



# NIRMALA COLLEGE OF PHARMACY

(A UNIT OF CATECHIST SISTERS OF ST.ANN'S, HYD)

ATMAKURU (Village), Mangalagiri (M), Guntur Dist-522503, A.P, India.

Approved by AICTE & PCI New Delhi & Govt. of A.P, Affiliated to SBTET& A.N University, Guntur

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Ph: 08645-236255, 236722, 9912342142 E-mail: [ncpa@csagp@yahoo.co.in](mailto:ncpa@csagp@yahoo.co.in) Web site: [www.ncpacsag.ac.in](http://www.ncpacsag.ac.in)

## B.PHARMACY COURSE OUTCOMES

Course code	Name of the course	Course Outcomes
<b>I Semester</b>		
BP101T	Human Anatomy and Physiology I – Theory	<ol style="list-style-type: none"><li>1. By studying this course, students are able to correlate Human Anatomy &amp; Physiology with other biomedical sciences.</li><li>2. It provides basic knowledge about the structure and physiology of human body.</li><li>3. The students would get an idea about the mechanism of action of drugs as they study the basic structure of Human body.</li><li>4. By studying this course, students would be able to understand the coordinated working pattern of organs of human body.</li><li>5. Through this course, students would be able to understand homeostatic mechanisms of Human body.</li></ol>
BP102T	Pharmaceutical Analysis I – Theory	<ol style="list-style-type: none"><li>1. It provides an opportunity to acquire knowledge about current technological developments in relevant fields.</li><li>2. To cover areas such as new concepts, methods and techniques, theory and skills development and up gradation of educational technology, to keep pace with the changing scenario in Technical Education.</li><li>3. It creates and updated the knowledge regarding general research capabilities</li><li>4. To create research ambience in the institutes by promoting research innovations in established and newer technologies.</li><li>5. It gives brief information regarding Errors, minimization of Errors in laboratory.</li></ol>



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## B.PHARMACY COURSE OUTCOMES

BP103T	Pharmaceutics I – Theory	<ol style="list-style-type: none"> <li>1.To understand the concepts related to dosage forms like monophasic and biphasic liquid dosage forms</li> <li>2.To apply the knowledge of principles and procedures to prepare emulsions and suspensions</li> <li>3.To prepare and dispense the liquid dosage forms for external applications</li> <li>4.To elucidate the compounding of suppositories</li> <li>5.To discuss the concepts and principles in the compounding and dispensing of liquid dosage form for installation</li> </ol>
BP104T	Pharmaceutical Inorganic Chemistry –Theory	<ol style="list-style-type: none"> <li>1. To know the source of impurities and method to determine the impurities in inorganic drugs and pharmaceuticals</li> <li>2. To understand the medicinal and pharmaceutical importance of inorganic compounds</li> <li>3.To study the importance of radio pharmaceuticals in pharmacy</li> <li>4.To study the importance of various extracellular and intracellular ions in the maintainable of physiological functioning of the body</li> <li>5. To know the importance of standard books such as pharmacopoeias in the pharmacy</li> </ol>
BP105T	Communication skills – Theory *	<ol style="list-style-type: none"> <li>1. The course is very important to students from Graduation.</li> <li>2. The course can support the students to know theoretically about Presentation Skills, Listening Skills, Interview Skills, Group Discussion</li> <li>3. Undoubtedly students can gain enough goals during the course period.</li> <li>4. The course can support the students to gain abilities in Verbal and Non-Verbal Communication areas.</li> </ol>



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BP106 RBT BP106 RMT	Remedial Biology/ Remedial Mathematics – Theory*	<ol style="list-style-type: none"> <li>1. To know the classification and silent features of five kingdoms of life.</li> <li>2. Understand the basic components of anatomy and physiology of plant</li> <li>3. Learn and understand basic components of plant mineral nutrition and photosynthesis</li> <li>4. Learn and understand various functioning systems of humans.</li> <li>5. Learns about the general anatomical characters of plants.</li> </ol>
BP107P	Human Anatomy and Physiology –Practical	<ol style="list-style-type: none"> <li>1. This course provide the students' knowledge about the functions of sense organs of Human body.</li> <li>2. This course provides specimens which help to understand various parts of human body.</li> <li>3. This course allows the students to prepare chart models which helps the students to improve their organizational skills as well as time management techniques.</li> <li>4. During the study of this course, students are allowed to study about structure and functions of organs of body elaborately.</li> </ol>
BP108P	Pharmaceutical Analysis I – Practical	<ol style="list-style-type: none"> <li>1. This subject give a knowledge on limit tests</li> <li>2. It provides detailed information on preparation and standardization of different compounds.</li> <li>3. It enrich the knowledge in Assays of compound.</li> <li>4. It gives the detailed knowledge about preparation and Normalities of solutions.</li> <li>5. It gives brief explanation regarding Determination of Normalities by Electro-chemical methods.</li> </ol>
BP109P	Pharmaceutics I – Practical	<ol style="list-style-type: none"> <li>1. To understand the concepts related to dosage forms like monophasic and biphasic liquid dosage forms</li> <li>2. To apply the knowledge of principles and procedures to prepare Emulsions and Suspensions</li> <li>3. To prepare and dispense the liquid dosage forms for external applications</li> </ol>



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## B.PHARMACY COURSE OUTCOMES

		<p>4.To elucidate the compounding of Suppositories</p> <p>5.To discuss the concept and principles in the compounding and dispensing of liquid dosage form for instillation.</p>
BP110P	Pharmaceutical Inorganic Chemistry –Practical	<p>1. To carry out the limit test which are useful to identify the impurities there by we can maintain the quality of compounds</p> <p>2.To carry out the identification tests for the inorganic compounds</p> <p>3. To carry out the tests for purity to check the quality of the compounds</p> <p>4. To carryout preparation of the inorganic compounds thereby to understand the procedure and purification of compounds by recrystallisation.</p>
BP111P	Communication skills – Practical*	<p>1. The course 100/ percent support the students to develop their language skills and communication skills for their better future.</p> <p>2. The course supports the students practically in many areas that are useful.</p> <p>3. During the course students are encouraged to participate in presenting topics in the class room and in Inter College competitions.</p> <p>4. The course is also supporting the students to have practices for attending interviews and to participate in Group Discussions related to their course.</p> <p>5. Finally the course helps the students to listen clearly in original accents and make them to read and speak as Native English speakers do.</p>
BP112R BP	Remedial Biology – Practical*	<p>1. Learns about the usage process of microscope, section cutting techniques, mounting and staining process</p> <p>2. To be able to understand the plant parts and their modification</p> <p>3. Identify histological study of different organs/tissues through permanent slides</p> <p>4. Learn and understand about in detailed study of frog by using computer models.</p>



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## B.PHARMACY COURSE OUTCOMES

<b>II Semester</b>		
BP201T	Human Anatomy and Physiology II – Theory	<ol style="list-style-type: none"> <li>1. By studying this course, students are able to correlate Human Anatomy &amp; Physiology with other biomedical sciences.</li> <li>2. It provides basic knowledge about the structure and physiology of human body.</li> <li>3. The students would get an idea about the mechanism of action of drugs as they study the basic structure of Human body.</li> <li>4. By studying this course, students would be able to understand the coordinated working pattern of organs of human body.</li> <li>5. Through this course, students would be able to understand homeostatic mechanisms of Human body.</li> </ol>
BP202T	Pharmaceutical Organic Chemistry I – Theory	<ol style="list-style-type: none"> <li>1. Subject deals with the classification and nomenclature of organic compounds</li> <li>2. It also deals with the structural isomerism, intermediate forming in reaction, important physical properties, reactions and methods of preparation of these compounds</li> <li>3. It also deals with SN<sup>1</sup>, SN<sup>2</sup> &amp; E<sub>1</sub>, E<sub>2</sub> reactions. Free radical additions reactions of conjugated dienes.</li> <li>4. It deals with chemistry of carbonyl compounds. Named reactions and mechanisms</li> <li>5. It deals with carboxylic acids effects of substitutes on acidity. Structures of organic compounds.</li> </ol>
BP203T	Biochemistry – Theory	<ol style="list-style-type: none"> <li>1. Chemistry of biomolecules and bioenergetics</li> <li>2. Metabolism of carbohydrates in physiological and pathological conditions</li> <li>3. Lipid and amino acid metabolic pathways in normal and diseased conditions.</li> <li>4. Genetic organization of mammalian genome</li> <li>5. Importance of enzymes and their inhibitors in diagnostic and therapeutic applications.</li> </ol>
BP204T	Pathophysiology – Theory	<ol style="list-style-type: none"> <li>1. To understand the various etiology and basic pathophysiological mechanisms of different diseases.</li> <li>2. To understand name the signs &amp; symptoms of different type of diseases.</li> </ol>



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		<ol style="list-style-type: none"> <li>To understand complications of different diseases.</li> <li>To apply the knowledge of the relevant of pathology of various conditions with reference its pharmacological Applications.</li> <li>It gives the detailed information regarding infectious diseases.</li> </ol>
BP205T	Computer Applications in Pharmacy – Theory *	<ol style="list-style-type: none"> <li>To know the various types of applications of computers in Pharmacy</li> <li>Know the various types Data bases.</li> <li>To Know the various Applications of data bases in Pharmacy</li> <li>To Know the concept of System development life cycle.</li> </ol>
BP206T	Environmental sciences – Theory *	<ol style="list-style-type: none"> <li>To gain basic knowledge about environment.</li> <li>To learn and understand how to use natural resources judiciously.</li> <li>To learn how to control pollution.</li> <li>Acquire skill to solve the problems of environment.</li> <li>Develop an attitude of concern towards ecosystem.</li> </ol>
BP207P	Human Anatomy and Physiology II – Practical	<ol style="list-style-type: none"> <li>This course provide the students' knowledge about the functions of sense organs of human body.</li> <li>This course provide specimens which help to understand various parts of human body</li> <li>This course trains the students about usage of tools for the evaluation of parameters.</li> <li>This course allows the students to prepare chart models which helps the students to improve their organizational skills as well as time management techniques.</li> </ol>
BP208P	Pharmaceutical Organic Chemistry I – Practical	<ol style="list-style-type: none"> <li>Systematic analysis of unknown organic compounds. Minimum analysis of five compounds</li> <li>Detection of functional groups, solubility tests, determination of melting and boiling points</li> <li>Preparation of suitable solid derivatives from organic compounds</li> <li>Construction of molecular models.</li> </ol>



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BP209P	Biochemistry – Practical	<ol style="list-style-type: none"> <li>1. Analyze carbohydrates</li> <li>2. Identify proteins and amino acids</li> <li>3. Perform urine analysis &amp; Estimate the blood glucose and serum creatinine levels helpful to diagnose the diseases</li> <li>4. Assess the activity of enzymes at different temperatures and different substrate concentrations.</li> </ol>
BP210P	Computer Applications in Pharmacy – Practical*	<ol style="list-style-type: none"> <li>1. To Prepare the Documents by using MS Word</li> <li>2. To create Data bases.</li> <li>3. To create web pages</li> </ol>
<b>III Semester</b>		
BP301T	Pharmaceutical Organic Chemistry II – Theory	<ol style="list-style-type: none"> <li>1. To understand how to write the reaction, name of the reaction and orientation of reactions and their reactivity/stability of compounds</li> <li>2. To understand how to write the reaction, name of the reaction and orientation of reactions and their reactivity/stability of compounds</li> <li>3. To understand the knowledge about fats and oils and their properties.</li> <li>4. To know the source of poly nuclear hydrocarbon properties &amp; reactions and their medicinal uses.</li> <li>5. To acquire the knowledge about stereochemical properties and preparations of cycloalkanes.</li> </ol>
BP302T	Physical Pharmaceutics I – Theory	<ol style="list-style-type: none"> <li>1. To understand various physicochemical properties of drug molecules in designing the dosage forms.</li> <li>2. To demonstrate the use of various physicochemical properties in the formulation development and evaluation of dosage form.</li> <li>3. To understand the principles in complexation and their stability.</li> </ol>





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## B.PHARMACY COURSE OUTCOMES

		4. To know the significance of pH and tonicity in formulation of dosage forms
BP303T	Pharmaceutical Microbiology – Theory	<ol style="list-style-type: none"> <li>1. To Know about the historical development, Morphology, Classification, Bacterial growth cycle &amp; factors influencing the bacterial growth. Studying of different microscopes &amp; isolation, preservation techniques of microbes.</li> <li>2. To understand the Morphology and classification of bacteria by different staining techniques &amp; Estimation of microbial Enzymatic activity and cell counting techniques. Know about different sterilization techniques &amp; sterility indicators.</li> <li>3. To Know about various aspects of clean up area &amp; Designing of aseptic cabin. <ul style="list-style-type: none"> <li>- To acquire the Knowledge about sources of contamination and spoilage of pharmaceuticals.</li> <li>- To know about the preservatives and their role in the pharmaceuticals.</li> </ul> </li> <li>4. To acquire the knowledge about classification, mechanism of action &amp; effectiveness of disinfectants &amp; sterilization processes &amp; their evaluation.</li> <li>5. To study the Morphology, classification and reproductions of Fungi and Virus.</li> <li>6. To study the Cell cultivation techniques. To Know about the methods of sterility testing of pharmaceuticals.</li> </ol>
BP304T	Pharmaceutical Engineering – Theory	<ol style="list-style-type: none"> <li>1. To know the various unit operations and process carried out in industry</li> <li>2. To study the different types of equipments in unit operations with its principle construction, working, advantages and disadvantages.</li> <li>3. To apply the knowledge in handling of pharmaceutical industry operations.</li> <li>4. To assess the factors that affects the Packaging industry</li> <li>5. To understand the principle of Filtration</li> </ol>
BP305P	Pharmaceutical Organic Chemistry II – Practical	<ol style="list-style-type: none"> <li>1. To Understand different purification methods</li> <li>2. To Analyze fats and oils by various methods.</li> <li>3. To Prepare pharmaceutical intermediates by electrophilic aromatic substitution reactions</li> </ol>





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## B.PHARMACY COURSE OUTCOMES

		4. To Synthesize organic intermediates by oxidation, hydrolysis, condensation and diazotization reactions.
BP306P	Physical Pharmaceutics I – Practical	<ol style="list-style-type: none"> <li>1. To understand the evaluation of various physicochemical properties of drug molecules.</li> <li>2. To demonstrate the significance of surfactants in formulation development and the determination of HLB value.</li> <li>3. To know the significance of complexation and its stability aspects.</li> </ol>
BP307P	Pharmaceutical Microbiology – Practical	<ol style="list-style-type: none"> <li>1. Study of Equipment, Aseptic culture transfer techniques and preparation of sterile culture medias and Sterilization of Glass wares and Isolation of pure culture by streaking.</li> <li>2. Estimation of Microbial enzymatic activity.</li> <li>3. Determination of potency of Antibiotics and sterility testing of pharmaceuticals.</li> <li>4. Microscopic observation of cultures by different staining techniques and motility by Hanging drop method.</li> <li>5. During the study of this course, students are allowed to study types of contaminated cultures and their identification.</li> </ol>
BP 308P	Pharmaceutical Engineering – Practical	<ol style="list-style-type: none"> <li>1. To know the various unit operations and process carried out in industry</li> <li>2. To study the different types of equipments in unit operations with its principle construction, working, advantages and disadvantages.</li> <li>3. To apply the knowledge in handling of pharmaceutical industry operations.</li> <li>4. To assess the factors that affects the Packaging industry</li> <li>5. To understand the principle of Filtration.</li> </ol>



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<b>IV SEMESTER</b>		
BP401T	Pharmaceutical Organic Chemistry III– Theory	<ol style="list-style-type: none"><li>1. This subject imparts the knowledge on stereo chemical aspects of organic compounds such as optical isomerism, racemic mixture, resolution of racemic mixture</li><li>2. It also explains the naming and nomenclature, properties, therapeutic uses of heterocyclic compounds</li><li>3. It also explains the basic concepts of geometrical isomerism, stereo selective, stereo specific reactions</li><li>4. It deals with the named reactions and mechanism of named reactions</li><li>5. It deals with the structure, properties, therapeutic uses of various organic compounds</li></ol>
BP402T	Medicinal Chemistry I – Theory	<ol style="list-style-type: none"><li>1. To know the history and properties of the drugs</li><li>2. To understand the drug metabolic pathways, adverse effects and therapeutic value of drugs</li><li>3. To apply the knowledge of medicinal compounds and their mechanism of action in treatment of various diseases</li><li>4. To know the structural activity relationship (SAR) of different class of drugs</li><li>5. To know the knowledge about diseases and to write the chemical synthesis of some drugs</li></ol>
BP403T	Physical Pharmaceutics II – Theory	<ol style="list-style-type: none"><li>1. Understand various physicochemical properties of drug molecules in the designing the dosage forms</li><li>2. Know the principles of chemical kinetics &amp; to use them for stability testing and determination of expiry date of formulations</li><li>3. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.</li><li>4. Have basic knowledge of pharmaceutical suspensions and colloids.</li><li>5. Have basic understanding of the pharmaceutical applications of various Micromeritic properties</li></ol>



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BP404T	Pharmacology I – Theory	<ol style="list-style-type: none"> <li>1. Describing about the different drugs used for treatment of diseases.</li> <li>2. Students are able to apply the pathophysiological knowledge of different diseases and disorders in treatment</li> <li>3. The students would have learnt about drugs used in treatment of CVS disorders, CNS disorders ANS disorders</li> <li>4. They would get an idea about correlation of pharmacology with other bio medical sciences.</li> </ol>
BP405T	Pharmacognosy and Phytochemistry I– Theory	<ol style="list-style-type: none"> <li>1. To be able to understand the pharmacognostical information and therapeutics of glycosides and alkaloids in herbal drugs</li> <li>2. To learn the classification ,chemical identification tests and pharmacological activities of tannins and resins ,volatile oils and extraction methods</li> <li>3. To know the significance of fibers of different sources</li> <li>4. To understand the strategy of the plant tissue culture and its importance in production of secondary metabolites ..for easy learning showed some plant tissue culture processing videos to students ,edible vaccine importance etc.</li> <li>5. Aware about the different medicinal systems like Allopathy, Homeopathy, Unani, Siddha &amp; Ayurveda and also acquiring the knowledge on marine drugs.</li> </ol>
BP406P	Medicinal Chemistry I – Practical	<ol style="list-style-type: none"> <li>1. To know the basic idea about the reactions and preparations of medicinal compounds</li> <li>2. To understand the quantitative analysis and different types of titration methods</li> <li>3. To know about the purity of drugs</li> <li>4. To know the separation of drugs based on their solubility.</li> </ol>
BP407P	Physical Pharmaceutics II – Practical	<ol style="list-style-type: none"> <li>1. Importance of micrometric properties and determination</li> <li>2. Know the principles of chemical kinetics &amp; to use them for stability testing and determination of expiry date of formulations</li> </ol>



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## B.PHARMACY COURSE OUTCOMES

		<ol style="list-style-type: none"> <li>3. Know the preparation of suspensions and emulsions &amp; know the stability testing</li> <li>4. State the physicochemical properties of drug molecules, pH, and solubility.</li> </ol>
BP408P	Pharmacology I – Practical	<ol style="list-style-type: none"> <li>1. Describing about the Common laboratory techniques</li> <li>2. Students are able to apply the knowledge of study of different routes of drug administration in mice or rats</li> <li>3. The students would have learnt about effect of drugs on ciliary motility of frog oesophagus and effect of drug on rabbit eye</li> <li>4. They would get an idea about effect of skeletal muscle relaxants using rota rod apparatus</li> <li>5. They comprehended the principles of actophotometer.</li> </ol>
BP409P	Pharmacognosy and Phytochemistry I – Practical	<ol style="list-style-type: none"> <li>1. To be able to understand the pharmacognostical information based on morphology and microscopical, histological studies like stomatal number, stomatal index, vein islet number of different herbal crude drugs</li> <li>2. To detect the herbal crude drugs based on different chemical identification tests</li> <li>3. To know the quality of crude drugs by performing various physical evaluation parameters like ash value, swelling index, extractive value etc.. significance of glycosides, alkaloids, volatile oils, tannins and resins</li> <li>4. To understand the strategy of measurement of length, width and diameter of phloem fibres and starch grains with the help of calibration factor</li> </ol>
<b>V SEMESTER</b>		
BP501T	Medicinal Chemistry II – Theory	<ol style="list-style-type: none"> <li>1. To understand the chemistry of drugs with respect to their pharmacological activity</li> <li>2. To understand the drug metabolic pathways, adverse effects and therapeutic value of drugs</li> <li>3. To apply the knowledge of medicinal compounds and their mechanism of action in treatment of various diseases</li> <li>4. To know the structural activity relationship (SAR) of different class of drugs</li> <li>5. To write the chemical synthesis of some drugs</li> </ol>



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## B.PHARMACY COURSE OUTCOMES

BP502T	Industrial Pharmacy I– Theory	<ol style="list-style-type: none"> <li>1. Upon completion of the course the student shall be able to understand the various dosage forms formulation, Manufacturing methods, Quality control tests.</li> <li>2. Study of physicochemical properties of drugs as a tool in the optimization of solid and liquid dosage forms.</li> <li>3. Students will learn advanced Methods to prepare dosage forms</li> <li>4. Evaluate the pharmaceutical dosage forms for quality and stability and compare with standards prescribed in the pharmacopoeia</li> <li>5. They know very well about orally administered drugs, injectables, aerosol and semisolid preparations with standard protocols.</li> </ol>
BP503T	Pharmacology II – Theory	<ol style="list-style-type: none"> <li>1. Students were able to calculate the dose for pharmacological experiments and translate to human dose using standard calculation methods.</li> <li>2. Gain sound knowledge on the release and effect of many pathological mediators.</li> <li>3. Information regarding treatment of different cardiovascular complications.</li> <li>4. Information on various endocrine hormones, pathological roles and information regarding drugs for treatment.</li> <li>5. Bioassays and Importance of Bioassay in analyzing the potency of compounds.</li> </ol>
BP504T	Pharmacognosy and Phytochemistry II – Theory	<ol style="list-style-type: none"> <li>1. To be able to understand the history , scope and development of herbal drugs and their classification</li> <li>2. Learn the traditional and novel cultivational methodologies for herbal drug cultivation</li> <li>3. Quality controlling measures to be employed in herbal drugs</li> <li>4. Learns the pharmacognostical information of carbohydrate, proteins, tannins, fibres and resins</li> <li>5. Identifies and learns metabolic pathways in plants</li> </ol>



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## B.PHARMACY COURSE OUTCOMES

BP505T	Pharmaceutical Jurisprudence – Theory	<ol style="list-style-type: none"> <li>1.To know the pharmacy acts</li> <li>2. Explanation of different schedules</li> <li>3. To know the pharmacy educational standards</li> <li>4. To know the rules and ethics of pharmacy profession</li> <li>5. To regulate and import various drugs</li> </ol>
BP506P	Industrial Pharmacy I – Practical	<ol style="list-style-type: none"> <li>1. Know the various pharmaceutical dosage forms and their manufacturing techniques.</li> <li>2. Also they know the Importance of excipients, stability study of dosage form and its standard evaluation procedure for better storage conditions.</li> <li>3. Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality</li> <li>4. Developing a preparation of the dosage form which is both stable and acceptable to the patient</li> </ol>
BP507P	Pharmacology II – Practical	<ol style="list-style-type: none"> <li>1. Students would have basic knowledge in performing bioassays for compounds.</li> <li>2. Students gain knowledge regarding grouping of animals for preclinical studies.</li> <li>3. Preclinical screening of animals for analgesic and diuretic activity are done.</li> <li>4. They gain knowledge on usage of softwares Ex.pharma.</li> </ol>
BP508P	Pharmacognosy and Phytochemistry II – Practical	<ol style="list-style-type: none"> <li>1.Organoleptic and morphological study of carbohydrates, tannins, fibres</li> <li>2.Learns the quantitative microscopic evaluation techniques in herbal drugs authentication</li> <li>3.Identifies the adulteration and evaluation methods employed in herbal drugs</li> <li>4. Learns the physical evaluation techniques like extractive value</li> </ol>
<b>VISEMESTER</b>		
BP601T	Medicinal Chemistry III – Theory	<ol style="list-style-type: none"> <li>1. To understand the importance of drug design and different techniques of drug design</li> <li>2. To understand the chemistry of drugs with respect their biological activity</li> <li>3. To know the metabolism adverse effects and therapeutic value of drugs</li> <li>4. To know the structural activity relationship (SAR) of different class of drugs</li> <li>5. To write the chemical synthesis of some drugs</li> </ol>



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## B.PHARMACY COURSE OUTCOMES

BP602T	Pharmacology III – Theory	<ol style="list-style-type: none"> <li>1. Explain the pharmacology and rational use of drugs used for the treatment various endocrine disorders and Evaluate the effects of drugs using animal models of G.I. diseases.</li> <li>2. Discover the new updates on chemotherapeutic agents and preclinical &amp; clinical research regularly.</li> <li>3. Analyze the problems associated with the drugs used for the treatment various microbial infections and cancer.</li> <li>4. Comprehend the principles of toxicology and treatment of various poisonings and appreciate correlation of pharmacology with related medical.</li> <li>5. Understand the mechanism of drug action and its relevance in the treatment of different infectious diseases</li> </ol>
BP603T	Herbal Drug Technology – Theory	<ol style="list-style-type: none"> <li>1. To be able to understand the Pharmacognostical information of sources of Raw materials in herbal drugs.</li> <li>2. To know the importance of Neutraceuticals and Herb - Drug interactions and Herb - Food interactions.</li> <li>3. To Know the significance of Herbal formulations and Excipients used in Herbal cosmetic formulations.</li> <li>4. To aware about the WHO &amp; ICH guidelines and Patent regulatory requirements</li> <li>5. Aware about the different Herbal industries and GMP, Indian system of medicine including schedule – T drugs.</li> </ol>
BP604T	Biopharmaceutics and Pharmacokinetics –Theory	<ol style="list-style-type: none"> <li>1. Understand the basic concepts in biopharmaceutics and pharmacokinetics and their significance.</li> <li>2. Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion,</li> </ol>





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## B.PHARMACY COURSE OUTCOMES

		<p>elimination.</p> <ol style="list-style-type: none"> <li>To understand the concepts of bioavailability and bioequivalence of drug products and their significance.</li> <li>Understand various pharmacokinetic parameters, their significance &amp; applications.</li> <li>To demonstrate causes of non linearity and estimating parameters in non linear pharmacokinetics.</li> </ol>
BP605T	Pharmaceutical Biotechnology – Theory	<ol style="list-style-type: none"> <li>To discuss about enzyme immobilization techniques and Microbial transformations. To study about Biosensors and collection of Microbial enzymes.</li> <li>To focus on Immunological, Blood products and to acquires knowledge about the preparation of vaccines and Monoclonal antibody preparations.</li> <li>To explain the Genetic organization of prokaryotes and eukaryotes ; to focus on Bio- analytical techniques like ELISA, southern blot and western Blot techniques.</li> <li>To acquire knowledge about steps and tools of RDNA technology and other recombinant product preparation.</li> <li>To study about designing of fermenter and fermentable products. To understand the preparation of Whole human Blood and blood products.</li> </ol>
BP606T	Quality Assurance –Theory	<ol style="list-style-type: none"> <li>This subject deals with various aspects of Quality control and Quality Assurance, GMP, TQM, QbD, ISO certification, NABL Accreditation aspects in pharmaceutical industry.</li> <li>It Enrich the konowledge in Harmonization of ICH.</li> <li>It gives the detailed knowledge about Organization, personnal, training , premises, Equipment and Raw materials.</li> <li>This subject explains about Quality control tests and GLP, Complaints and Documentation.</li> <li>It gives the brief explanation about the concepts of validation, qualification, calibration and warehousing.</li> </ol>



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## B.PHARMACY COURSE OUTCOMES

BP607P	Medicinal chemistry III – Practical	<ol style="list-style-type: none"> <li>1. To know the basic idea about the reactions and preparations of medicinal compounds.</li> <li>2. To understand the qualitative analysis and different types of titration methods</li> <li>3. To Draw the structures and reactions by using software-Chemdraw</li> <li>4. To know the physicochemical properties of the drugs by using software</li> </ol>
BP608P	Pharmacology III – Practical	<ol style="list-style-type: none"> <li>1. Screening the drugs for gastrointestinal efficacy, hypoglycemic effects and anti allergic effects and able to correlate clinical, biochemical parameters with disease.</li> <li>2. Students were able to calculate the dose for pharmacological experiments and translate to human dose using standard calculation methods.</li> <li>3. Discuss about the students how to apply proper biostatistical method for data interpretation and calculations.</li> <li>4. Explain the students about the OECD guide lines, interpetent acute toxicity studies for safety evaluation of the pharmacokinetic profile drug.</li> </ol>
BP609P	Herbal Drug Technology – Practical	<ol style="list-style-type: none"> <li>1. Ability to understand the Morphological characters and Preliminary chemical tests for Flavonoids, Tanins, Gums and Mucilages, Fixed oils and Volatile oils Alkaloids, Glycosides etc.</li> <li>2. Learns the knowledge about method of preparation of Ayurvedic preparations and Herbal cosmetics.</li> <li>3. Standardization and Evaluation of Herbal based products like Syrups, Mixtures.</li> <li>4. Determination of Aldehyde, Phenol content and Total Alkaloid content.</li> </ol>
<b>VI SEMESTER</b>		
BP701T	Instrumental Methods of Analysis – Theory	<ol style="list-style-type: none"> <li>1. To understand the principles and instrumentation of spectroscopy techniques</li> <li>2. To understand the principles and instrumentation of chromatography techniques</li> <li>3. To understand the principles and instrumentation of electrochemical techniques</li> <li>4. To interpret the compounds by spectroscopy techniques</li> </ol>



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## B.PHARMACY COURSE OUTCOMES

		5.To interpret the compounds by spectroscopy techniques.
BP702T	Industrial Pharmacy II – Theory	<ol style="list-style-type: none"> <li>1. Know the process of pilot plant and scale up of pharmaceutical dosage forms</li> <li>2. Understand the process of technology transfer from lab scale to commercial batch</li> <li>3. Know the different Laws and Acts that regulate pharmaceutical industry</li> <li>4. Understand the approval process and regulatory requirements for drug products</li> <li>5. Understand the scale up procedures.</li> </ol>
BP703T	Pharmacy Practice – Theory	<ol style="list-style-type: none"> <li>1. Know various drug distribution methods in a hospital</li> <li>2. Appreciate the pharmacy stores management and inventory control</li> <li>3. Monitor drug therapy of patient through medication chart review and clinical review</li> <li>4. Obtain medication history interview and counsel the patients</li> <li>5. Identify drug related problems</li> <li>6. Detect and assess adverse drug reactions</li> <li>7. Interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states</li> <li>8. Know pharmaceutical care services.</li> </ol>
BP704T	Novel Drug Delivery System – Theory	<ol style="list-style-type: none"> <li>1. Control drug delivery, technology, diffusion, dissolution, polymers and formulations</li> <li>2. Microencapsulation, microencapsulation, method of preparation, Buccal drug delivery system</li> <li>3. Implantable drug delivery, osmotic implants, Transdermal delivery, formulation concept</li> <li>4. Gastroprotective drug delivery, Naso pulmonary drug delivery</li> <li>5. Ocular drug delivery and intra uterine drug delivery.</li> </ol>
BP705P	Instrumental Methods of Analysis – Practical	<ol style="list-style-type: none"> <li>1.To determine qualitative analysis by spectroscopy techniques</li> <li>2.To determine quantitative analysis by spectroscopy techniques</li> <li>3.To determine qualitative analysis by chromatography techniques</li> <li>4.To determine quantitative analysis by chromatography techniques</li> </ol>



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## B.PHARMACY COURSE OUTCOMES

BP706PS	Practice School*	As per the allotment under various departments students can gain the knowledge on various department basic research activities 1. Helps in knowledge gaining related to pharmaceutical dossier preparation 2. Determination of various drug-enzyme docking studies 3. Graduates collect the information related to novel Natural compounds 4. Students can expertise in the various ADR based study reports
<b>VIII SEMESTER</b>		
BP801T	Biostatistics and Research Methodology	1. The student would be able to understand and apply the concepts of Probability. 2. The student would be able to understand the concept of various types of T test and One Way ANOVA. 3. Students can carry out projects by designing their research 4. To understand about application of different statistical tests for data analysis 5. Graphical representation of results can be studied
BP802T	Social and Preventive Pharmacy	1. To Know about the concepts related to public health and about social problems of the sick. to know about importance of nutrition and balanced diet. 2. To understand the prevention and control measures of different diseases and to know about drug abuse and drug addiction. 3. To Know about National health Programs and their importance in eradicating various communicable diseases 4. To acquire the knowledge about role of WHO in social health and in Indian national health programs. 5. To study the Community services in rural, national urban health mission.



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## B.PHARMACY COURSE OUTCOMES

BP805ET	Pharmacovigilance	<ol style="list-style-type: none"><li>1. Why drug safety monitoring is important?</li><li>2. History and development of pharmacovigilance</li><li>3. National and international scenario of pharmacovigilance</li><li>4. Dictionaries, coding and terminologies used in pharmacovigilance</li><li>5. Detection of new adverse drug reactions and their assessment</li><li>6. International standards for classification of diseases and drugs</li><li>7. Adverse drug reaction reporting systems and communication in pharmacovigilance</li><li>8. Methods to generate safety data during pre-clinical, clinical and post approval phases of drugs' life cycle</li><li>9. Drug safety evaluation in pediatrics, geriatrics, pregnancy and lactation</li></ol>
BP811ET	Advanced Instrumentation Techniques	<ol style="list-style-type: none"><li>1. To understand the basic principles and instrumentation of hyphenated techniques</li><li>2. To understand the basic principle and instrumentation of advanced instruments like NMR and mass spectrometry</li><li>3. To understand about basic principles and instrumentation of thermal methods</li><li>4. To understand about calibration of analytical instruments</li><li>5. To understand about validation of analytical instruments</li></ol>