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I SEMESTER

BP101T - Course Name C 111 – Human Anatomy and Physiology-I Theory	
COURSE CODE	STATEMENTS
C 111.1	Through this course, students will comprehend the homeostatic mechanisms that maintain the balance within the human body
C 111.2	It provides foundational knowledge about the structure and functioning of the human body.
C 111.3	Students will gain insight into the mechanisms of drug action by studying the basic structure of the human body.
C 111.4	The course will help students understand the coordinated functioning of human organs.
C 111.5	This course enables students to correlate Human Anatomy & Physiology with other biomedical sciences.

BP102T - Course Name C 112 – Pharmaceutical Analysis I – Theory	
COURSE CODE	STATEMENTS
C 112.1	It offers an overview of errors in laboratory settings and methods for minimizing them
C 112.2	It covers areas such as new concepts, methods, techniques, theory, skill development, and the upgradation of educational technology to keep pace with the evolving landscape of Technical Education.
C 112.3	It enhances and updates knowledge related to general research capabilities.



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C 112.4	Develop analytical skills in both established and emerging technologies.
C 112.5	This course provides an opportunity to acquire knowledge about current technological developments in relevant fields.

BP103T - Course Name C 113 – Pharmaceutics I–Theory	
COURSE CODE	STATEMENTS
C 113.1	To understand the concepts related to historical background, development of profession of pharmacy, dosage forms, prescription, posology
C 113.2	To understand the concepts about pharmaceutical calculations, powders, basic knowledge of liquid dosage form.
C 113.3	To discuss the concepts and principle involved in the compounding and dispensing of liquid dosage forms for installation, emulsions and suspensions.
C 113.4	To apply the principles and procedures necessary for preparing suppositories and pharmaceutical incompatibilities.
C 113.5	To elucidate the process of compounding & concepts of semi solid dosage form.

BP104T - Course Name C 114 – Pharmaceutical Inorganic Chemistry –Theory	
COURSE CODE	STATEMENTS
C 114.1	To understand the sources of impurities in inorganic drugs and pharmaceuticals, and the methods used to identify these impurities.
C 114.2	To examine the importance of various extracellular and intracellular ions in maintaining the physiological functions of the body.



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C 114.3	To grasp the medicinal and pharmaceutical significance of inorganic compounds.
C 114.4	To understand the concepts of miscellaneous compounds including expectorants, emetics, haematinics, poison & antidotes.
C 114.5	To explore the role of radiopharmaceuticals in the field of pharmacy.

BP105T - Course Name C 115 – Communication skills–Theory*	
COURSE CODE	STATEMENTS
C 115.1	Recognize the Behavioral Requirements for a Pharmacist's Effective Performance in pharmaceutical operations.
C 115.2	Master Effective Communication Skills, both verbal and non-verbal.
C 115.3	Enhance Team Management Abilities and function effectively as a collaborative team member.
C 115.4	Cultivate Strong Interviewing Skills for recruitment and assessment purposes.
C 115.5	Foster Leadership Qualities and key attributes necessary for effective leadership.

BP106 RBT - Course Name C 106 Remedial Biology –Theory*	
COURSE CODE	STATEMENTS
C 116.1	To understand the classification and key characteristics of the five kingdoms of life.
C 116.2	To comprehend the basic components of plant anatomy and physiology.



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C 116.3	To study and grasp the fundamental aspects of plant mineral nutrition and photosynthesis.
C 116.4	To learn about the various functional systems in the human body.
C 116.5	To explore the general anatomical features of plants.

BP106 RMT- Course Name C 116 Remedial Mathematics –Theory*	
COURSE CODE	STATEMENTS
C 116.1	Understand Key Pharmacy Theories and their practical applications in pharmaceutical practice.
C 116.2	Apply Theoretical Knowledge to solve real-world problems in drug dispensing, patient care, and formulation.
C 116.3	Analyse and Address Pharmacy Issues using scientific principles and critical thinking.
C 116.4	Recognize the Importance of Mathematics in drug calculations, compounding, and quality control.
C 116.5	Use Mathematical Concepts to optimize drug dosages, formulations, and medication management for effective patient care.

II SEMESTER

BP201T - Course Name C 125 -Human Anatomy and Physiology II – Theory	
COURSE CODE	STATEMENTS



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C 125.1	By studying this course, students will be able to correlate Human Anatomy and Physiology with gross morphology, structure, and functions of various systems.
C 125.2	It provides foundational knowledge about the structure and physiology of the human body.
C 125.3	Students will gain an understanding of the respiratory system and urinary system and their functions in the human body.
C 125.4	By studying this course, students will be able to comprehend the coordinated functioning of the organs & endocrine system in the human body.
C 125.5	Through this course, students will understand the concepts about reproductive system and basic knowledge about genetics.

BP202T - Course Name C 126 -Pharmaceutical Organic Chemistry I– Theory	
COURSE CODE	STATEMENTS
C 126.1	The subject covers the classification and nomenclature of organic compounds.
C 126.2	It also addresses structural isomerism, intermediate formation in reactions, important physical properties, reactions, and methods of preparation for these compounds.
C 126.3	It includes a study of SN1, SN2, E1, and E2 reactions, as well as free radical addition reactions of conjugated dienes.
C 126.4	The subject explores the chemistry of carbonyl compounds, including named reactions and their mechanisms.
C 126.5	It examines carboxylic acids, the effects of substituents on acidity, and the structures of organic compounds.



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BP203T - Course Name C 1271 -Biochemistry– Theory	
COURSE CODE	STATEMENTS
C 127.1	This course covers the chemistry of biomolecules and the principles of bioenergetics.
C 127.2	It explores the metabolism of carbohydrates under both physiological and pathological conditions.
C 127.3	The subject also examines the metabolic pathways of lipids and amino acids in normal and diseased states.
C 127.4	It discusses the genetic organization of the mammalian genome.
C 127.5	The course emphasizes the importance of enzymes and their inhibitors in diagnostic and therapeutic applications.

BP204T - Course Name C 128- Pathophysiology – Theory	
COURSE CODE	STATEMENTS
C 128.1	Understand the various etiology and basic pathophysiological mechanisms of different diseases.
C 128.2	Identify the signs and symptoms associated with different types of diseases.
C 128.3	Comprehend the complications arising from different diseases.
C 128.4	Apply knowledge of relevant pathology in various conditions with reference to its pharmacological applications.
C 128.5	Gain detailed information about infectious diseases & sexually transmitted diseases.



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BP205T - Course Name C 129 - Computer Applications in Pharmacy– Theory*	
COURSE CODE	STATEMENTS
C 129.1	To know the number system and Concept of Information Systems and Software.
C 129.2	Familiarize with different types of databases.
C 129.3	Understand the various types of computer applications in pharmacy
C 129.4	Learn about bioinformatics in pharmacy.
C 129.5	Comprehend the concept of computers as data analysis in Preclinical development.

BP206T - Course Name C 1210 - Environmental sciences–Theory*	
COURSE CODE	STATEMENTS
C 1210.1	Gain basic knowledge about the environment.
C 1210.2	Learn and understand how to use natural resources judiciously
C 1210.3	Learn how to control pollution.
C 1210.4	Acquire the skills to solve environmental problems.
C 1210.5	Develop an attitude of concern toward the ecosystem



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III SEMESTER

BP301T - Course Name C 211 - Pharmaceutical Organic Chemistry II – Theory	
COURSE CODE	STATEMENTS
C 211.1	Learn how to write chemical reactions, identify the names of reactions, and understand the orientation of reactions along with the reactivity and stability of compounds.
C 211.2	Gain a comprehensive understanding of how to write chemical reactions, name reactions, and analyze the orientation, reactivity, and stability of compounds.
C 211.3	Acquire knowledge about the properties of fats and oils, including their structure, behavior, and applications.
C 211.4	Understand the sources, properties, reactions, and medicinal uses of polycyclic hydrocarbons.
C 211.5	Develop an understanding of the stereochemical properties of cycloalkanes and the methods used to prepare them.

BP302T - Course Name C 212 - Physical Pharmaceutics I – Theory	
COURSE CODE	STATEMENTS
C 212.1	Gain an understanding of the various physicochemical properties of drug molecules and how they influence the design of dosage forms.
C 212.2	Demonstrate the application of various physicochemical properties in the development and evaluation of dosage forms.
C 212.3	Know about the concept of surface and interfacial tension and their influence on designing dosage forms
C 212.4	Understand the principles of complexation and the factors that affect the stability of complexes.
C 212.5	Recognize the importance of pH and tonicity in the formulation of dosage forms.



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BP303T - Course Name C 213 - Pharmaceutical Microbiology – Theory	
COURSE CODE	STATEMENTS
C 213.1	Understand the methods for identification, cultivation, and preservation of various microorganisms.
C 213.2	Learn the importance and implementation of sterilization in pharmaceutical processing and industry.
C 213.3	Acquire knowledge about sterility testing of pharmaceutical products.
C 213.4	Perform microbiological standardization of pharmaceuticals.
C 213.5	Understand cell culture technology and its applications in pharmaceutical industries.

BP304T - Course Name C 214 - Pharmaceutical Engineering – Theory	
COURSE CODE	STATEMENTS
C 214.1	Understand the concept of flow of fluids, and explore different types of equipment used in size reduction and separation, including their principles, construction, functioning, benefits, and limitations.
C 214.2	Know applications & Heat transfer mechanisms, explore different types of equipment used in evaporation and basic principles and methodology of distillation methods
C 214.3	Explore different types of equipment used in drying & mixing including their theories, principles, construction, functioning, benefits, and limitations.
C 214.4	Explore different types of equipment used in filtration & centrifugation including their theories, principles, construction, functioning, benefits, and limitations.
C 214.5	To learn about materials of pharmaceutical plant construction, Corrosion and its prevention:



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IV SEMESTER

BP401T - Course Name C 225 - Pharmaceutical Organic Chemistry III– Theory	
COURSE CODE	STATEMENTS
C 225.1	Imparts knowledge on the stereochemical aspects of organic compounds, including optical isomerism, racemic mixtures, and the resolution of racemic mixtures.
C 225.2	Know about geometrical isomerism in organic compounds and their reactions
C 225.3	Explain the naming and nomenclature, properties, and therapeutic uses of heterocyclic compounds.
C 225.4	Understand named reactions and their mechanisms.
C 225.5	Know the reactions of synthetic importance

BP402T - Course Name C 226 - Medicinal Chemistry I–Theory	
COURSE CODE	STATEMENTS
C 226.1	Learn the history and properties of drugs
C 226.2	Understand drug metabolic pathways, their adverse effects, and therapeutic value.
C 226.3	Apply knowledge of medicinal compounds and their mechanisms of action in the treatment of various diseases.
C 226.4	Gain insight into the structure-activity relationship (SAR) of different classes of drugs.
C 226.5	Acquire knowledge about diseases and learn to write the chemical synthesis of select drugs.



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BP403T - Course Name C 227 - Physical Pharmaceutics II–Theory	
COURSE CODE	STATEMENTS
C 227.1	Acquire foundational knowledge of pharmaceutical colloids.
C 227.2	Gain an understanding of rheological concepts and deformation of solids
C 227.3	Acquire foundational knowledge of pharmaceutical coarse dispersions
C 227.4	Understand the pharmaceutical applications of various micromeritic properties in formulation science.
C 227.5	Learn the principles of chemical kinetics and apply them to stability testing and determining the shelf life of formulations.

BP404T - Course Name C 228 – Pharmacology I –Theory	
COURSE CODE	STATEMENTS
C 228.1	To learn about the history of pharmacology and pharmacokinetic parameters
C 228.2	To know about pharmacodynamics parameters, adverse drug reactions, drug interactions (pharmacokinetic and pharmacodynamic), and the processes of drug discovery
C 228.3	Learn about drugs acting on PNS system
C 228.4	Learn about drugs acting on CNS system
C 228.5	Learn about Psychopharmacological agents, Drug addiction, drug abuse, tolerance and dependence.

BP405T - Course Name C 229 - Pharmacognosy and Phytochemistry I –Theory



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COURSE CODE	STATEMENTS
C 229.1	Gain knowledge of classification used for the quality control of herbal drugs.
C 229.2	to know the techniques in the cultivation and production of crude drugs
C 229.3	Understand the concept of applications of plant tissue culture in pharmacognosy and the concept of secondary metabolites
C 229.4	To know about the role of pharmacognosy in various systems of medicine
C 229.5	To learn biological source, chemical nature and uses of drugs of natural origin of certain classes of drugs

V SEMESTER

BP501T - Course Name C 311 - Medicinal Chemistry II –Theory	
COURSE CODE	STATEMENTS
C 311.1	Understand the chemistry of drugs in relation to their pharmacological activity.
C 311.2	Learn about drug metabolic pathways, their adverse effects, and therapeutic value.
C 311.3	Apply knowledge of medicinal compounds and their mechanisms of action in the treatment of various diseases.
C 311.4	Gain insight into the structure-activity relationship (SAR) of different classes of drugs.
C 311.5	Develop the ability to write the chemical synthesis of selected drugs.

BP502T - Course Name C 312 - Industrial Pharmacy I –Theory



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COURSE CODE	STATEMENTS
C 312.1	To understand preformulation considerations in the development of solid, liquid oral and parenteral dosage forms and its impact on stability of dosage forms.
C 312.2	To Know the manufacturing techniques and quality control of the tablets and liquid orals dosage forms
C 312.3	To Know the manufacturing techniques and quality control of capsules and pellets
C 312.4	To learn about the formulation considerations and quality control of capsules and pellets
C 312.5	Gain an understanding about the formulation and evaluation of cosmetics and aerosols and packaging material science

BP503T - Course Name C 313 - Pharmacology II–Theory	
COURSE CODE	STATEMENTS
C 313.1	Acquire information about the treatment of cardiovascular complications
C 313.2	Acquire knowledge of Pharmacology of drugs acting on urinary system
C 313.3	Understand the roles of various endocrine hormones, their pathological significance, and the drugs used for treatment
C 313.4	Learn about the pharmacology of autacoids.
C 313.5	Learn about bioassays and their importance in analyzing the potency of compounds.



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BP504T - Course Name C 314 - Pharmacognosy and Phytochemistry II – Theory	
COURSE CODE	STATEMENTS
C 314.1	Identify and understand the metabolic pathways in plants
C 314.2	Know about composition, chemistry & chemical classes, bio sources, therapeutic uses and commercial applications of secondary metabolites
C 314.3	Learn the concept of Isolation, Identification and Analysis of Phytoconstituents
C 314.4	Gain an understanding about Industrial production, estimation and utilization of certain phytoconstituents
C 314.5	Understand about various techniques of extraction of phytoconstituents

BP505T - Course Name C 315 - Pharmaceutical Jurisprudence – Theory	
COURSE CODE	STATEMENTS
C 315.1	Understand the drugs and cosmetics act.
C 315.2	Know about schedules, sales and labelling of drugs and administration of act and rules
C 315.3	Learn about the Pharmacy Acts, Medicinal and Toilet Preparation Act and Narcotic Drugs and Psychotropic substances act
C 315.4	Gain an understanding about Drugs and Magic Remedies Act, Prevention of Cruelty to animals Act and National Pharmaceutical Pricing Authority
C 315.5	Understanding the Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals.



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VI SEMESTER

BP601T Course outcome C 326 - Medicinal Chemistry III–Theory	
COURSE CODE	STATEMENTS
C 326.1	Gain knowledge of the chemistry of drugs in relation to their biological activity.
C 326.2	Learn about the metabolism, adverse effects, and therapeutic value of drugs.
C 326.3	Explore the structure-activity relationship (SAR) of various classes of drugs.
C 326.4	Develop the ability to write the chemical synthesis of selected drugs.
C 326.5	Understand the importance of drug design and explore different techniques used in drug design.

BP602T Course outcome C 327 - Pharmacology III– Theory	
COURSE CODE	STATEMENTS
C 327.1	Understanding of the Pharmacology of drugs acting on Respiratory system and GI tract
C 327.2	Comprehend the knowledge of principles of chemotherapy
C 327.3	Explore the mechanism of drug action and its relevance in the treatment of different infectious diseases
C 327.4	Analyze the challenges associated with drugs used in the treatment of cancer and understand the immunopharmacology
C 327.5	Gain knowledge of the principles of toxicology, understand the treatment of various poisonings and the concept of chrono pharmacology.



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BP603T Course outcome C 328 - Herbal Drug Technology–Theory	
COURSE CODE	STATEMENTS
C 328.1	Understand the pharmacognostical information of the sources of raw materials used in herbal drugs.
C 328.2	Learn the importance of nutraceuticals, herb-drug interactions, and herb-food interactions.
C 328.3	Understand the significance of herbal formulations and the excipients used in herbal cosmetic formulations.
C 328.4	Gain awareness of WHO and ICH guidelines along with patent regulatory requirements
C 328.5	Be aware of various herbal industries, GMP practices, the Indian system of medicine, and Schedule-T drugs.

BP604T Course outcome C 329 - Bio pharmaceuticals and Pharmacokinetics –Theory	
COURSE CODE	STATEMENTS
C 329.1	Understand the concepts and significance of biopharmaceutics and pharmacokinetics.
C 329.2	Analyze plasma drug concentration-time data to calculate pharmacokinetic parameters.
C 329.3	Learn the importance of bioavailability and bioequivalence.
C 329.4	Understand key pharmacokinetic parameters and their applications.
C 329.5	Identify nonlinearity in pharmacokinetics and estimate relevant parameters.

BP605T Course outcome C 3210 - Pharmaceutical Biotechnology – Theory	
COURSE CODE	STATEMENTS



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C 3210.1	Learn enzyme immobilization, microbial transformations, and biosensors.
C 3210.2	Gain knowledge of recombinant DNA technology and recombinant product preparation.
C 3210.3	Know about immunological products, vaccines, and monoclonal antibody preparation.
C 3210.4	Understand genetic organization and techniques like ELISA, Southern blot, and Western blot.
C 3210.5	Explore fermenter design, fermentable products, and blood product preparation.

BP606T Course outcome C 3211 - Pharmaceutical Quality Assurance – Theory	
COURSE CODE	STATEMENTS
C 3211.1	Gain knowledge of QC, QA, GMP, TQM, QbD, and ISO/NABL accreditation in pharma
C 3211.2	Learn organization, training, premises, and equipment management.
C 3211.3	Understand quality control techniques and GLP principles.
C 3211.4	Explore different documents maintained in pharmaceutical industry and know complaints handling
C 3211.5	Practice Good warehousing and know the importance of calibration, qualification and validation.

VII SEMESTER

BP701T - Course outcome C 411 - Instrumental Methods of Analysis – Theory	
COURSE CODE	STATEMENTS
C 411.1	Understand the principles and instrumentation of UV spectroscopy techniques and fluorimetry



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C 411.2	Understand the principles and instrumentation of IR spectroscopy techniques and flame photometry, Atomic absorption spectroscopy and Nepheloturbidometry
C 411.3	Learn the principles and instrumentation of chromatography techniques.
C 411.4	Explore the principles and instrumentation of gas chromatography and HPLC techniques.
C 411.5	Know the principles and instrumentation of Ion exchange chromatography, Gel chromatography and Affinity chromatography

BP702T - Course outcome C 412 - Industrial Pharmacy II–Theory	
COURSE CODE	STATEMENTS
C 412.1	Learn the pilot plant process and scale-up of pharmaceutical dosage forms.
C 412.2	Understand technology transfer from lab scale to commercial batches.
C 412.3	Learn the principles and instrumentation of chromatography techniques.
C 412.4	Explore the principles and instrumentation of gas chromatography and HPLC techniques.
C 412.5	Know the principles and instrumentation of Ion exchange chromatography, Gel chromatography and Affinity chromatography

BP703T - Course outcome C 413 - Pharmacy Practice– Theory	
COURSE CODE	STATEMENTS
C 413.1	Know about Hospital and its organization, Hospital Pharmacy and its organization and adverse drug reactions (ADRs).
C 413.2	Understand drug distribution methods and Monitor patient drug therapy, including medication chart reviews, clinical reviews.
C 413.3	Know about PTC, explore drug information services, conduct patient counselling



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C 413.4	Explore Budget preparation and implementation, Clinical Pharmacy and Over the counter (OTC) sales
C 413.5	Understand about pharmacy store management, inventory control in hospitals, Investigational use of drugs and Interpretation of Clinical Laboratory Tests.

BP704T - Course outcome C 414 - Novel Drug Delivery System – Theory	
COURSE CODE	STATEMENTS
C 414.1	Understand controlled drug delivery systems, including diffusion, dissolution, polymers, and advanced formulations.
C 414.2	Learn microencapsulation techniques, methods of preparation, and the buccal drug delivery system and implantable drug delivery systems
C 414.3	Know about Transdermal Drug Delivery Systems, Gastroretentive drug delivery systems and Nasopulmonary drug delivery system
C 414.4	Gain an understanding of concept of targeted drug delivery system.
C 414.5	Learn about ocular, and intrauterine drug delivery systems.

VIII SEMESTER

BP801T - Course outcome C 425 - Biostatistics and Research Methodology – Theory	
COURSE CODE	STATEMENTS
C 425.1	Learn basic concept of biostatistics and graphical representation of results for better interpretation.
C 425.2	Understand and apply concepts of probability and statistical tests like T-tests and One-Way ANOVA.
C 425.3	Design research projects and analyse data using appropriate statistical methods.
C 425.4	Explore Practical components of Industrial and Clinical Trials Problems



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C 425.5	Understand Design and Analysis of experiments and Response Surface methodology
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BP802T - Course outcome C 426 - Social and Preventive Pharmacy – Theory	
COURSE CODE	STATEMENTS
C 426.1	Understand public health concepts, social problems of the sick, and the importance of nutrition and balanced diet
C 426.2	Learn about disease prevention and control, including drug abuse and addiction.
C 426.3	Gain knowledge of National Health Programs and their role in eradicating communicable diseases.
C 426.4	Understand the role of WHO in social health and Indian National Health Programs.
C 426.5	Study community services under rural and urban health missions.

BP805ET - Course outcome C 427 - Pharmacovigilance – Theory	
COURSE CODE	STATEMENTS
C 427.1	Understand the importance of pharmacovigilance, ADR detection and assessment and terminologies used.
C 427.2	Learn about Drug and disease classification, Drug dictionaries and coding in pharmacovigilance, Information resources in pharmacovigilance and Establishing pharmacovigilance programme
C 427.3	Explore vaccine safety surveillance, Pharmacovigilance methods and Communication in pharmacovigilance
C 427.4	Generating safety data across pre-clinical, clinical, and post-approval phases.
C 427.5	Drug safety evaluation in pediatrics, geriatrics, pregnancy, and lactation.



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BP809ET - Course outcome C 428 - Cosmetic science – Theory	
COURSE CODE	STATEMENTS
C 428.1	Understand regulations related to cosmetics and cosmetic excipients and basic structure and functions of skin, hair and oral cavity.
C 428.2	Comprehend Principles of formulation and building blocks of skin and hair care products
C 428.3	Know about sun protection and role of herbs in cosmeceuticals.
C 428.4	Understand Principles of Cosmetic Evaluation and explore the working of instruments used for evaluation.
C 428.5	Basic understanding of the terms Comedogenic, dermatitis and other disorders of skin, hair and scalp and their treatment.

BP811ET - Course outcome C 429 - Cosmetic science – Theory	
COURSE CODE	STATEMENTS
C 429.1	Learn advanced instruments like NMR and Mass Spectrometry and their applications.
C 429.2	Study thermal methods like TGA and DSC for drug stability analysis.
C 429.3	Understand calibration procedures for analytical instruments.
C 429.4	Know Radio immune assay and Extraction techniques
C 429.5	Understand the principles and instrumentation of hyphenated techniques in pharmaceutical analysis.



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I SEMESTER

BP107P- Course Name C 111 Human Anatomy and Physiology –Practical	
COURSE CODE	STATEMENTS
CP 111.1	This course equips students with an understanding of the functions of the human body's sensory organs.
CP 111.2	The course provides specimens that aid in the comprehension of various parts of the human body.
CP 111.3	Students are encouraged to create chart models, which help enhance their organizational and time management skills.
CP 111.4	The course allows students to study the structure and functions of body organs in depth.

BP108P - Course Name C 112 - Pharmaceutical Analysis I–Practical	
COURSE CODE	STATEMENTS
CP 112.1	This subject imparts knowledge about limit tests.
CP 112.2	It offers comprehensive information on the preparation and standardization of various compounds.
CP 112.3	It deepens understanding of compound assays.
CP 112.4	It provides detailed insights into the preparation and normality of solutions.
CP 112.5	It briefly explains the determination of normality through electrochemical methods.



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BP109P - Course Name C 113 -Pharmaceutics I–Practical	
COURSE CODE	STATEMENTS
CP 113.1	To understand the concepts related to dosage forms, such as monophasic and biphasic liquid dosage forms.
CP 113.2	To apply principles and procedures for preparing emulsions and suspensions.
CP 113.3	To prepare and dispense liquid dosage forms for external use.
CP 113.4	To explain the process of compounding suppositories.
CP 113.5	To discuss the concepts and principle involved in the compounding and dispensing of liquid dosage forms for instillation.

BP110P - Course Name C 114 - Pharmaceutical Inorganic Chemistry –Practical	
COURSE CODE	STATEMENTS
CP 114.1	To perform limit tests that help identify impurities, ensuring the quality of compounds is maintained.
CP 114.2	To carry out purity tests to assess the quality of compounds.
CP 114.3	To prepare inorganic compounds, understanding the procedures and purification techniques, including recrystallization
CP 114.4	To conduct identification tests for inorganic compounds.



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BP111P - Course Name C 115 -Communication skills –Practical*	
COURSE CODE	STATEMENTS
CP 115.1	This course fully supports students in developing their language and communication skills for a better future.
CP 115.2	The course provides practical support to students in various areas that are highly useful.
CP 115.3	Throughout the course, students are encouraged to participate in presenting topics in class and in inter-college competitions.
CP 115.4	The course also helps students practice for interviews and participates in group discussions relevant to their field of study.
CP 115.5	The course helps students improve their listening skills in authentic accents and enables them to read and speak like native English speakers.

BP112RBP - Course Name C 116 -Remedial Biology– Practical*	
COURSE CODE	STATEMENTS
CP 116.1	To learn the proper use of a microscope, section cutting techniques, as well as mounting and staining processes.
CP 116.2	To gain an understanding of plant parts and their modifications.
CP 116.3	To identify and study the histology of different organs and tissues through permanent slides.
CP 116.4	To study and understand the detailed anatomy of a frog using computer models.



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II SEMESTER

BP207P - Course Name C 127 - Human Anatomy and Physiology II– Practical	
COURSE CODE	STATEMENTS
CP 125.1	This course equips students with an understanding of the functions of the human body's sense organs.
CP 125.2	The course provides specimens that facilitate the study of various parts of the human body.
CP 125.3	Students are trained in using tools for evaluating key parameters in the human body.
CP 125.4	This course enables students to design chart models, enhancing their organizational and time management skills.

BP208P - Course Name C 126 - Pharmaceutical Organic Chemistry I– Practical	
COURSE CODE	STATEMENTS
CP 126.1	Perform a systematic analysis of unknown organic compounds, including a minimum of five compounds.
CP 126.2	Conduct tests for functional group detection, solubility, and determine melting and boiling points.
CP 126.3	Prepare suitable solid derivatives from organic compounds.
CP 126.4	Construct molecular models.

BP209P - Course Name C 127 - Biochemistry – Practical	
COURSE CODE	STATEMENTS



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CP 127.1	Analyze carbohydrates
CP 127.2	Identify proteins and amino acids
CP 127.3	Perform urine analysis & Estimate the blood glucose and serum creatinine levels helpful to diagnose the diseases
CP 127.4	Assess the activity of enzymes at different temperatures and different substrate concentrations

BP210P - Course Name C 129 – Computer Applications – Practical*	
COURSE CODE	STATEMENTS
CP 129.1	Students will learn to prepare the documents by using MS Word.
CP 129.2	They will be able to prepare power point presentations and create excel sheets.
CP 129.3	They manage databases for storing, organizing, and retrieving information effectively.

III SEMESTER

BP305P - Course Name C 211 - Pharmaceutical Organic Chemistry II – Practical	
COURSE CODE	STATEMENTS
CP 211.1	Learn about various purification techniques.
CP 211.2	Examine and analyse fats and oils using different methods
CP 211.3	Develop pharmaceutical intermediates through electrophilic aromatic substitution reactions
CP 211.4	Synthesize organic intermediates using oxidation, hydrolysis, condensation, and diazotization reactions



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BP306P - Course Name C 212 - Physical Pharmaceutics I – Practical	
COURSE CODE	STATEMENTS
CP 212.1	Evaluate the physicochemical properties of drug molecules.
CP 212.2	Understand the role of surfactants in formulation development and learn how to determine the HLB value.
CP 212.3	Explore the importance of complexation and its stability considerations.

BP307P - Course Name C 213 - Pharmaceutical Microbiology – Practical	
COURSE CODE	STATEMENTS
CP 213.1	Learn about equipment, aseptic culture transfer techniques, preparation of sterile culture media, sterilization of glassware and isolation of pure cultures through streaking.
CP 213.2	Evaluate microbial enzymatic activity.
CP 213.3	Assess the potency of antibiotics and perform sterility testing of pharmaceuticals
CP 213.4	Observe microbial cultures microscopically using various staining techniques and determine motility through the hanging drop method.
CP 213.5	Study and identify different types of contaminated cultures during the course.

BP308P - Course Name C 214 - Pharmaceutical Engineering – Practical	
COURSE CODE	STATEMENTS
CP 214.1	Understand the various unit operations and processes conducted in the industry.
CP 214.2	Explore different types of equipment used in unit operations, including their principles, construction, operation, advantages, and disadvantages



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CP 214.3	Apply this knowledge to effectively manage pharmaceutical industry operations
CP 214.4	Evaluate the factors influencing the packaging industry.
CP 214.5	Comprehend the fundamental principles of filtration

IV SEMESTER

BP406P - Course Name C 226 - Medicinal Chemistry I – Practical	
COURSE CODE	STATEMENTS
CP 226.1	Gain a basic understanding of the reactions and preparation of medicinal compounds.
CP 226.2	Understand the principles of quantitative analysis and various titration methods
CP 226.3	Learn about the methods used to assess the purity of drugs
CP 226.4	Understand the separation of drugs based on their solubility properties

BP407P - Course Name C 227 - Physical Pharmaceutics II – Practical	
COURSE CODE	STATEMENTS
CP 227.1	Understand the importance of micromeritic properties and their determination
CP 227.2	Learn the principles of chemical kinetics and apply them to stability testing and determining the expiry date of formulations.
CP 227.3	Gain knowledge of the preparation of suspensions and emulsions, along with their stability testing.



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CP 227.4	Explain the physicochemical properties of drug molecules, including pH and solubility
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BP408P - Course Name C 228 - Pharmacology I – Practical	
COURSE CODE	STATEMENTS
CP 228.1	Learn about common laboratory techniques used in pharmacological studies
CP 228.2	Apply knowledge to study different routes of drug administration in mice or rats
CP 228.3	Understand the effects of drugs on the ciliary motility of frog esophagus and the rabbit eye
CP 228.4	Gain insights into the effects of skeletal muscle relaxants using the rotarod apparatus
CP 228.5	Comprehend the principles and applications of the actophotometer

BP409P - Course Name C 229 - Pharmacognosy and Phytochemistry I – Practical	
COURSE CODE	STATEMENTS
CP 229.1	Conduct quantitative microscopy to determine leaf constants for quality evaluation
CP 229.2	Measure extractive values and ash values as per pharmacopeial standards
CP 229.3	Analyze the morphological and microscopic characteristics of medicinal plants, with a focus on identifying diagnostic features such as calcium oxalate crystals and starch grains
CP 229.4	Perform chemical evaluation to accurately identify crude drugs.



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V SEMESTER

BP506P - Course Name C 312 - Industrial Pharmacy I – Practical	
COURSE CODE	STATEMENTS
CP 312.1	Gain knowledge of various pharmaceutical dosage forms and their manufacturing techniques
CP 312.2	Understand the importance of excipients, stability studies, and the standard evaluation procedures to ensure optimal storage conditions for dosage forms.
CP 312.3	Understand the pre-formulation aspects of drugs and the formulation of various solid, liquid, semisolid, and sterile dosage forms
CP 312.4	Evaluate the quality of solid, liquid, semisolid, and sterile dosage forms, along with their container and closure systems.

BP507P - Course Name C 313 - Pharmacology II – Practical	
COURSE CODE	STATEMENTS
CP 313.1	Acquire basic knowledge in performing bioassays for various compounds
CP 313.2	Gain an understanding of animal grouping techniques for preclinical studies
CP 313.3	Learn to perform preclinical screening of animals for analgesic and diuretic activities
CP 313.4	Develop skills in using specialized pharmaceutical software Ex Pharma

BP508P - Course Name C 314 - Pharmacognosy and Phytochemistry II – Practical	
COURSE CODE	STATEMENTS



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CP 314.1	Conduct organoleptic and morphological studies of carbohydrates, tannins, and fibers
CP 314.2	Learn quantitative microscopic evaluation techniques for authenticating herbal drugs
CP 314.3	Identify adulteration in herbal drugs and understand the evaluation methods used to detect it.
CP 314.4	Study physical evaluation techniques, including determining the extractive value.

VI SEMESTER

BP607P Course outcome C 326 - Medicinal chemistry III – Practical	
COURSE CODE	STATEMENTS
CP 326.1	Learn the basics of reactions and preparation of medicinal compounds.
CP 326.2	Understand qualitative analysis and various titration methods
CP 326.3	Use ChemDraw software to draw structures and reactions
CP 326.4	Analyze the physicochemical properties of drugs using software tools
CP 326.5	Understand the chemistry of drugs with respect to their biological activity

BP608P Course outcome C 327 - Pharmacology III– Practical	
COURSE CODE	STATEMENTS
CP 327.1	Screen drugs for gastrointestinal efficacy, hypoglycemic, and antiallergic effects, and correlate clinical and biochemical parameters with diseases
CP 327.2	Calculate drug doses for pharmacological experiments and translate them to human doses using standard methods



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CP 327.3	Apply appropriate biostatistical methods for data interpretation and calculations
CP 327.4	Understand OECD guidelines and interpret acute toxicity studies for drug safety evaluation

BP608P Course outcome C 328 - Herbal Drug Technology – Practical	
COURSE CODE	STATEMENTS
CP 328.1	Understand morphological characteristics and perform preliminary chemical tests for flavonoids, tannins, gums, mucilages, fixed oils, volatile oils, alkaloids, and glycosides
CP 328.2	Learn the preparation methods for Ayurvedic formulations and herbal cosmetics
CP 328.3	Perform standardization and evaluation of herbal-based products like syrups and mixtures
CP 328.4	Determine aldehyde content, phenol content, and total alkaloid content.

VII SEMESTER

BP705P - Course outcome C 411 - Instrumental Methods of Analysis– Practical	
COURSE CODE	STATEMENTS
CP 411.1	Record, calculate, and interpret data from techniques like UV-VIS spectroscopy, fluorimetry, flame photometry, and nepheloturbidometry.
CP 411.2	Develop and optimize mobile phase compositions for qualitative analysis using TLC and PC.
CP 411.3	Explain the working principles and applications of column chromatography, HPLC, and GC.