



Nehru Yuva Krida & Sanskrutik Mandal, Chikhli's

GAWANDE COLLEGE OF PHARMACY

Lavala Road, Sakharkherda. Tq. Sindkhed Raja, Dist. Buldana (M.S.) - 443202

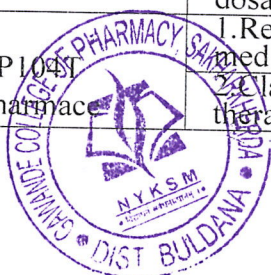
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COURSE OUTCOMES:

B.Pharm

Course code/Course Title	Course Outcomes	Bloom level
B.Pharm –I (Sem-I)		
On successful completion of the course, the students will be able to		
BP101T Anatomy and Physiology-I	1. Recall morphology, structure and functions of cell, skeletal, muscular, cardiovascular system of the human body.	Remembering
	2. Tell various homeostatic mechanisms and their imbalances	Remembering
	3. Explain various tissues of different systems of human body.	Understanding
	4. Explain coordinated working pattern of different organs of each system	Understanding
	5. Classify different types of bones in human body	Understanding
BP102T Pharmaceutical Analysis – I	1. Define the terminologies of volumetric analysis	Remembering
	2. Classify the types of titrimetric processes	Understanding
	3. Explain the principle of titrimetric analytical techniques	Understanding
	4. Compare the advantages and disadvantages of different titrimetric processes	Analyzing
	5. Identify the appropriate analytical method for the analysis of drugs	Applying
BP103T Pharmaceutics -I	1. classify pharmaceutical dosage forms	Understanding
	2. Identify their professional role in the healthcare system	Understanding
	3. Apply principles of pharmaceutical science in formulation and dispensing the various dosage forms	Applying
	4. Solve the problem through the application of fundamental principles of pharmaceutical metrology	Applying
	5. Apply pharmacopoeial standards for the preparation of various dosage forms	Applying
BP104T Pharmaceutical Chemistry	1. Recall the significance of inorganic compounds as medicines	Remembering
	2. Classify the inorganic compounds according to therapeutic category	Understanding



utical Inorganic Chemistry -I	3.Explain the mechanism of action of pharmaceutically useful Inorganic compounds	Understanding
	4.Summarize the official pharmaceutical Inorganic compounds	Understanding
	5.Extend the acquired knowledge towards newly launched inorganic formulations	Understanding
BP105T Communicati onSkill	1. Understand the knowledge of soft's kills and communication skill.	Understanding
	2.Understand the concept of teamwork, leadership, personal development skills	Understanding
	3. Acquire the knowledge of body language and presentation skill	Applying
	4. Acquire the knowledge of technical writing skill	Applying
	5. Identify the concept of positive thinking that keeps the students in a good stead at the time of crisis.	Remembering
BP106 RBT Remedial Biology	1. Recall animal & plant cellular biology	Remembering
	2.Know classification system of both plants & animals	Understanding
	3.Describe various tissue system and organ system in plant and animals	Understanding
	4. Discuss theory of evolution	Understanding
	5. Describe Anatomy and Physiology of plants and animals	Understanding
BP106 RMT Remedial Mathematics	1. Express abstract mathematical reasoning	Applying
	2.Describe mathematical knowledge and understanding to help in the field of Clinical Pharmacy	Understanding
	3. Apply mathematical concepts and principles to perform	Applying

	computations for Pharmaceutical Sciences.	
	4. Create, use and analyze mathematical representations and mathematical relationships	Creating
BP107 P Anatomy and Physiology-I	1. Recall relevance and significance of Human Anatomy and Physiology to Pharmaceutical Sciences.	Remembering
	2. Summarize the various tissues of different systems of human body.	Understanding
	3. Understand the composition and functions of blood component and mechanism of blood coagulation.	
	4. Demonstrate experimental techniques related to physiology.	Understanding
	5. Experiment with blood group determination, blood pressure measurement, blood cells counting.	Applying
BP108 P Pharmaceutical Analysis -I	1. Name various volumetric glassware's	Remembering
	2.Demonstrate the titration process	Understanding
	3. Relate the theoretical concepts to the designed experiments	Understanding
	4.Interpret the analytical data	Understanding
	5. Apply the knowledge of volumetric analysis in the preparation of reagents and solutions	Applying



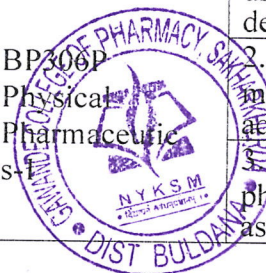
BP109 P Pharmaceutics-I	1. Extend the acquired knowledge for the preparation of dosage forms	Understanding
	2. Recommend and follow approaches to avoid incompatibilities and unwanted interactions	Understanding
	3. Experiment with correct quantity of active and inactive pharmaceutical ingredients	Applying
	4. Apply the knowledge for selection of dosage form for treatment of diseases	Applying
	5. Demonstrate the quality control test for dosage forms	Understanding
BP110 P Pharmaceutical Inorganic Chemistry-I	1. Name various pharmaceutical inorganic compounds	Remembering
	2. Compare the properties inorganic compounds	Understanding
	3. Demonstrate the identification tests for inorganic compounds	Understanding
	4. Apply the knowledge for inorganic compounds	Applying
	5. Develop skill for performing monograph studies	Applying
BP111 P Communication Skill	1. Demonstrate interview skills	Understanding
	2. Develop Leadership qualities and essentials	Applying
	3. Explain behavioral needs for a Pharmacist to function effectively in the areas of pharmaceutical operation	Understanding
	4. Demonstrate communicate effectively (Verbal and Non Verbal)	Understanding
BP 112 RBP Remedial Biology	1. Identify various body component	Applying
	2. Demonstrate basic components of anatomy & physiology of plant	Understanding
	3. List components of anatomy & physiology animal with special reference to human	Remembering
	4. Experiment with microscope for study of plant	Applying
B.Pharm –I (Sem-II)		
BP201T Anatomy and Physiology-II	1. Define morphology, structure and functions of various organs of the human body	Remembering
	2. Identify the various tissues and organs of different systems of human body	Applying
	3. Explain mechanisms in the maintenance of normal functioning (homeostasis) of human body.	Understanding
	4. Explain detailed about energy and metabolism	Understanding
BP202T Pharmaceutical Organic Chemistry-I	1. Classify the organic compounds	Understanding
	2. Explain the applications of organic Chemistry	Understanding
	3. Demonstrate the stereo models for the study of stereochemistry	Understanding
	4. Apply the principle of organic chemistry for pharmaceuticals	Applying
	5. Develop an approach for organic synthesis	Applying



BP203T Biochemistry-I	1. Know catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes	Remembering
	2. Recall Structure and function of genome	Remembering
	3. Explain nutrient metabolism in physiological & pathological conditions	Understanding
	4. Explain functions of DNA in the synthesis of RNAs and proteins.	Understanding
BP204T Pathophysiology in Pharmacy	1. Name the signs and symptoms of the diseases	Remembering
	2. Describe the etiology and pathogenesis of the selected disease states	Understanding
	3. Explain the complications of the diseases	Understanding
BP205T Computer Application in Pharmacy	1. Know the various types of application of computer in pharmacy	Remembering
	2. Know the various types of database	Understanding
	3. Know the various application of database in pharmacy	Understanding
	4. Applying data analysis in preclinical development	Applying
BP206T Environmental Science	1. Know about the environment and its allied problems	Remembering
	2. Support to attain harmony with Nature	Evaluating
	3. Create the awareness about environmental problems among learners	Creating
	4. Develop skills to identifying and solving environmental problems	Applying
BP207P Anatomy and Physiology-II	1. Perform experiments with like neurological reflex, body temperature measurement	Applying
	2. Perform experiments like olfaction, gestation reflex and eye sight	Applying
	3. Perform the hematological tests like blood cell counts, hemoglobin estimation, bleeding/clotting time etc.	Applying
BP208P Pharmaceutical Organic Chemistry-I	1. Recognize the various organic compounds by their structures.	Remembering
	2. Classify the heterocyclic compounds based on their ring structures	Understanding
	3. Apply IUPAC nomenclature to the simple heterocyclic compounds	Applying
	4. Draw structures of the simple heterocyclic compounds	Applying
	5. Write the reactions of heterocyclic compounds	Applying
BP209 P Biochemistry	1. Perform experiments with qualitative and quantitative estimation of the biological macromolecules.	Applying
	2. Interpretation of data emanating from a clinical test lab.	Evaluating
	3. Explain physiological conditions influence the structures and re-activities of biomolecules.	Evaluating
BP210P Computer Application in Pharmacy	1. Creating and working with database	Creating
	2. Design and development of database	Evaluating
	3. Evaluate table form database	Evaluating
	4. retrieving information from database	Analyzing



B.Pharm –II (Sem-III)		
On successful completion of the course, the students will be able to		
BP301T Pharmaceutical Organic chemistry-II	1. Recall structure, name and the type of isomerism of the organic compound	Remembering
	2. List of reaction, name the reaction and orientation of reactions	Remembering
	3. Explain reactivity/stability of compounds	Understanding
	4. Explain general methods of preparation of organic compounds	Understanding
BP302T Physical Pharmaceutic s-I	acquire the knowledge of physical principles of states of matter	Understanding
	1. understand various physicochemical properties of drug molecules in the designing the dosage forms	Understanding
	2. calculate and adjust dosage and dose regimen of medication	Remembering
	3. choose rationally the adjuvants used for delivery and in formulation of biologically active molecules	Remembering
BP303T Pharmaceuti cal Microbiolog y-I	4. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.	Applying
	1. Basic Knowledge of morphological identification, nutrition, cultivation and preservation of various microorganisms	Remembering
	2. Explain importance and implementation of sterilization in pharmaceutical processing and industry	Understanding
	3. Explain cell culture technology and its applications in pharmaceutical industries.	Understanding
BP304T Pharmaceuti cal Engineering	4. Plan in aseptic area without microbial contamination	Applying
	1. Define various unit operations and explain their importance	Remembering
	2. Define various separation & purification techniques and its significance in pharmacy	Remembering
	3. Name the devices controls the fluid flow for pharmaceutical liquid.	Remembering
	4. Demonstrate newly emerging aspects of pharmaceutical engineering	Understanding
BP305P Pharmaceuti cal Organic Chemistry- II	5. Apply engineering principles to address issues in various pharmaceutical processes	Applying
	1. Identify mechanisms and orientation of chemical reactions	Applying
	2. Perform experiment with synthesis of organic compounds	Applying
BP306P Physical Pharmaceutic s-	3. Explain about the electrophilic and nucleophilic reactions.	Understanding
	1. Operate different pharmaceutical laboratory instruments used in determining various physical properties	Remembering
	2. Recommend, counsel and help patients to understand the method of administration of different disperse systems	Understanding
	3. Perform skillfully laboratory processes needed in pharmacy practice as determination of physical properties of solution and	Applying



	suspensions	
	4. Perform compounding, packing, labeling and dispensing of disperse systems accurately and safely	Applying
BP307P Pharmaceutical Microbiology-I	1. Name equipment used for sterilization of pharmaceuticals	Remembering
	2. Demonstrate microbiological standardization of Pharmaceuticals	Understanding
	3. Identify various types of microorganism	Applying
	4. Perform sterility testing of pharmaceutical products	Applying
BP308P Pharmaceutical Engineering	1. Recall fundamentals of unit operation & its significance in pharmacy	Remembering
	2. Name the various unit operation used in Pharma Industry	Remembering
	3. Explain importance of purification during pharmaceutical processing	Remembering
	4. Demonstrate application of unit operation in formulation development	Understanding
	5. Apply engineering principle for enhancement product output	Applying




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B.Pharm –II (Sem-IV)		
On successful completion of the course, the students will be able to		
BP401T Pharmaceutical Organic chemistry-III	1. Know the medicinal uses and other applications of organic compounds	Remembering
	2. Understand the methods of preparation and properties of organic compounds	Understanding
	3. Explain the stereo chemical aspects of organic compounds and stereo chemical reactions	Understanding
	Explain isomerism phenomena of drug	Understanding
BP402T Medicinal Chemistry-I	1. Understand general structural features of substances having therapeutic value	Understanding
	2. Detailed chemistry, nomenclature along with physicochemical properties of the drugs	Understanding
	3. Know modes of actions and related adverse effects	Remembering
	4. Understand chemical influences on biodisposition, drug-drug interactions	Understanding
	5. Identify pathways for drug metabolism	Applying
BP403T Physical Pharmaceutic s-II	1 explain the role of particle size, electrolyte and rheology in pharmaceuticals	Understanding
	2 identify and explain the physicochemical and formulation properties of a drug that influence its absorption and stability	Remembering
	3 Know the principles of chemical kinetics and to use them for stability testing and determination of expiry date of formulations	Understanding
	4 Recognize basic rules and equations regarding physical principles essential for pharmaceutical applications	Applying
	5 Demonstrate uses of physicochemical properties in the formulation development and evaluation of dosage forms.	Applying
BP404T Pharmacology-I	1. Define the fundamental concepts of pharmacology and pharmacokinetics	Remembering
	2. Understand the basics of pharmacodynamics, adverse reactions, drug interactions and drug discovery	Understanding
	3. Identify the role of neurohumoral transmission and drugs acting on peripheral nervous system.	Applying
	4. Analyze the functions of neurotransmitters and drugs acting on central nervous system.	Analyzing
	5. Appraise the pharmacology of psychopharmacological agents	Evaluating
BP405T Pharmacognos	1. Recall the history, scope and development of pharmacognosy.	Remembering
	2. Remember different sources of crude drugs and also classify them accordingly	Remembering



y & Phytochemistry-I	3. Illustrate students about cultivation, collection, processing and storage of crude drugs.	Understanding
	4. Analyze quality of crude drugs.	Analyzing
	5. Plan systematic pharmacognostic study of primary metabolites, ayurvedic drugs, marine drugs and teratogens.	Applying
BP406P Medicinal Chemistry-I	1. Recall the basic requirements for synthesis and assay of drugs	Remembering
	2. Explain the techniques involved in isolation and purification of drugs and intermediates	Understanding
	3. Analyze the selected drugs present in dosage forms and to determine the percentage purity	Analyzing
	4. Determine the physicochemical property of drugs and draw its importance	Understanding
BP407P Physical Pharmaceutics-II	1 Operate different pharmaceutical laboratory instruments used in determining various physical properties such as surface tension,	Remembering




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	viscosity, particle size and complexes	
	2 Work effectively in a team to measure and understand various physical properties	Understanding
	3 Solve problems related to stability, flow property and compressibility	Understanding
	4 Perform skillfully some laboratory processes needed in pharmacy practice as determination of physical properties of powders and liquid dosage form	Applying
BP408P Pharmacology-I	1. Learn about basic instruments, common laboratory animals used in experimental pharmacology and to organize animal house as per the CPCSEA guidelines.	Understanding
	2. Demonstrate the common laboratory techniques like routes of administration, blood withdrawal for animal studies	Understanding
	3. Interpret the effects of various drugs on animals and correlate with humans	Applying
	4. Evaluate the pharmacological screening of drugs in rats/mice	Evaluating
	5. Predict various screening models for anticonvulsant and anxiolytic activity	Creating
BP409P Pharmacognosy & Phytochemistry-I	1. Remember different morphological and microscopical characteristic features of crude drugs.	Remembering
	2. Understand the cellular structure of crude drugs.	Understanding
	3. Evaluate the crude drugs by quantitative evaluation methods.	Evaluating
	4. Evaluate the crude drugs by physical methods of evaluation.	Evaluating
	5. Evaluate the crude drugs by chemical methods of evaluation.	Evaluating
B.Pharm –III (Sem-V)		
On successful completion of the course, the students will be able to		
BP501T Medicinal Chemistry- II	1. Recall the classification of drugs obtained by natural and synthetic route	Remembering
	2. Explain the biological targets for medicinal compounds	Understanding
	3. Apply the knowledge of biochemical processes to understand the mechanism of action and therapeutic uses of drugs	Applying
	4. Understand the relationships between structure of compound and its activity	Understanding
	5. Discuss the significance, advantages and limitations of drugs	Understanding
BP502T Industrial Pharmacy-I	1. Apply theoretical knowledge for development of various dosage forms	Applying
	2. Solve incompatibility & degradation problem of drugs	Applying
	Analyze relationships between environmental factor and dosage form instability	Analyzing



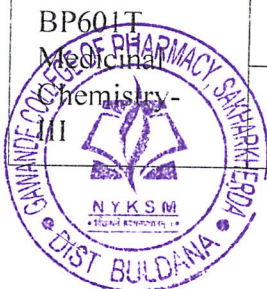
	3. Explain comparison between different dosage form and their needs for community	Evaluating
	4. Elaborate rational use & safety use of dosage forms	Creating
BP503T Pharmacology-II	1. Relate the relative pros and cons in the use of drugs for various cardiac complications.	Understanding
	2. Illustrate the drugs acting on hematopoietic system, shock diuretics and anti-diuretics.	Understanding
	3. Identify the role of autacoids and related drugs.	Understanding
	4. Analyze and summarize the drugs acting on endocrine system.	Analyzing
	5. Predict principles of bioassay and to construct the bioassay methods of various compounds	Creating
BP504T Pharmacognosy and Phytochemistry -II	1. Know the origin of various phytochemicals	Understanding
	2. Classify crude drugs from various phytochemical classes.	Understanding
	3. Explain pharmacognostic account of crude drugs from phytochemical classes.	Understanding



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	4. Compare methods of extraction & underlying rationale of qualitative & quantitative analysis of various phytochemical classes	Analyzing
	5. To know the modern extraction, isolation and identification and characterization techniques	Creating
BP505T Pharmaceutical Jurisprudence	1. Recall the pharmaceutical legislations, ethics, right to information, medical termination of pregnancy and intellectual property rights	Remembering
	2. Relate the significance of Drugs and cosmetics act 1940 and its rules 1945 in relation to import and manufacture of drugs	Understanding
	3. Understand the functions of pharmacy councils and implementation of education regulations in pharmacy	Understanding
	4. Discuss the salient features of drugs and magic remedies act, prevention of cruelty to animals act and drugs price control order	Understanding
BP506P Industrial Pharmacy-I	1. Identify various pathways of drug degradation through experiment	Applying
	2. Solve the problem related to dispersion system by choosing appropriate excipients	Applying
	3. Design and development modern dosage forms	Evaluating
	4. Evaluate dosage form as per regulatory guidelines	Evaluating
	5. Improve shelf life of life saving drug for community	Creating
BP507P Pharmacology -II	1. Understand the concept of in-Vitro Pharmacology	Understanding
	2. Study the methods employed in in-Vitro Pharmacology	Creating
	3. Evaluate the effect of drugs in preclinical models	Evaluating
	4. Determination of drug concentration by bioassay	Analyzing and Applying
BP508P Pharmacognosy and Phytochemistry-II	1. Identify the parts of plants from its morphological & microscopical features	Applying
	2. Able to conduct extractions/isolations of phytochemicals.	Creating
	3. Able to separate, identify phytochemicals by chromatography & judge its quality relevance.	Applying
	4. Judge significance of chemical evaluation & its quality relevance.	Evaluating
B.Pharm –III (Sem-VI)		
On successful completion of the course, the students will be able to		
BP601T Medical Chemistry-I	1. Demonstrate the importance of chemistry in the development and application of therapeutic drugs	Understanding
	2. Develop an understanding of the physico-chemical properties of drugs.	Understanding
	3. Understand how changes in the chemical structure of drugs affect efficacy	Understanding




	4. Understand how current drugs were developed and how new scientific techniques will provide future drugs.	Understanding
	5. Provide ability to make optimal patient-specific therapeutic decisions in clinical set up.	Understanding
BP602T Pharmacology - III	1. Understand the mechanism of drug action and its relevance in the treatment of different infectious diseases	Understanding
	2. Comprehend the principles of toxicology and treatment of various poisonings	Comprehension
	3. Appreciate correlation of pharmacology with related medical sciences	Analysis and Evaluation
BP603T Herbal Drug Technology	1. Recall the fundamental concepts of herbal raw materials and biodynamic agriculture techniques	Remembering
	2. Understand the concept of nutraceuticals and herbal food interactions.	Understanding
	3. Apply the knowledge for evaluation and preparation of herbal formulations	Applying
	4. Remember the regulatory guidelines for the assessment of herbal	Remembering

	drugs and patenting	
	5. Illustrate the scope and future prospects of the herbal drug industry	Understanding
BP604T Biopharmaceutics and Pharmacokinetics	1. Recall human anatomy of human body	Remembering
	2. Recall various theories of dissolution of drug molecules	Remembering
	3. Relate different mechanism of absorption of compounds with respect to their biological membrane	Remembering
	4. Explain the linkage between absorption & the distribution of drug molecules	Understanding
	5. Explain in detail various mechanism of eliminations for drug molecules	Understanding
BP605T Pharmaceutical Biotechnology	1. Remember the basic concepts of biotechnology with respect to enzyme technology, immunology, microbial technology, genetic engineering and protein engineering	Remembering
	2. Understand the steps involved in development of biosensors, recombinant products and concepts of immunology.	Understanding
	3. Compare the genetic organization of different types of cells and to list detection methods at genomic level, gene transfer methods and mutagens.	Applying
	4. Explain general requirements of fermentative production and biotechnological production of pharmaceuticals.	Understanding
	5. Elaborate on microbial genetics, biotransformation and various	Applying



	immunological products.	
BP606 T Quality Assurance	1. Remember the concepts of quality assurance, quality management and ICH guidelines.	Remembering
	2. Explain the ISO, NABL and QbD concepts in pharmaceutical industry	Remembering
	3. Analyze quality control parameters and good laboratory practices in pharmaceutical industry	Analyzing
	4. Evaluate the complaints and documents maintenance in industry with required regulatory guidelines.	Evaluating
	5. Elaborate the calibration, validation procedures and good warehousing practices.	Evaluating
BP607P Medicinal Chemistry-III	1. Define and select the method for preparation of drugs and intermediates	Remembering
	2. Explain principle underlying the preparation of drugs	Understanding
	3. Choose the method for assay of drugs by quantitative analysis	Applying
	4. Compare the advantages of microwave technique over conventional synthesis of drugs	Evaluating
	5. Predict the relation between physicochemical properties and biological activity	Creating
BP608P Pharmacology- III	1. Understand the concept of in-Vivo Pharmacology	Knowledge and Understanding
	2. Study the pathological assays methods employed in Pharmacology	Analysis and Comprehension
	3. Study bio statistical methods in experimental pharmacology and calculation of pharmacokinetic parameters	Application and Evaluation





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BP609 P Herbal Drug Technology	1. Remember different preliminary phytochemical screening of crude drugs	Remembering
	2. Evaluate the various herbal formulations	Evaluating
	3. Apply monographic analysis of herbal drugs as per pharmacopoeias	Applying
	4. Evaluate parameters such as aldehyde and phenol contents	Evaluating
B.Pharm IV (Sem-VII)		
On successful completion of the course, the students will be able to		
BP701T Instrumental Methods of Analysis	1. Understand selected instrumental analytical techniques for pharmaceuticals	Understanding
	2. Maximize knowledge on characterization and estimation of ions by spectroscopical techniques	Creating
	3. Categorize different organic and inorganic compounds using suitable spectroscopic and chromatographic techniques.	Applying
	4. Elaborate various principles, theory and instruments employed for the characterization and analysis of drugs.	Crating
BP702T Industrial Pharmacy-II	1. Explains pilot plant scale up techniques and SUPAC guidelines	Understanding
	2. Outline various aspects of technology transfer involved from R & D to productions.	Understanding
	3. Choose and to apply various responsibilities and regulatory requirements for drug approval.	Applying
	4. Analyze and study various quality management systems in pharmacy field.	Analyzing
	5. Determine the requirements and approval procedures for new drugs by Indian regulatory	Evaluating
BP703T Pharmacy Practice	1. Acquire the knowledge on organization of hospitals, various methods of distribution and hospital formulary in hospitals and apply it in the practice of pharmacy.	Understanding
	2. Outline the organization and structure of community pharmacy and to build ability to design and run own community pharmacy.	Understanding
	3. Demonstrate the knowledge of therapeutic drug monitoring, patient medication history interview and to apply the knowledge on assessment of drug related problems	Understanding
	4. Explain the principles of drug store management and inventory control methods during practice.	Understanding
	5. Interpret clinical laboratory tests of specific disease states to provide better patient centered service	Evaluating



BP704T Novel Drug Delivery System	1. Explain needs & safety of novel pharmaceuticals for community	Evaluating
	2. Justify proper use of Novel drug delivery system for various purposes	Evaluating
	3. Understand and apply basic concepts of nanotechnology and nanoscience	Applying
	4. Discuss & improve stability aspect of pharmaceutical for patient safety.	Creating
	5. Design & develop novel drug delivery system for community	Creating
BP705P Instrumental Methods of Analysis	1. Recall the principle involved in spectroscopy and importance of absorption maximum in the estimation of organic compounds	Remembering
	2. Experiment with selected drugs by UV, Visible spectroscopy and fluorimetry	Applying
	3. Estimate the amount of sodium and potassium ions by flame photometry	Creating
	4. Analyze the various organic compounds using turbidimetry	Analyzing
BP706PS Practice School	1. Develop familiarize with the aspects of realistic practice in the domain of interest.	Applying




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	2. Develop knowledge and skills related to practical learning in the domain of interest.	Applying
	3. Analyze the problems encountered during realistic practice and make use of theoretical knowledge to resolve those problems.	Analyzing
B.Pharm IV (Sem-VIII)		
On successful completion of the course, the students will be able to		
BP801T Biostatistics and Research Methodology	1. Explain the operation of M.S. Excel, SPSS, R and MINITAB , DoE (Design of Experiment)	Evaluating
	2. Explain the various statistical techniques to solve statistical problems	Evaluating
	3. Appreciate statistical techniques in solving the problems.	Evaluating
BP802T Social and Preventive Pharmacy	1. Examine consciousness/realization of current issues related to health and pharmaceutical problems within the country	Applying
	2. Build the critical way of thinking based on current healthcare development	Creating
	3. Evaluate alternative ways of solving problems related to health and pharmaceutical issues	Evaluating
BP803ET Pharma Marketing Management	1. Understanding of marketing concepts and techniques and their applications in the pharmaceutical industry	Understanding
	2. Survey marketing management groom the people for taking a challenging role in Sales and Product management.	Analyzing
	3. Distinction between marketing & selling environment; Industry and competitive analysis;	Analyzing
	4. Analyzing consumer buying behavior; industrial buying behavior.	Analyzing
	5. Discuss pricing methods and strategies, issues in price management in pharmaceutical industry	Creating
BP804 ET Pharmaceutical Regulatory Science	1. Discuss about the process of drug discovery and development	Creating
	2. Explain the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals	Evaluating
	3. Explain Pharmacovigilance - safety monitoring in clinical trials	Evaluating
	4. Analyze export of pharmaceutical products in overseas market	Analyzing
	1. Analyze Adverse drug reaction reporting systems and communication in pharmacovigilance	Analyzing




BP805ET Pharmacovigilance	2. Explain Drug safety evaluation in pediatrics, geriatrics, pregnancy and lactation	Evaluating
	3. Discuss Writing case narratives of adverse events and their quality	Creating
	4. Discuss International standards for classification of diseases and drugs	Creating
	5. Determine Detection of new adverse drug reactions and their assessment	Evaluating
BP806ET Quality Control and Standardization of Herbals	1. Explain WHO guidelines for quality control of herbal drugs	Evaluating
	2. Explain quality assurance in herbal drug industry	Evaluating
	3. Discuss the regulatory approval process and their registration in Indian and international markets	Creating
	4. Discuss EU and ICH guidelines for quality control of herbal drugs	Creating
BP807ET Computer Aided Drug Design	1. Explain computers in preclinical development	Evaluating
	2. Explain Optimization Techniques in Pharmaceutical Formulation	Evaluating
	3. Summarize Computers in Market Analysis	Evaluating
	4. Relate artificial intelligence (AI) and robotics	Creating
	5. The design of new drug molecules using molecular modeling software	Creating
BP808ET Cell and Molecular Biology	1. Summarize cell and molecular biology history.	Understanding
	2. Explain the chemical foundations of cell biology.	Evaluating
	3. Describe cellular membrane structure and function	Evaluating
	4. Describe basic molecular genetic mechanisms	Evaluating
BP809ET Cosmetic Science	1. Understand the principles of formulation and building blocks of various skin care products and hair care products	Understanding
	2. Discuss the role of herbs in cosmetics and analytical methods for cosmetics	Creating
	3. Evaluate various cosmetics using analytical instruments.	Evaluating
	4. Apply the knowledge gained and develop cosmetics to solve problems associated with skin, hair and scalp.	Applying
BP810ET Experimental Pharmacology	1. Outline various preclinical screening models for diuretics, antiasthmatics and drugs acting on CNS.	Understanding
	2. Construct preclinical screening models for drugs acting on ANS, eye and local anesthetics.	Applying
	3. Analyze the preclinical screening models for drugs acting on CVS.	Analyzing
	4. Appraise the preclinical screening models for drugs like	Evaluating



	antiulcer, antidiabetic and anticancer agents.	
BP811ET Advanced Instrumentation Techniques	1. Simplify the importance of calibration and validation of analytical instruments as per ICH and USFDA guidelines	Crating
	2. Elaborate various principles and procedure employed in radio immuno assay and extraction techniques	Crating
	3. Detail the principle, instrumentation and applications of hyphenated techniques.	Understanding
	4. Understand the principle and procedure involved in selected instrumental analytical techniques	Understanding
BP812ET Dietary Supplements and Nutraceuticals	1. Understand the need of supplements by the different group of people to maintain healthy life	Understanding
	2. Understand the outcome of deficiencies in dietary supplements	Understanding
	3. Appreciate the components in dietary supplements and the application	Evaluating
	4. Appreciate the regulatory and commercial aspects of dietary supplements including health claims	Evaluating




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