COURSE OUTCOME

The course outcomes shall provide an opportunity for students to demonstrate the knowledge, skills and expertise acquired from the specific course. On completion of these courses the students will be able to gain (Theoretical knowledge) and demonstrate (Practical skills wherever applicable). The course outcomes are thus directly assessed, and are related to the program outcomes. Therefore if the course outcomes are met, the program outcomes are met.

PROCESS FOR PREPARATION OF COURSE OUTCOMES (COS)

1. The COs of all subjects are outlined in the PCI syllabus of B.Pharmacy.
2. Every subject teacher shall prepare the course outcomes for their respective subject (Theory and Practical).
3. The COs shall be described in five/four points each for theory and practical covering the complete syllabus.
4. The course outcomes shall be reframed for a particular subject, in case of any, modifications done in the syllabus by the affiliating university.

The COs of all subjects are prepared by our subject teacher which is approved by NAAC Co-ordinator and Principal.

FABTECH COLLEGE OF PHARMACY SANGOLA

I[ST] SEMESTER

Subject	Course Outcome No.	Course Outcome
Human Anatomy and Physiology-I (BP101T)	CO1	Explain the gross morphology, structure and functions of various cells and tissues of the 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	Explain body fluid composition, structure and functions blood cells, summarize the cardiovascular and lymphatic systems.
	CO5	Describe the basic points involved in peripheral nervous system along with special sensory organs.
Pharmaceutical Analysis-I (BP102T)	CO1	Memorize basic study which covers Pharmaceutical analysis.
	CO2	Describe various acid-base and non-aqueous titrations.
	CO3	Identify various basic concepts involved in precipitation, complexometric and diazotization, gravimetric titration.
	CO4	Illustrate concept behind redox titrations.
	CO5	Explain electrochemical methods of analysis ex-conductometry, potentiometric and polarography method.
Pharnaceutics-I (BP103T)	CO1	Memorize historical background and development of profession of pharmacy along with special emphasis on dosage form, prescription and posology.
	CO2	Solve various pharmaceutical calculations and discuss about powder and liquid dosage forms.
	CO3	Explain the basics involved in monophasic and biphasic liquid dosage forms.
	CO4	Describe the concept of suppository along with study of pharmaceutical incompatibilities.
	CO5	Discuss about the various semisolid dosage forms.
Pharmaceutical Inorganic Chemistry (BP104T)	CO1	Know about pharmacopoeias and learn impurity identification.
	CO2	Describe buffers for analytical and pharmaceutical purposes, explain major extra and intracellular electrolytes and dental products.
	CO3	Explain buffers for analytical and pharmaceutical purposes using the knowledge of dissociation constant, buffer capacity, NaCl equivalence and freezing point depression, antimicrobial agent.
	CO4	Explain basic understanding of GIT disease formation and mechanism of action of gastrointestinal agents inorganic drugs. Explain and apply

		radiopharmaceuticals.
	CO5	Discuss disease etiology and properties of inorganic compound and mechanism of drug action for expectorants, emetics, haematinics, antidotes and astringents.
Communication Skill (BP105T)	CO1	To identifying potential misunderstandings of communication
	CO2	To effectively convey message by carefully considering the components of communication
	CO3	To convey information clearly, concisely and accurately to the intended audience
	CO4	To effectively showcase your qualification, ability and personality to a potential employer during an interview.
	CO5	To develop critical thinking, problem-solving leadership, listening, time management, flexibility and adaptability.
Remedial Biology (BP106RBT)	CO1	Describe the basic structure and function of prokaryotic and eukaryotic cells.
	CO2	Explain the structure and functions of biomolecules such as proteins, carbohydrates, lipids, and nucleic acids.
	CO3	Illustrate basic concepts of genetics including Mendelian inheritance and DNA replication
	CO4	Understand the basic principles of evolution and classification of organisms.
	CO5	Relate biological concepts to engineering problems and emerging technologies (e.g., biosensors, bioinformatics).
Remedial Mathematics (BP106RMT)	CO1	Understand the concepts of Partial Fraction, Logarithm , Function , Limits and Continuity .
	CO2	Solve problems related to Matrices and Determinants.
	CO3	Understand the concepts of Calculus – Differentiation and Integration.
	CO4	Understand the concept of Analytical Geometry.
	CO5	Analyze the Pharmaceutical Differential equations and Laplace transform.
Human Anatomy and Physiology-I (BP107P)	CO1	Describe anatomical features of the important human tissue under microscopical condition
	CO2	Study about the gross structure and function of cell, tissue, skeletal, muscular and cardiovascular system of human body.
	CO3	Understood the various homeostatic mechanism and their imbalances.
	CO4	Understand and apply the basic knowledge of practical human anatomy and physiology.
	CO5	Learn various techniques like blood group techniques, blood group determination, blood pressure measurement, blood cell counting.

Pharmaceutical Analysis-I (BP108P)	CO1	Demonstrate the knowledge and skills involved in the limit test of chloride, sulphate, iron and arsenic in pharmaceutical substance.
	CO2	Test the standardization of sodium hydroxide, sulphuric acid, sodium thiosulphate, etc.
	CO3	Analyze the various compounds by performing assay along with standardization of titrant.
	CO4	Determine the normality of various unknown samples by electro-analytical methods.
Pharnaceutics-I (BP109P)	CO1	Describe the procedure for preparation of various monophasic liquid dosage forms namely syrups, elixirs, linctus, solutions, gargles and Mouthwashes.
	CO2	Explain the procedure for preparation of various biphasic liquid dosage forms namely suspension and emulsion.
	CO3	Illustrate the procedure for preparation of powders, granules and suppository.
	CO4	Locate an appropriate method for preparation of various semisolid dosage forms.
	CO5	Predict effective interpersonal written and verbal skill.
Pharmaceutical Inorganic Chemistry (BP110P)	CO1	Find specific impurities present in pharmaceutical compounds by performing limit test.
	CO2	Determine the Swelling power of inorganic pharmaceuticals.
	CO3	Estimate Acid neutralizing capacity of inorganic pharmaceuticals
	CO4	Use different chemical methods to prepare medicinally important inorganic compounds.
	CO5	Perform identification test of the given sample of pharmaceuticals as per Indian Pharmacopoeia.
Communication Skill (BP111P)	CO1	To improve the students ability to communicate in oral and written communication
	CO2	To revise the grammar in the application and the communication task
	CO3	To emphasize the essential critical component of effective written communication necessary for professional development
	CO4	To enable the students to adopt strategies for effective reading and writing skills
	CO5	To carry out regular interpersonal communication at the workplace by having an adequate understanding of the various types of communication

Remedial Biology (BP112RBP)	**CO1**	Study of Microscope, Section cutting techniques, Mounting and staining, Permanent slide preparation.
	CO2	Study of cell and its inclusions,Determination of blood group
	CO3	Study of Stem, Root, Leaf, seed, fruit, flower and their modifications
	CO4	Microscopic study and identification of tissues pertinent to Stem, Root,Leaf, seed, fruit and flower

Sign. of NAAC- Co-ordinator

Dr. Kazi S. M.

FABTECH COLLEGE OF PHARMACY SANGOLA

Dr SK Bais.

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IInd SEMESTER

Subject	Course Outcome No.	Course Outcome
Human Anatomy and Physiology-II (BP201T)	**CO1**	Demonstrate & understand the gross morphology, structure and functions of various organs of the human body.
	CO2	Demonstrate & understand the general neurological cells & nervous system using model.
	CO3	Describe the respiratory system and urinary system along with their disorder.
	CO4	Understand the concept of genetics and protein synthesis in detail
	CO5	Elaborate the endocrine system and the hormones of the various glands with their disorder.
Pharmaceutical Organic Chemistry-I (BP202T)	**CO1**	Understand classification of organic compounds. Apply IUPAC nomenclature rules for naming organic compounds and to draw structure.
	CO2	Understand methods of Preparation of Alkanes, Alkenes and Conjugated dienes. To study reactions and uses of Alkanes, Alkenes and Conjugated dienes.
	CO3	Study and understand preparation methods, reactions, qualitative tests and uses of Alkyl halide and Alcohol compounds.
	CO4	Study and understand preparation methods, reactions, qualitative tests and uses of Carbonyl compound.
	CO5	Study and understand preparation methods, reactions, qualitative tests for carboxylic acids and amines. Compare acidity of Carboxylic acid and basicity of Aliphatic amines.
Biochemistry (BP203T)	**CO1**	Learn the essential biomolecules of living cells, basics of bioenergetics and energy currency of cells.
	CO2	Understand the metabolism of nutrient molecule of carbohydrates in physiological and pathological condition
	CO3	Understand the metabolism of nutrient molecule of lipids in physiological and pathological condition

	CO4	Understand the genetic organization of mammalian genome and function of DNA in the synthesis of RNA and proteins
	CO5	Understand the catalytic role of enzyme new drug therapeutic and diagnostic importance of enzyme inhibitor in design of application of enzymes
Pathophysiology (BP204T)	CO1	Describe basic principles of cell injury and mechanism of inflammation
	CO2	Discuss pathophysiology of disorders viz CVS, CNS, Respiratory system, GIT, Endocrine system including Cancer
	CO3	Describe pathophysiology of disorders of Bones and Joints
	CO4	Explain pathophysiology of selected infectious diseases
	CO5	Explain pathophysiology of selected infectious diseases including STDs
Computer application in Pharmacy (BP205T)	CO1	Know the various types of application of computers in pharmacy.
	CO2	Know the various types of databases.
	CO3	Know the various applications of databases in pharmacy.
	CO4	Introduction to MS word, MS excel, MS power point etc.
	CO5	Describe how to design a form in MS Access
Environmental Science (BP206T)	CO1	Create the awareness about environmental problems among learners.
	CO2	Impart basic knowledge about the environment and its allied problems.
	CO3	Develop an attitude of concern for the environment.
	CO4	Acquire skills to help the concerned individuals in identifying and solving environmental problems.
	CO5	Strive to attain harmony with Nature.
Human Anatomy and Physiology-II (BP207P)	CO1	Describe integumentary and special senses, nervous and endocrine system using special model.
	CO2	Memories function of olfactory nerve, visual activity and reflux activity along with positive and negative feedback mechanism.
	CO3	Express the method for recording body temperature.
	CO4	Recognize different types of taste.
	CO5	Reproduce theoretical knowledge of human anatomy and physiology.

Pharmaceutical Organic Chemistry-I (BP208P)	**CO1**	Understand basic safety measures in an organic laboratory and understand handlings of instrument and glassware's used for experiment.
	CO2	Determine physical constant of organic compounds melting point, boiling point and apply basic laboratory techniques distillation, and crystallization.
	CO3	Understand solubility behavior of organic compound and determination of functional group.
	CO4	Perform Systematic qualitative analysis and analyze of unknown organic compounds.
	CO5	Demonstrate building of molecular models of structures containing various functional groups.
Biochemistry (BP209P)	**CO1**	Able to carry out the qualitative analysis of different nutrients such as carbohydrates, proteins and lipids
	CO2	Know to find out the concentration of different biomolecules present in blood or urine sample.
	CO3	Able to carry out urine analysis and find out the normal and abnormal constituents present in it
	CO4	Know to prepare and check the PH of buffers.
	CO5	It describes the factors affecting enzyme activity.
Computer application in Pharmacy (BP210P)	**CO1**	Design a questionnaire using a word processing package to gather information about a particular disease.
	CO2	Create a database, invoice table and HTML web page.
	CO3	Drug information storage and retrieval using MS Access.
	CO4	Exporting Tables, Queries, Forms and Reports to web pages and XML pages.

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III[rd] SEMESTER

Subject	Course Outcome No.	Course Outcome
Pharmaceutical Organic Chemistry-II (BP301T)	CO1	Write the structure, name and the type of isomerism of the organic compound.
	CO2	Able to write mechanisms involved in various reactions that could help the students to understand the synthesis of higher organic compounds.
	CO3	Write the reaction, name the reaction and orientation of reactions.
	CO4	Account for the understanding of analytical constants.
	CO5	Account for stability of cycloalkanes.
Physical Pharmaceutics-I (BP302T)	CO1	To recollect the states of matter and understand the applications of various physiochemical properties to design dosage forms.
	CO2	To gain knowledge of ph and buffers and their use in the stabilization of pharmaceutical formulations
	CO3	To understand the principle of interfacial tension and the applications of surface active agents in drug solubilization
	CO4	To perceive and apply the concepts of complexation and protein binding in pharmacy
	CO5	To gain knowledge of ph and buffers and their use in the stabilization of pharmaceutical formulations
Pharmaceutiacal Microbiology (BP303T)	CO1	Understand methods of identification, cultivation and preservation of various microorganisms.
	CO2	To understand the importance and implementation of sterlization in pharmaceutical processing and industry.
	CO3	Learn sterility testing of pharmaceutical products.
	CO4	Carried out microbiological standardization of Pharmaceuticals.
	CO5	Understand the cell culture technology and its applications in pharmaceutical industries.
Pharmaceutiacal Engineering (BP304T)	CO1	Understand the concepts of Flow of fluids, Size reduction and size separation with importance of various equipment used in these Unit operations
	CO2	Analyze and evaluate the fundamentals of Heat

		transfer and the basic concepts and equipment used for evaporation and distillation with their applications in pharmaceutical industry.
	CO3	Impart knowledge on various types of equipment and applications of Drying and Mixing operations in Pharmaceutical industry
	CO4	Understand and apply the concepts of centrifugation and filtration process and their applications in pharmaceutical industry.
	CO5	Understands about different materials of construction, various types of corrosion and preventive methods used for Corrosion control in Pharmaceutical industries.
Pharmaceutical Organic Chemistry-II (BP305P)	CO1	Formulate synthesis, reaction & principle of various organic compounds.
	CO2	To identify & characterization of organic compounds.
	CO3	Apply recrystallization & Steam distillation methods for purification of synthesized organic compounds.
	CO4	Demonstrate values of fats & oils using giving procedure.
Physical Pharmaceutics-I (BP306P)	CO1	To measure the pKa value, partition coefficient and solubility of drugs.
	CO2	To measure HLB Number, CMC of surfactant , Freundlich and Langmuir Constant.
	CO3	To demonstrate solubility and pH titration method for stability constant and donor acceptor ratio.
	CO4	To measure surface tension of the given liquids by drop count and drop weight method.
	CO5	To calculate percentage composition of NaCl in a solution using phenol -water system by CST Method.
Pharmaceutiacal Microbiology (BP307P)	CO1	List and study of apparatus used in microbiology.
	CO2	Discuss on different methods of sterilization and sterility testing of pharmaceuticals.
	CO3	Prepare and use culture media for the growth of microorganisms.
	CO4	Identify and isolate bacteria.
	CO5	Apply aseptic procedures for inoculation

Pharmaceutiacal Engineering (BP308P)	**CO1**	To understand the principles and processes of drying, evaporation, and crystallization in pharmaceutical engineering
	CO2	To evaluate psychrometric properties of air and their applications in pharmaceutical processes
	CO3	To study the Principle, construction, working and applications of key pharmaceutical machinery.
	CO4	To analyze the influence of material properties on pharmaceutical unit operations
	CO5	To develop practical skills for operating equipment, collecting data, and analyzing results

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IVth SEMESTER

Subject	Course Outcome No.	Course Outcome
Pharmaceutical Organic Chemistry-III (BP401T)	CO1	Recall the fundamental concepts of stereochemistry, including optical isomerism, geometrical isomerism, conformational isomerism, and atropisomerism, along with their respective nomenclature systems.
	CO2	Explain the stereo chemical aspects of organic compounds and stereo chemical reactions.
	CO3	Understand the methods of preparation and properties of heterocyclic compounds.
	CO4	Know the medicinal uses and other applications of heterocyclic compounds.
	CO5	To understand the synthetic importance of the reaction.
Medicinal Chemistry-I (BP402T)	CO1	Helps in correlating between pharmacology of a disease and its mitigation or cure
	CO2	To understand the chemistry of drugs with respect to their pharmacological activity.
	CO3	To understand the drug metabolic pathways, adverse effect and therapeutic value of drugs.
	CO4	To know the Structural Activity Relationship (SAR) of different class of drugs.
	CO5	To write the chemical synthesis of some drugs.
Physical Pharmaceutics-II (BP403T)	CO1	Determine the particle size and the size distribution by using microscopic and sieving techniques
	CO2	Demonstrate the use of Ostwald's and Brookfield's viscometer to determine the viscocity of liquids and semisolids.
	CO3	Experiment effect of suspending agents and their concentration on the sedimentation volume
	CO4	Determine the bulk density, true density , porosity and the angle of repose of powders
	CO5	Determine the reaction rate constant using the specified experiments
Pharmacology-I (BP404T)	CO1	Study the concept of introduction of pharmacology and understand various drugs and their administration.
	CO2	Write about pharmacodynamics parameter and

		adverse drug reaction, drug discovery and clinical evaluation of new drug.
	CO3	Describe the drugs acting on peripheral nervous system including organization of ANS, neurotransmitter, local anesthetic agents and drugs used in myasthenia gravis and glaucoma
	CO4	Summarize drug acting on CNS including general and peripheral sedative and hypnotics, antiepileptic's, alcohols, disulphiram.
	CO5	Explain various drugs acting on CNS including physic pharmacological agents; drug used in Parkinson's and Alzheimer's, CNS stimulants, opioid analgesic and drug addiction, drug abuse, tolerance, dependence.
Pharmacognosy and Phytochemistry-I (BP405T)	**CO1**	To recall the history, scope and development of pharmacognosy with different sources of crude drugs and classify them accordingly, also evaluate the crude drugs by quantitative and qualitative evaluation methods.
	CO2	To illustrate students about cultivation, collection, processing and storage of crude drugs and the applications of advanced technologies like polyploidy, mutation and hybridization in medicinal plants.
	CO3	To elaborate the applications of plant tissue culture in medicinal plants.
	CO4	Explain the systematic pharmacognostic study of primary & secondary metabolites, role of Pharmacognosy in allopathy and traditional systems of medicine.
	CO5	To plan systematic pharmacognostic study of primary metabolites (carbohydrates, proteins, lipid), marine drugs and teratogens, hallucinogen, natural allergans and fibers.
Medicinal Chemistry-I (BP406P)	**CO1**	To recall the basic requirements for synthesis and assay of drugs
	CO2	To synthesize, characterize and purify medicinal compounds and intermediates
	CO3	To analyze the selected drugs present in dosage forms and to determine the percentage purity
	CO4	To determines the physicochemical property of drugs and draw its importance

Physical Pharmaceutics-II (BP407P)	**CO1**	To determine the viscosity using Ostwald's and Brookfield's viscometer.
	CO2	To make use of derived and flow properties of powders to ensure a stable solid formulation.
	CO3	To choose a good suspending agent to formulate a stable suspension.
	CO4	To distinguish the rate constants as per the chemical reaction.
Pharmacology-I (BP408P)	**CO1**	Identify and learn the appliances, common laboratory animals used in experimental pharmacology and Recommend procedures for laboratory animal maintenance to organize animal house as per the CPCSEA guidelines.
	CO2	Demonstrate the common laboratory techniques like routes of administration, blood withdrawal, chose appropriate local anesthetics for animal studies.
	CO3	Demonstrate drug action using computer models and interpret the effects of various drugs on animals and correlate with humans.
	CO4	Evaluate the pharmacological screening of drugs in rats/mice.
	CO5	Distinguish *in-vitro* and *in-vivo* experiments
Pharmacognosy and Phytochemistry-I (BP409P)	**CO1**	To remember different morphological and microscopical characteristic features of crude drugs.
	CO2	Demonstrate camera lucida and diagrams of microscopic objects to scale with camera lucida.
	CO3	Evaluate the crude drugs by quantitative evaluation methods.
	CO4	Evaluate the crude drugs by physical methods of evaluation.
	CO5	Analyse crude drugs by using chemical test.

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Vth SEMESTER

Subject	Course Outcome No.	Course Outcome
Medicinal Chemistry-II (BP501T)	**CO1**	Learn fundamental knowledge on the structure, chemistry and therapeutic value of drugs.
	CO2	Understand structure activity relationships of drugs.
	CO3	Analysis importance of physicochemical properties and metabolism of drugs
	CO4	Understand chemical synthesis of important drugs under each class.
	CO5	Classification, mechanism of action, uses of drugs.
Industrail Pharmacy-I (BP502T)	**CO1**	Explain the goals and objectives of preformulation, interpret physicochemical and chemical characteristics of drug substances, and apply this knowledge to analyze drug-excipient compatibility and design stable dosage forms.
	CO2	Classify types of tablets and liquids, apply formulation strategies and granulation techniques, analyze coating defects, and evaluate in-process and final product quality to improve manufacturing outcomes.
	CO3	Describe the formulation and production techniques of capsules and pellets, apply base adsorption concepts, identify defects, analyze formulation parameters, and evaluate product quality and performance.
	CO4	Explain the formulation requirements for sterile dosage forms, apply aseptic techniques, analyze quality control parameters, and evaluate container-closure integrity to ensure product safety and compliance.
	CO5	Illustrate the formulation principles of cosmetics and aerosols, analyze propellant systems and container interactions, design packaging based on product stability needs, and create innovative, sustainable packaging solutions.
Pharmacology-II (BP503T)	**CO1**	Summarize hemodynamic and electrophysiology of heart and Understand the Pharmacology of drug acting on CVS including congestive heart failure, Hypertension, angina, arrhythmia, hyperlipidemia, shock.

	CO2	Understanding the pharmacology of Hematinics, coagulants and anticoagulants, Fibrinolytics and anti-platelet drugs, Plasma volume expanders, Diuretics, Anti-diuretics.
	CO3	Understand the Pharmacology of Autacoids and drugs acting on it.
	CO4	Understand the Pharmacology of endocrine system.
	CO5	Understand the Principles and applications of bioassay and Applying the principles and procedure of Bioassay on insulin, oxytocin, vasopressin, ACTH, d-tubocurarine, digitalis, histamine and 5-HT.
Pharmacognosy and Phytochemistry-II (BP504T)	CO1	Understand metabolic pathways involved in biosynthesis of secondary metabolites and application of biogenetic studies.
	CO2	Explain source, chemistry, therapeutic application of various secondary metabolites containing drugs.
	CO3	Discuss isolation, identification and analysis of some phytoconstituents.
	CO4	Describe methods for industrial production, estimation and utilization of some therapeutically important secondary metabolites.
	CO5	Know various modern extraction techniques & application of latest technique for analysis of Phytoconstituents.
Pharmaceutical Jurisprudence (BP505T)	CO1	The pharmaceutical legislation and their implications in the development and marketing of pharmaceuticals.
	CO2	To know various Indian Pharmaceutical Acts and Laws.
	CO3	The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals.
	CO4	The code of ethics during the pharmaceutical practice.
	CO5	To regulate Manufacture, sale of Ayurvedic, Siddha and Unani drugs
Industrail Pharmacy-I (BP506P)	CO1	Analyze the physical and chemical properties of drugs through Preformulation studies to optimize their formulation development.
	CO2	Demonstrate the ability to prepare and evaluate various pharmaceutical dosage forms, including tablets, capsules and topical

		preparations as per regulatory guidelines.
	CO3	Execute film coating of tablets or granules and perform quality control tests on marketed pharmaceutical products in accordance with Indian Pharmacopoeia (IP) standards.
	CO4	Develop sterile injectable formulations using aseptic techniques and ensure their compliance with quality standards.
	CO5	Formulate, prepare, and evaluate ocular dosage forms while assessing the quality of pharmaceutical packaging materials like glass containers as per IP guidelines.
Pharmacology-II (BP507P)	CO1	Distinguish *in-vitro* and *in-vivo* experiments, Prepare Physiological Salt Solution.
	CO2	Demonstrate drug action using computer models and interpret the effects of various drugs on animals and correlate with humans.
	CO3	Examine the potency of drugs by Bioassays.
	CO4	Determine the PA2 & PD2 Values.
	CO5	Analyze the effect of spasmogens and spasmolytics on rabbit jejunum, drugs on analgesic and inflammation.
Pharmacognosy and Phytochemistry-II (BP508P)	CO1	Evaluate crude drugs by using morphological and microscopical characteristics
	CO2	Demonstrate isolation of phytoconstituents from crude drugs.
	CO3	Analyze phytoconstituents by Paper and Thin Layer Chromatography of phytoconstituents/extracts.
	CO4	Construct isolation, evaluation of volatile oil water distillation method.
	CO5	Identify unorganized crude drugs by physical and chemical tests

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VIth SEMESTER

Subject	Course Outcome No.	Course Outcome
Medicinal Chemistry-III (BP601T)	**CO1**	Students will be able to learn fundamental knowledge on the structure, chemistry and therapeutic value of drugs
	CO2	Students will be able to understand quantative structure activity relationships, prodrug concept, combinatorial chemistry, computer aided drug designing of drugs.
	CO3	Students will be able to understand chemistry, mechanism of action, metabolism, and adverse effect, analysis importance of physicochemical properties and metabolism of drugs.
	CO4	Students will be able to understand therapeutic uses and chemical synthesis of important drugs under each class
	CO5	Give the importance of drug design and different techniques of drug design.
Pharmacology-III (BP602T)	**CO1**	Remembering the classifications and pharmacological characteristics of drugs acting on the respiratory system and gastrointestinal tract as well as their therapeutic applications.
	CO2	Understanding the mechanisms of action of anti-asthmatic drugs, antiulcer agents, antibiotics, and other drug categories discussed in the course, demonstrating a deep understanding of their effects on the body.
	CO3	Applying pharmacological knowledge to analyse and propose treatment strategies for specific respiratory conditions like COPD, gastrointestinal disorders, and infectious diseases using the appropriate drugs covered in the course.
	CO4	Evaluate the effectiveness and safety of various drug therapies, including immune stimulants, immune suppressants and chemotherapeutic agents, considering patient-specific factors and the latest research findings
	CO5	Creating innovative approaches to address emerging challenges in pharmacology, such as drug resistance in infectious diseases or novel

		strategies for cancer chemotherapy, incorporating advanced concepts like protein drug and biosimilar.
Herbal Drug Technology (BP603T)	**CO1**	Explain about raw material as source of herbal drugs, good agricultural practices of medicinal plants including organic farming, and use of pesticide and insecticide included in the syllabus. Explain about raw material as source of herbal drugs, good agricultural practices of medicinal plants including organic farming, and use of pesticide and insecticide included in the syllabus
	CO2	Compare and Contrast in Basic principles involved in Ayurveda, Siddha, Unani and Homeopathy system and explain about Preparation and standardization of Ayurvedic formulations viz.Aristas and Asawas, Ghutika, Churna, Lehya and Bhasma included in the syllabus.
	CO3	Explain about General aspects, Market, growth, scope and types of products available in the market. Health benefits and role of Nutraceuticals in ailments like Diabetes, CVS diseases, Cancer, Irritable bowel syndrome and various Gastro intestinal diseases included in the syllabus.
	CO4	Classify interaction of drugs and their possible side effects included in the syllabus.
	CO5	Summaries WHO and ICH guidelines for evaluation of herbal drugs and patenting of herbal drugs included in the syllabus.
Biopharmaceutics and Pharmacokinetics (BP604T)	**CO1**	Describe (Understanding) the basic concept in Biopharmaceutics and its importance in dosage form design.
	CO2	Know (Applying) and understand the processes and terms related to the fate of drug in human body also explain and Describe (Remembering) the physicochemical, dosage form and patient related factors affecting absorption, distribution, metabolism and excretion of drugs.
	CO3	Apply (Application) the concept of compartment modelling and Estimate (Evaluating) the quantity/concentration of drug in body at any point of time
	CO4	Describe (Remembering) and evaluate (Evaluating) bioavailability, bioequivalence and its regulatory requirements for conducting bioequivalence study, bio-waivers, bio- similar. Identify (Understanding) pharmacokinetic

		parameters in non-linear pharmacokinetics Understanding (Understanding) of BCS (Biopharmaceutical classification system) theories of dissolution, dissolution test apparatus and IVIVC.
	CO5	Apply (Application) Pharmacokinetics in Clinical Situations.
Pharmaceutical Biotechnology (BP605T)	**CO1**	Appreciate the significance of immobilized enzymes in pharmaceutical industries and understand various fermentation methods and their products.
	CO2	Summarize the aspects of genetic engineering in relation to production of pharmaceuticals.
	CO3	Discuss the significance of immunology, monoclonal antibodies, and vaccines production in Pharmaceutical Sciences
	CO4	Describe the principles and applications of blotting techniques, and explain the genetic organization of eukaryotes, prokaryotes, and microbial genetics.
	CO5	Summarize the importance of microorganisms in fermentation technology.
Quality Assurance (BP606T)	**CO1**	Understand the aspects of quality assurance, total quality Management, ICH guidelines, QbD, relevant ISO and accreditation process in a pharmaceutical industry.
	CO2	Describe the importance of organization, personnel, premises, equipment and raw material as per cGMP guideline.
	CO3	Explain the quality control and GLP practices followed in Pharmaceutical Industry
	CO4	Appreciate the importance of documentation and complaint procedure.
	CO5	Apply the principles of calibration and validation and follow good warehousing practices
Medicinal Chemistry-III (BP607P)	**CO1**	Learn synthesize and characterize the drug molecules and their intermediates.
	CO2	Preparation of leading important drugs or its intermediates with help of Microwave technology.
	CO3	Estimate assay of standard drugs.
	CO4	Practice for drawing structures reactions with the help of free or commercial software's.
	CO5	Predict and illustrate ADMET parameters by using popular software's.

Pharmacology-III (BP608P)	CO1	Demonstration of different activity & mechanism of drugs using software's & animal models.
	CO2	Calculate doses of drugs for preclinical studies in animal experiments.
	CO3	Estimate different biochemical parameters for treatment of different diseases.
	CO4	Observe toxicological profile of drugs using Acute, Subacute & Chronic toxicity studies.
	CO5	Study of different methods of data analysis & interpretation as evidence of Pharmacological study.
Herbal Drug Technology (BP609P)	CO1	Perform Phytochemical screening of crude drugs.
	CO2	Perform various Evaluation Parameters of Crude drugs.
	CO3	Prepare the various herbal formulation as well as Monograph of crude drugs
	CO4	Perform titrimetric analysis of Crude drugs
	CO5	To determine Alcohol content in ayurvedic Formulation

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FABTECH COLLEGE OF PHARMACY SANGOLA

VIIth SEMESTER

Subject	Course Outcome No.	Course Outcome
Instrumental method of analysis (BP701T)	CO1	Describe the fundamentals of UV Visible spectroscopy and Fluorimetry, its instrumentation and applications
	CO2	Understand principle, instrumentation and applications of IR spectroscopy, Atomic Spectroscopy and Nepheloturbidometry
	CO3	Explain basic theories and applications of conventional chromatographic methods
	CO4	Apply knowledge of GC and HPLC for evaluation of pharmaceutical compounds
	CO5	Discuss theory, instrumentation and application of ion exchange, gel and affinity chromatography
Industrial Pharmacy-II (BP702T)	CO1	Design various pilot plant scale up techniques.
	CO2	Explain about technology development and transfer.
	CO3	Summarize the concept of regulatory affairs, regulatory requirements for drug approval.
	CO4	Adapting various quality management systems.
	CO5	Explain Indian regulatory requirements.
Pharmacy Practice (BP703T)	CO1	Understand hospital and pharmacy organization, adverse drug reactions, and community pharmacy operations.
	CO2	Manage hospital drug distribution, formulary, therapeutic monitoring, medication adherence, and community pharmacy systems.
	CO3	Coordinate therapeutic committees, drug information, patient counseling, education, and interprofessional communication effectively.
	CO4	Apply clinical pharmacy practices, budget management, and rational OTC medication use for healthcare improvement.
	CO5	Organize drug stores, manage inventories, investigational drugs, and interpret clinical laboratory test results.

Novel drug delivery system (BP704T)	**CO1**	Explain the principles, rationale, and approaches for designing controlled drug delivery systems, including the role of polymers and the influence of physicochemical and biological properties of drugs.
	CO2	Describe the methods, advantages, and applications of microencapsulation, mucosal drug delivery, and implantable drug delivery systems, emphasizing bioadhesion, transmucosal permeability, and osmotic pumps.
	CO3	Discuss the formulation strategies, advantages, and applications of transdermal, gastroretentive, and nasopulmonary drug delivery systems, considering factors influencing drug permeation and delivery.
	CO4	Explain the concepts, approaches, and applications of targeted drug delivery systems, including liposomes, niosomes, nanoparticles, and monoclonal antibodies.
	CO5	Evaluate the design, challenges, and applications of ocular and intrauterine drug delivery systems, including intraocular barriers, ocuserts, and intrauterine devices (IUDs).
Instrumental method of analysis (BP705P)	**CO1**	Comprehend and explain fundamentals of instrumental analytical techniques.
	CO2	Identify different pharmaceuticals compounds by UV-Spectroscopy.
	CO3	Estimate different pharmaceuticals compounds by colourimetry and Fluorimetry.
	CO4	Estimate different elements by flame photometry and turbidometry
	CO5	Separate and identify different pharmaceutical substances by chromatography.

Sign. of NAAC- Co-ordinator

Dr Kazi

Sign. Of Principal

Dr S.K. Bais

PRINCIPAL
Fabtech College of Pharmacy
Sangola

FABTECH COLLEGE OF PHARMACY SANGOLA

VIIIth SEMESTER

Subject	Course Outcome No.	Course Outcome
Biostatistics and research methodology (BP801T)	**CO1**	Understand the concepts of Measures of central tendency, Measures of dispersion and Correlation .
	CO2	To study Regression , Probability and Parametric tests.
	CO3	Understand the Non Parametric tests and Designing methodology of research .
	CO4	Understand the Regression modeling and to study Practical components of Industrial and Clinical Trials Problems.
	CO5	To study the Design and Analysis of experiments.
Social and Preventative Pharmacy (BP802T)	**CO1**	Students will be able to describe the role of pharmacy in public health and preventive healthcare, including the implementation of health programs and policies.
	CO2	Learners will develop an understanding of various preventive measures for communicable and non-communicable diseases, focusing on pharmaceutical interventions and health education.
	CO3	Students will gain knowledge about drug regulations, pharmacovigilance, and the ethical responsibilities of pharmacists in ensuring medication safety and adverse drug reaction monitoring.
	CO4	Learners will be equipped with skills to assess and propose pharmacy-based solutions for community health challenges, including rural and urban healthcare disparities.
	CO5	Students will develop effective communication strategies to educate individuals and communities about disease prevention, rational drug use, and the importance of vaccinations.
Pharmaceutical Regulatory Science (BP804ET)	**CO1**	Know about the process of drug discovery and development.
	CO2	Know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals.
	CO3	Know the regulatory approval process and their registration in Indian and international markets.
	CO4	Know the protocol and their committee in clinical

		trials and pharmacovigilance.
	CO5	Know about legal aspects and quality policies for drug manufacturing.
Quality control and standardization (BP806ET)	CO1	Recall the WHO guidelines for the quality control of herbal drugs.
	CO2	Illustrate and outline the quality assurance in traditional system of medicine including cGMP, GAP, GMP and GLP.
	CO3	Compare the quality control parameters of drugs according to European union (EU) and ICH guidelines and make use of research guidelines for evaluation of safety and efficiency of herbal medicine.
	CO4	Apply the knowledge of chromatography in standardization of herbal drugs and understand the regulatory approval process and registration in Indian and International markets.
	CO5	Improve the knowledge on regulatory issues for herbal medicine including GMP, WHO guidelines on safety monitoring of herbal medicine in Pharmacovigilance.
Cosmetic Science (BP809ET)	CO1	Student shall be able to know about the role of pharmaceutics in formulation of cosmetic
	CO2	Student shall be able to understand principles and building block of skin care and hair care products
	CO3	Student will know about SPF and analytical cosmetics
	CO4	Students will come to know different principles of cosmetics evaluation.
	CO5	Students will come to know about different Cosmetic problems associated with skin.

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