describe the secondary metabolites in plants and their paramount rolein diseases treatment. CO3: Understanding the difference between crude drug morphology, chemical constituents and their role in treatment of ailments. CO4: Explain the isolation, identification and analysis for various secondary metabolites considering specific examples. CO5: Description and consideration of radioactive isotopes in the investigation of biogenetic study. CO6: Explain the industrial production, estimation and utilization on large scale basis for secondary metabolites. CO7: Compare and discuss the different methods of extraction for herbal drugs covering modern and traditional methods.

				CO8: Discuss spectroscopic, chromatographic and electrophoresis methods for isolation, purification and identification of crude drugs.
	BP505T	Pharmaceutical Jurisprudence (Theory)	2022-2023	**CO1**: Acquire knowledge in practice the Professional ethics **CO2**: Understand the various concepts of the pharmaceutical legislation in India; **CO3**: Learn the knowledge on schedules and functioning of various committees in the Drug and Cosmetic Act and rules **CO4**: Understand the labelling requirements and packaging guidelines for drugs and cosmetics **CO5**: Understand the Drug policy, DPCO, Patent and design act **CO6**: Know about narcotic and psychotropic drugs, its productions and drug abuse, its controlling. **CO7**: Understand the concepts of Dangerous Drugs Act, Pharmacy Act and Excise duties Act **CO8**: Explain other laws as prescribed by the Pharmacy Council of India from time to time including International Laws
B. Pharm Semester VI	BP601T	Medicinal Chemistry III – (Theory)	2022-2023	**CO1**. To develop an understanding of the physico-chemical properties of drugs. **CO2**. To understand how current drugs were developed by using pharmacophore modeling and docking Technique. **CO3**. To acquire knowledge in the chemotherapy for cancer and microbial diseases and different anti-viral agents. **CO4**. To acquire knowledge about the mechanism pathways of different class of medicinal compounds. **CO5**. To have been introduced to a variety of drug classes and some pharmacological properties. **CO6**. To acquire knowledge on thrust areas for further research
	BP602T	Pharmacology III – (Theory)	2022-2023	**CO1**. Students would have studied elaborately on mechanism of drug action and its relevance in the treatment of different infectious diseases **CO2**. They comprehended the principles of toxicology and treatment of various poisonings. **CO3**. They came across the methods of toxicity studies **CO4**. They studied about symptoms of several poisonings **CO5**. They studied about treatment of several

				poisonings **CO6**. Students understood the toxicity profile of each drugs
	BP60 3T	Herbal Drug Technology – (Theory)	2022-2023	CO1: Understanding the raw material and their conversion into herbal drug product with their evaluation. CO2: To conceptualize principle, theory, diagnosis and treatments for the different system of medicine. CO3: Explain the scope and types of products as neutraceuticals and their health benefits in treatment of diseases. CO4:Elaborate the sources and description of raw material fromherbals used in different herbal formulations. CO5: Describe the different conventional herbal formulations and outline their significance and measure for ailments. CO6: Discuss guideline framed by WHO and ICH for the assessment and stability testing of herbal drugs. CO7:Explain the significance of herbal drug Industry and manufacturing of medicinal and aromatic plants in India and their correlations. CO8: Describe the components of GMP and their objectives along with Infrastructural requirements related to various criteria parameters.
	BP60 4T	Biopharmaceutics And Pharmacokinetics – (Theory)	2022-2023	**CO1**. Understand the concept of ADME of drug in human body. **CO2**. Determine the various pharmacokinetic parameters from either plasma concentration or urinary excretion data for drug **CO3**. Apply the various regulations related to developing BA-BE study protocol for the new drug molecule
	BP60 5T	Pharmaceutical Biotechnology – (Theory)	2022-2023	.**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 **CO6**. Students can able to explain the general principles of generating transgenic plants, animals and microbes
B. Pharm Semester VII	BP701T	Instrumental Methods Of Analysis – (Theory)	2022-2023	**CO1:** Explain the theoretical principles behind UV and IR spectroscopy. CO2: Learn basic principles and instrumentation of UV spectrometer, IR spectrometer, fluorimeter flame photometer CO3: Learn basic principles involved in various chromatographic techniques like, TLC, column chromatography and paper chromatography **CO4:** Understand the separation of compounds by chromatographic techniques **CO5**: Explain principle Instrumentation, and application in separation and identification of compounds by electrophoresis technique **CO6:** Learn separation and identification of compounds by various chromatographic techniques. CO7: Explain theory, principle and instrumentation of GC, HPLC, gel chromatography, ion exchange chromatography and affinity chromatography **CO8:** Learn applications of various chromatographic techniques for separation of mixtures containing organic, inorganic and natural Products.
	BP702T	Industrial PharmacyII – (Theory)	2022-2023	**CO1:** Discuss and impart fundamental knowledge of pharmaceutical product development. **CO2:** Understand process of pilot plant and scale up of various pharmaceutical dosage forms. **CO3 :**Learn the technology transfer process from laboratory scale to commercial batch. **CO4:** Understand different Laws and Acts that regulate pharmaceutical industry. **CO5:** Learn the concept and standards of quality management system used in Pharmaceutical Industry. **CO6:** Know the approval process and regulatory requirements for drug product
	BP703T	Pharmacy Practice – (Theory)	2022-2023	**CO1**. Students will demonstrate knowledge of and ability to use principles of therapeutics, quality improvement, communication, economics, health behavior, social and administrative aspects,health policy and legal issues in the practice of pharmacy. **CO2**. Students will use knowledge of drug distribution methods in hospital and apply it in the practice of pharmacy. **CO3**. Students will effectively apply principles of drug

				store management and inventory control to medication use. **CO4**. Students will provide patient-centered care to diverse patients using the best available evidence and monitor drug therapy of patient through medication Chart review, obtain medication history interview and counsel the patients, identify drug related problems. **CO5**. Students will engage in innovative activities by making use of the knowledge of clinical trials **CO6**. Students will exhibit professional ethics by producing safe and appropriate medication use throughout society
	BP704T	Novel Drug Delivery Systems (Theory)	2022-2023	**CO1:** Explain the principles and technology used in the design of sustained release and controlled release drug delivery systems **CO2:** Learn the criteria for selection of a drugs and polymers for the development of Novel drug delivery systems **CO3:** Learn the various approaches for development of novel drug delivery systems. **CO4:** Explain the formulation and evaluation of Novel drug delivery systems **CO5:** Explain the formulation and characterization of transdermal drug Delivery systems **CO6:** Learn the formulation and evaluation of Gastroretentive&Nasopulmonary drug delivery systems **CO7:** Discuss various approaches for the development of targeted drug Delivery systems **CO8:** Explain development of ocular formulations and intra uterine devices (IUDs) and it's applications
B. Pharm Semester VIII	BP801T	Biostatistics And Research Methodology(Theory)	2022-2023	**CO1:** To understand the basic aspects of statistics such as central tendency, dispersion and correlation. **CO2:** To make use of regression and probability while analyzing data by statistical methods. **CO3:** To explain the need of research, research designs and their applications and to explain methodological designs. **CO4:** To assess the need of regression modeling and to build up the ability to use various statistical problems. **CO5:** To elaborate design and analysis of experiments and response surface methodology. **CO6:** To build the ability to perform various parametric and non parametric statistical tests and to draw graphs and plots based on type of data.
	BP802T	Social And Preventive Pharmacy	2022-2023	**CO1:** To understand the concept of health and health education. **CO2:** To create awareness about various preventive measures of stated communicable and non communicable diseases. **CO3:** To apply the knowledge of national health programmes mentioned in real world to serve the society.

				CO4: To elaborate various vaccines under national immunization programme and their schedule. **CO5**: To demonstrate the impact of socio-cultural factors and urbanization on health. **CO6**: To evaluate the health and pharmacy related problems in societal perspective.
	BP803ET	Pharma Marketing Management (Theory)	2022-2023	**CO1:** To understand different concepts of marketing. **CO2:** To identify marketing mix for pharmaceutical products. **CO3:** To classify different types of sales promotion. **CO4:** To examine pharmaceutical marketing channels. **CO5:** To compare pricing of the pharmaceutical products. **CO6:** To adapt to emerging concepts of marketing.
	BP804ET	PHARMACEUTICAL REGULATORY SCIENCE (Theory)	2022-2023	**CO1:** Explain the process of drug discovery, development and generic product development **CO2:** Describe the regulatory approval process and registration procedures for API and drug products in various countries **CO3:** Learn the basic understanding of regulations of India with other global regulated markets **CO4:** Understand the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals **CO5:** Explain basic understanding of developing clinical trial protocols **CO6:** Understand the concept of pharmacovigilance and its significance
	BP805ET	Pharmacovigilance(Theory)	2022-2023	**CO1:** To understand the history of pharmacoivigilance, adverse drug reactions and basic terminologies in Pharmacovigilance. **CO2:** To make use of various drug disease classifications, drug dictionaries and drug information resources in pharmacovigilance. **CO3:** To explain various methods of pharmacovigilance and communication process during ADR reporting. **CO4:** To appraise safety data generation and ICH guidelines in pharmacovigilance. **CO5:** To evaluate drug and vaccine safety in special population and to appraise the process of haemovigilance and materiovigilance. **CO6:** To build the ability to report adverse drug reactions through various ADR reporting forms.
	BP806ET	Quality Control And Standardization Of Herbals (Theory)	2022-2023	**CO1:** To recall the WHO guidelines for the quality control of herbal drugs. **CO2:** To illustrate and outline the quality assurance in traditional system of medicine including CGMP, GAP, GMP and GLP. **CO3:** To compare the quality control parameters of drugs according to European union and ICH guidelines. **CO4:** To make use of research guidelines for evaluation of safety and effiency of herbal medicine.

				CO5: To apply the knowledge of chromatography in standardization of herbal drugs and to perform the stability studies. **CO6:** To improve the knowledge on regulatory issues for herbal medicine including GMP, WHO guidelines on safety monitoring of herbal medicine in Pharmacovigilance
	BP807ET	Computer Aided Drug Design (Theory)	2022-2023	**CO1:**To recall the approaches in drug discovery, drug development, lead discovery based on metabolism and clinical observation and also analog based drug design **CO2:** To explain the development, approaches of QSAR, importance and determination of physicochemical parameters **CO3:** To make use of molecular modeling and virtual screening techniques **CO4:** To apply the molecular docking techniques to examine the binding interactions of ligand with molecular targets **CO5:** To explain the applications of bioinformatics, chemo informatics, ADME databases, chemical, biochemical and pharmaceutical databases relevant to drug design **CO6**: To discuss the conformational analysis of molecules using molecular and quantum mechanics approach and also determine the global conformational minima
	BP808ET	Advanced Instrumentation Techniques(Theory)	2022-2023	**CO1:** Explain theoretical principles of, MASS and NMR spectroscopy. **CO2:** Learn basic instrumentation of NMR and mass spectrometer. **CO3:** Explain theoretical principles of X-ray Deffraction, Origin of X-Ray, instrumentation and identification of organic compounds by XRD methods. **CO4:** Learn basic principles and instrumentation of thermal analysis like TGA, DTG, DTA and DSC **CO5:** Describe general principles and procedures involved in extraction techniques and solvent

				extraction methods. **CO6:** Learn basic instrumentation and applications of hyphenated techniques like LCMS, GCMS, FABMS, CIMS, MALDI etc. **CO7:** Explain general principles and instrumentation of radioimmuno assay and its applications. **CO8:** Learn basic knowledge about the calibration of analytical instruments like UV Spectrophotometer, HPLC, Electronic Balance.