



Navmaharashtra Shikshan Mandal's
**ABASAHEB KAKADE COLLEGE OF
B.PHARMACY BODHEGAON**



Tal – Shevgaon Dist – Ahmednagar 414503,

email kakadebpharmacy@gmail.com

Course Outcomes (COs) A.Y 2023-24

Course code/ Course title	Course outcomes
B. Pharmacy I Semester (2019 Pattern)	
BP101T Human Anatomy and Physiology I	The students should be able to: 1) Explain the gross morphology, structure and functions of various organs of the human body. 2) Describe the various homeostatic mechanisms and their imbalances. 3) Identify the various tissues and organs of different systems of human body. 4) Perform the various experiments related to special senses and nervous system. 5) Appreciate coordinated working pattern of different organs of each system
BP102T Pharmaceutical Analysis-I	The students should be able to: 1) The principles of volumetric and electrochemical analysis. 2) Carry out various volumetric and electrochemical titrations. 3) Develop analytical skills.
BP103T Pharmaceutics- I	The students should be able to: 1) Know the history of profession of pharmacy 2) Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations 3) Understand the professional way of handling the prescription 4) Preparation of various conventional dosage forms
BP104T Pharmaceutical Inorganic Chemistry	The students should be able to: 1) Know the sources of impurities and methods to determine the impurities in drugs and pharmaceuticals 2) Understand the medicinal and pharmaceutical importance of inorganic compounds

<p>BP105T Communication skills</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the behavioral needs for a Pharmacist to function effectively in the areas of pharmaceutical operation 2) Communicate effectively (Verbal and Non Verbal) 3) Effectively manage the team as a team player 4) Develop interview skills 5) Develop Leadership qualities and essentials
<p>BP106RBT Remedial Biology</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) know the classification and salient features of five kingdoms of life 2) understand the basic components of anatomy & physiology of plant 3) know understand the basic components of anatomy & physiology animal with special reference to human
<p>BP106RMT Remedial Mathematics</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Know the theory and their application in Pharmacy 2) Solve the different types of problems by applying theory 3) Appreciate the important application of mathematics in Pharmacy
<p>BP107P Anatomy and Physiology-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Examine and correlate hematological parameters with clinical conditions in relevance to the health care. 2) Identify the different bones, various models/specimen/slides of human organs and tissues 3) Demonstrate the measurement of blood pressure.
<p>BP108P Pharmaceutical Analysis-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Impart knowledge in preparation and standardization of solutions with different strength. 2) Perform volumetric analysis such as acidimetric and alkalimetry, oxidation and reduction, complexometry, precipitation and non-aqueous titration. 3) Perform electro-analytical methods.
<p>BP109P Pharmaceutics-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Develop skills in compounding and dispensing of dosage forms 2) Gain knowledge about the principle and preparation procedure related to syrups, elixirs, linctus and gargles & mouth washes. 3) Gain knowledge about the principle and preparation procedure related to solutions, suspensions, emulsions and suppositories 4) Gain knowledge about various dosage forms. 5) Gain knowledge about prescription.
<p>BP110P Pharmaceutical Inorganic Chemistry</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Perform quality control tests in limiting traces of impurities present in pharmaceuticals by performing limit tests. 2) Prepare and evaluate pharmaceutical inorganic compounds. 3) Identify cations and anions present in the inorganic drugs.
<p>BP111P Communication Skill</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Communicate effectively with different group of peoples. 2) Describe different elements of pronunciation. 3) Explain the concepts of effective writing, presentation, and interview.

BP112RBP Remedial Biology	The students should be able to: 1) Explain microscopic techniques, staining techniques and permanent slide preparation 2) Perform Microscopic study and identification of tissues pertinent to Stem, Root, Leaf, seed, fruit and flower. 3) Determine the blood group and blood pressure
B. Pharmacy II Semester (2019 Pattern)	
BP201T Anatomy and Physiology-II	The students should be able to: 1) Explain the gross morphology, structure and functions of various organs of the human body. 2) Describe the various homeostatic mechanisms and their imbalances. 3) Identify the various tissues and organs of different systems of human body. 4) Perform the hematological tests like blood cell counts, hemoglobin estimation, bleeding/clotting time etc. and also record blood pressure, heart rate, pulse and respiratory volume. 5) Appreciate coordinated working pattern of different organs of each system 6) Appreciate the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body.
BP202T Pharmaceutical Organic Chemistry –I	The students should be able to: 1) Write the structure, name and the type of isomerism of the organic compound 2) Write the reaction, name the reaction and orientation of reactions 3) Account for reactivity/stability of compounds 4) Identify/confirm the identification of organic compounds
BP203T Biochemistry	The students should be able to: 1) Understand the catalytic role of enzymes and importance of enzyme in biochemical process. 2) Understand the metabolism of nutrient molecules in physiological and pathological conditions. 3) Understand the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins.
BP204T Pathophysiology	The students should be able to: 1) Describe the etiology and pathogenesis of the selected disease states; 2) Name the signs and symptoms of the diseases Explain the etiology, signs and symptoms, and clinical interpretation of infectious diseases 3) Explain the etiology, signs and symptoms, and clinical interpretation of Sexually transmitted diseases. 4) Explain the cardiovascular system with Diseases related cardiovascular system.
BP205T Computer Applications in Pharmacy	The students should be able to: 1) know the various types of application of computers in pharmacy 2) Know the various types of databases 3) Know the various applications of databases in pharmacy.

<p>BP206T Environmental Sciences</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Create the awareness about environmental problems among learners. 2) Impart basic knowledge about the environment and its allied problems. 3) Develop an attitude of concern for the environment. 4) Motivate learner to participate in environment protection and environment improvement. 5) Acquire skills to help the concerned individuals in identifying and solving environmental problems. 6) Strive to attain harmony with Nature.
<p>BP207P Anatomy and Physiology II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Demonstrate senses, nervous system and endocrine system using models 2) Determination of tidal volume and vital capacity 3) Demonstrate digestive, respiratory, cardiovascular systems, urinary and reproductive systems with the help of models and specimens.
<p>BP208P Pharmaceutical Organic Chemistry-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Perform systematic qualitative analysis of unknown organic compounds 2) Preparation of organic derivatives through oxidation and reduction, acetylation, esterification and etherification and halogenation. 3) Demonstrate the structure and reactivity of organic compounds using molecular models
<p>BP209P Biochemistry</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Perform qualitative analysis of carbohydrates, proteins and lipids. 2) Estimate blood glucose and blood cholesterol levels. 3) Estimate creatinine levels in urine and liver function test.
<p>BP210P Computer Applications in Pharmacy</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Create a HTML web page to show personal information. 2) Create a MS Access database to store the patient and drug information 3) Create mailing labels using Label Wizard in MS WORD
<p>B. Pharmacy III Semester (2019 Pattern)</p>	
<p>BP301T Pharmaceutical Organic Chemistry –II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Write the structure, name and the type of isomerism of the organic compound 2) Write the reaction, name the reaction and orientation of reactions. 3) Account for reactivity/stability of compounds. 4) Prepare small organic compounds.
<p>BP302T Physical Pharmaceutics-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Investigate and apply various theories, laws and equations related to different states of matter 2) Distinguish the principles of complexation/ protein binding & to use them for calculations of drug release and stability constant. 3) Demonstrate use of physicochemical properties of drugs in the formulation development and evaluation of dosage forms.

	4) Describe the role of buffers in pharmaceutical and biological systems
BP303T Pharmaceutical Microbiology	The students should be able to: 1) Understand methods of identification, cultivation and preservation of various Microorganisms 2) To understand the importance and implementation of sterilization in pharmaceutical processing and industry 3) Learn sterility testing of pharmaceutical products. 4) Carried out microbiological standardization of Pharmaceuticals. 5) Understand the cell culture technology and its applications in pharmaceutical industries.
BP304T Pharmaceutical Engineering	The students should be able to: 1) To know various unit operations used in Pharmaceutical industries. 2) To understand the material handling techniques. 3) To perform various processes involved in pharmaceutical manufacturing process. 4) To carry out various test to prevent environmental pollution. 5) To appreciate and comprehend significance of plant lay out design for optimum use of resources. 6) To appreciate the various preventive methods used for corrosion control in Pharmaceutical industries.
BP305P Pharmaceutical Organic Chemistry –II	The students should be able to: 1) Perform systematic qualitative analysis of unknown organic compounds 2) Determine the analytical constants (Acid value, Saponification value, Ester value, Iodine value, Acetyl value, Reichert Meisel (RM) value) 3) Prepare organic derivatives through oxidation, acetylation, esterification, diazotization, Claisen Schmidt reaction and Perkin Reaction
BP306P Physical Pharmaceutics-I	The students should be able to: 1) Determine the solubility, pKa value and partition coefficient of pharmaceutical products. 2) Determine the surface tension, HLB number, Freundlich and Langmuirconstant of pharmaceutical products. 3) Determine the critical micellar concentration, stability constant and donor acceptor ratio of pharmaceutical complexes
BP307P Pharmaceutical Microbiology	The students should be able to: 1) Explain the principles of sterilization, performing sterility testing of pharmaceuticals and sterilization of media... 2) Prepare nutrient stabs and slants, perform sub culturing and motility determination of bacteria and fungus.... 3) Perform microbiological analysis of water and antibiotics.

BP308P Pharmaceutical Engineering	The students should be able to: 1) Determine the moisture content, loss on drying and humidity of air 2) Perform size analysis by sieving techniques 3) Study the effect of time on the rate of crystallization
B. Pharmacy IV Semester (2019 Pattern)	
BP401T Pharm. Organic Chemistry III	The students should be able to: 1) Understand the methods of preparation and properties of organic compounds. 2) Explain the stereochemical aspects of organic compounds and stereo chemical reactions. 3) Know the medicinal uses and other applications of organic compounds Explain the synthesis, reactions and medicinal Pyrazole, Imidazole, Oxazole and Thiazole Pyridine, Quinoline, Isoquinoline, Acridine and Indole derivatives. 4) Explain the principle and pharmaceutical application of metal hydride reduction, Clemmensen reduction, Birch reduction, Wolff Kishner reduction, Oppenauer-oxidation, Dakin, Beckmanns rearrangement, Schmidt rearrangement and Claisen-Schmidt condensation reactions.
BP402T Medicinal Chemistry – I	The students should be able to: 1) Understand the chemistry of drugs with respect to their pharmacological activity. 2) Understand the drug metabolic pathways, adverse effect and therapeutic value of Drugs. 3) Know the Structural Activity Relationship (SAR) of different class of drugs. 4) Write the chemical synthesis of some drugs.
BP403T Physical Pharmaceutics-II	The students should be able to: 1) Relate various physicochemical properties of drug and excipient molecules in designing the dosage forms 2) Distinguish the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations 3) Demonstrate the behavior and mechanism of drugs and excipients in the formulation development and evaluation of dosage forms. Describe the concept of particle size and distribution, derived properties, porosity, packing arrangement, densities, bulkiness & flow properties of powders 4) Explain the stability of drug, factors influencing the chemical Degradation of pharmaceutical dosage forms.

<p>BP404T Pharmacology-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the pharmacological actions of different categories of drugs. 2) Explain the mechanism of action at organ system/sub cellular/macromolecular levels. 3) Apply the basic pharmacological knowledge in the prevention and treatment of various diseases. 4) Observe the effects of drugs on animal by simulated experiments. 5) Appreciate correlation of pharmacology with other bio medical sciences
<p>BP405T Pharmacognosy and phytochemistry- I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) To know the techniques in the cultivation and production of crude drugs 2) To know the crude drugs, their uses and chemical nature 3) know the evaluation techniques for the herbal drugs 4) To carry out the microscopic and morphological evaluation of crude drugs
<p>BP406P Medicinal Chemistry – I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Prepare intermediate compounds and drugs of medicinal importance 2) Analyze and determine the purity of drug present in the bulk and dosage forms. 3) Determine the partition coefficient of pharmaceutical agents.
<p>BP407P Physical Pharmaceutics- II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Determine the particle size distribution, bulk density, true density and porosity of pharmaceuticals 2) Determine the viscosity and sedimentation volume of pharmaceuticals 3) Determine the reaction rate, constant first order, reaction rate constant second order, accelerated stability studies of pharmaceuticals
<p>BP408P Pharmacology-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Explain and adopt the guidelines prescribed by the CPCSEA for the maintenance and handling of laboratory animals 2) Excel in the techniques such as blood withdrawal, serum and plasma separation, anesthetics and euthanasia 3) Explain the advantages and effectiveness of computer simulated animal experiments.
<p>BP409P Pharmacognosy and phytochemistry- I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Perform chemical tests and morphological evaluation to report on the phytochemical nature of crude drugs 2) Determine phytochemical constants such as ash value, extractive values, moisture content, swelling index, stomatal number, vein islet number, vein 3) Determine the number and size of starch grains, fiber length and fiber width

B. Pharmacy V Semester (2019 Pattern)

<p>BP501T Medicinal Chemistry – II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the chemistry of drugs with respect to their pharmacological activity 2) Understand the drug metabolic pathways, adverse effect and therapeutic value of drugs 3) Know the Structural Activity Relationship of different class of drugs 4) Study the chemical synthesis of selected drugs
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<p>BP502T Industrial Pharmacy-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Illustrate various pharmaceutical dosage forms and their manufacturing techniques. 2) describe various factors to be considered in development of pharmaceutical dosage forms. 3) Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality.
<p>BP503T Pharmacology – II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the mechanism of drug action and its relevance in the treatment of different diseases 2) Demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments 3) Demonstrate the various receptor actions using isolated tissue preparation 4) Appreciate correlation of pharmacology with related medical sciences
<p>BP504T Pharmacognosy and phytochemistry -II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) To know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents 2) To understand the production of of Phytoconstituents /herbal formulation. 3) To understand the metabolic pathways in formation of secondary metabolites and application of biogenetic studies. 4) To carryout isolation and identification of phytoconstituents.
<p>BP505T Pharmaceutical Jurisprudence</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) The Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals. 2) Various Indian pharmaceutical Acts and Laws 3) The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals 4)The code of ethics during the pharmaceutical practice 5) Describe the importance of Medical Termination of Pregnancy Act,Right to Information Act and Intellectual Property Rights (IPR)
<p>BP506P Industrial Pharmacy-I</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Perform pre-formulation studies, coating and evaluation of tablets 2) Prepare and evaluate creams and injections 3) Perform the quality control test for marketed tablets and capsules
<p>BP507P Pharmacology – II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Demonstrate effect of drugs on isolated organs/tissues by simulated experiments 2) Demonstrate the effect of drugs on through bioassay 3) Determine PA₂ value, PD₂ value, effect of spasmogens and spasmolytics, anti-inflammatory activity and analgesic activity

<p>BP508P Pharmacognosy and phytochemistry -II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Explain the morphology, powder characteristics and identification tests of phytoconstituents 2) Isolate and detect the active phytoconstituents 3) Identification and separation of phytoconstituents through paper and thin-layer chromatography
<p>B. Pharmacy VI Semester (2019 Pattern)</p>	
<p>BP601T Medicinal Chemistry – III</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the importance of drug design and different techniques of drug design. 2) Understand the chemistry of drugs with respect to their biological activity. 3) Know the metabolism, adverse effects and therapeutic value of drugs. 4) Know the importance of SAR of drugs.
<p>BP602T Pharmacology – III</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the mechanism of drug action and its relevance in the treatment of different infectious diseases 2) Comprehend the principles of toxicology and treatment of various poisonings and appreciate correlation of pharmacology with related medical sciences. 3) Describe the pharmacology and mechanism of action of autacoids and related drugs. 4) Explain the basic concepts in endocrine pharmacology and pharmacology of analogues and inhibitors 5) Explain the principles and applications of bioassay.
<p>BP603T Herbal Drug Technology</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand raw material as source of herbal drugs from cultivation to herbal drug product 2) Know the WHO and ICH guidelines for evaluation of herbal drugs 3. Know the herbal cosmetics, natural sweeteners, and nutraceuticals 4) Appreciate patenting of herbal drugs, GMP.
<p>BP604T Biopharmaceutics and Pharmacokinetics</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the basic concepts in bio pharmaceutics and pharmacokinetics and their significance. 2) Use plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination. 3) Understand the concepts of bioavailability and bioequivalence of drug products and their significance. 4) Understand the concept of dissolution and application of in vitro in vivo correlation in drug product development.
<p>BP605T Pharmaceutical Biotechnology</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Biotechnology has a long promise to revolutionize the biological sciences and technology. 2) Scientific application of biotechnology in the field of genetic engineering, medicine and fermentation technology makes the subject interesting. 3) Biotechnology is leading to new biological revolutions in diagnosis, prevention and cure of diseases, new and cheaper pharmaceutical drugs. 4) Biotechnology has already produced transgenic crops and animals and the future promises lot more. 5) It is basically a research-based subject.

<p>BP606T Pharmaceutica I Quality Assurance</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the cGMP aspects in a pharmaceutical industry. 2) Appreciate the importance of documentation. 3) Understand the scope of quality certifications applicable to pharmaceutical industries. 4) Understand the responsibilities of QA & QC departments.
<p>BP607P Medicinal Chemistry – III</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Prepare intermediate compounds and drugs of medicinal importance. 2) Analyze and determine the purity of drug present in the bulk and dosage forms. 3) Determine the physicochemical and druglike properties of drugs using drug design softwares. 4) drug design softwares.
<p>BP608P Pharmacology – III</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Demonstrate the agonist and antagonist effect of drugs on simulated experiments. 2) Evaluate the toxicity aspects of drugs and related products on simulated experiments. 3) Calculate and evaluate the pharmacological effect through calculation of pharmacokinetic parameters using biostatistics methods (ANOVA)
<p>BP609P Herbal Drug Technology</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Determine the alcohol content of Asava and Arista products 2) Prepare and evaluate cosmetic creams, lotions, shampoos, syrups, mixtures and tablets as per Pharmacopoeial requirements 3) Determine the aldehyde content, phenol content and total alkaloids of herbal formulations

B. Pharmacy VII Semester (2019 Pattern)

<h3 style="text-align: center;">B. Pharmacy VII Semester (2019 Pattern)</h3>	
<p>BP701T Instrumental Methods of Analysis</p>	<p>The students should be able to:</p> <p>Upon completion of the course the student shall be able to</p> <ol style="list-style-type: none"> 1) Illustrate the interaction of matter with electromagnetic radiations and justify its applications in drug analysis 2) Classify the chromatographic separation methods and choose appropriate technique for analysis of drugs. 3) Design methods for performing quantitative & qualitative analysis of drugs using various analytical instruments.
<p>BP702T Industrial Pharmacy-II</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Know the process of pilot plant and scale up of pharmaceutical dosage forms 2) Understand the process of technology transfer from lab scale to commercial batch 3) Know different Laws and Acts that regulate pharmaceutical industry 4) Understand the approval process and regulatory requirements for drug products

<p>BP703T Pharmacy Practice</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Know various drug distribution methods in a hospital 2) Appreciate the pharmacy stores management and inventory control 3) Monitor drug therapy of patient through medication chart review and clinical review. 4) Obtain medication history interview and counsel the patients 5) Identify drug related problems 6) Detect and assess adverse drug reactions 7) Know pharmaceutical care services 8) Do patient counseling in community pharmacy; 9) Appreciate the concept of rational drug therapy.
<p>BP704T Novel Drug Delivery System</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) To understand various approaches for development of novel drug delivery systems. 2) To understand the criteria for selection of drugs and polymers for the development of novel drug delivery systems, their formulation and evaluation. 3) Describe the development and applications of intra uterine devices (IUDs) and applications.
<p>BP705P Instrumental Methods of Analysis</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Estimate the amount of drugs present in the pharmaceutical products using colorimetric, UV visible and Fluorometric principles 2) Determine the ions through flame photometry and nephelo turbidometry methods 3) Separate and evaluate the natural products using paper, thin layer chromatography and column chromatography techniques
<p>BP706PS Practice School</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Carry out advanced experimental procedures in the drug development disciplines 2) Explain the concepts of advanced drug design and development concepts 3) Describe the advances in the areas of pharmacology, biotechnology and drug delivery systems
<p>B. Pharmacy VIII Semester (2019 Pattern)</p>	
<p>BP801T Biostatistics and Research Methodology</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Know the operation of M.S. Excel, SPSS, R and MINITAB®, DoE (Design of Experiment) 2) Know the various statistical techniques to solve statistical problems 3) Appreciate statistical techniques in solving the problems. Describe the principle, methodology. 4) Know Applications of factorial design and response surface methodology techniques in the pharmaceutical processes.
<p>BP802T Social and Preventive Pharmacy</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide. 2) Develop a critical way of thinking based on current health care development. 3) Evaluate alternative ways of solving problems related to health and pharmaceutical issues. 4) Explain the importance and execution of the Health promotion and education programs in schools.

<p align="center">BP803ET Pharma Marketing Management</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) The course aims to provide an understanding of marketing concepts and techniques and their applications in the pharmaceutical industry. 2) Describe the functions of pharmaceutical marketing channels 3) Explain the functions of Drug Price Control Order and National Pharmaceutical Pricing Authority
<p align="center">BP804ET Pharmaceutical Regulatory Science</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Explain the concept, scope and benefits of the generic drug product development 2) Know about the process of drug discovery and development 3) Know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals 4) Know the regulatory approval process and their registration in Indian and international markets.
<p align="center">P805ET Pharmacovigilance</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) At completion of this paper it is expected that students will be able to (know, do, and appreciate): 2) Understand importance of drug safety monitoring. 3) Explain History, development, National and international scenario of pharmacovigilance & comprehend dictionaries, coding and terminologies used in pharmacovigilance 4) Understand detection and assessment of new adverse drug reactions, Adverse drug reaction reporting systems and communication in pharmacovigilance, Pharmacovigilance Program of India (PvPI) requirement for ADR reporting in India ICH guidelines for ICSR, PSUR, expedited reporting, pharmacovigilance planning. CIOMS requirements for AD Rreporting 5) Comprehend methods of safety data during pre-clinical, clinical and post approval phases of drugs' lifecycle. 6) Write case narratives of adverse events and their quality.
<p align="center">BP806ET Quality Control and Standardization of Herbals</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Know WHO guidelines for quality control of herbal drugs 2) Know Quality assurance in herbal drug industry 3) Know the regulatory approval process and their registration in Indian and international markets 4) Appreciate EU and ICH guidelines for quality control of herbal drugs
<p align="center">BP807ET Computer-Aided Drug Design</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the design and discovery of lead molecules 2) Classify the role of drug design tools for drug discovery process 3) Understand and analyses concepts of QSAR and docking 4) Analyze and apply various strategies to develop new drug like molecules. 5) Use various molecular modeling software to design new drug molecule
<p align="center">BP808ET Cell and Molecular Biology</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Summarize cell and molecular biology history, cellular functioning and Composition & describe the chemical foundations of cell biology. 2) Describe cellular membrane structure and function properties and functions of DNA, Cell Cycle. 3) Describe basic molecular genetics mechanisms. 4) Understand the cell signaling pathways with their regulations and role in disease process.

<p align="center">BP809ET Cosmetic Science</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the concepts of cosmetics; anatomy of skin v/s hair, general excipients used in cosmetics. 2) Explain the concept of cosmeceuticals, history, difference between cosmetics & cosmeceuticals & cosmeceuticals agents 3) Know different Laws and Acts that regulate pharmaceutical industry 4) Understand the approval process and regulatory requirements for drug products
<p align="center">BP810ET Pharmacological screening methods</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the applications of various commonly used laboratory animals. 2) Demonstrate the various screening methods used in preclinical research. 3) Comprehend and demonstrate the importance of biostatistics and research methodology. 4) Design and execute a research hypothesis independently.
<p align="center">BP811ET Advanced Instrumentation Techniques</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Express the principle of the advanced instruments used and justify its applications in drug analysis 2) Understand the principles of analytical techniques and its application in analysis of drugs 3) Explain the importance and methods for the calibration of various analytical instruments 4) Formulate and justify techniques for the analysis of drugs using various analytical instruments.
<p align="center">BP812ET Dietary Supplements and Nutraceuticals</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Understand the need of supplements by the different group of people to maintain healthy life. 2) Understand the outcome of deficiencies in dietary supplements. 3) Recognize the components in dietary supplements and the application. 4) Acquaint with the regulatory and commercial aspects of dietary supplements including health claims.
<p align="center">BP813PW Project Work</p>	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1) Study on multidisciplinary areas related to pharmacy profession. 2) Develop required skills for technical presentation. 3) Concentrate on specific topic in scientific and pharmacy fields. 4) Gain more advanced knowledge of the research and manuscript writing 5) Describe new trends among group of students and faculties.

Barbor
**COORDINATOR
IQAG**



Assaneb Kakade
PRINCIPAL
Assaneb Kakade College of B. Pharmacy
Bodhegaon, Tal. Shevgaon, Dist. A.Nagar