HI -TECH COLLEGE OF PHARMACY,

NAGPUR HIGHWAY, PADOLI PHATA, CHANDRAPUR

THE ACADEMIC YEAR 2019-2020

COURSE OUTCOMES F. Y. B. PHARM (SEMESTER I & II CBCS)

SEMESTER I		
Course Code	Name of the Course	Course Outcomes
BP 101T	Human Anatomy and Physiology-I (Theory)	**Upon the completion of the course, the student shall be able to** 1. Explain how the human body provides a defence mechanism to foreign invaders. 2. Describe the compensatory mechanism by different systems in the human body. 3. Explain the anatomy and physiology of different organs and systems of the human body. 4. Explain how the human body responds to external stimuli. 5. Explain how the co-coordinative and integrative system works in the human body.
BP 107P	Human Anatomy and Physiology-I (Practical)	**Upon the completion of the course, the student shall be able to** 1. Explain the histology of different tissues. 2. Explain the anatomy of the human skeleton 3. Explain the importance of different blood cells which is indicative of human disorders. 4. Explain the importance of pathological changes which is indicative of human disorders. 5. Know the different techniques of blood cell count of a human being.
Course Code	Name of the Course	Course Outcomes
BP 102T	Pharmaceutical Analysis-I (Theory)	**Upon the completion of the course, the student shall be able to** 1. Understand the principles of volumetric and electrochemical analysis. 2. Demonstrate complexometric and non-aqueous titration that helps them in performing practical and expression of various concentrations and preparations. 3. The course will develop different analytical skills. 4. Understand the qualitative and quantitative estimations of chemical compounds.

		5. Differentiate the analytical techniques used in pharmaceuticals about Indian Pharmacopoeia and other reference books.
BP 108P	Pharmaceutical Analysis-I (Practical)	**Upon the completion of the course, the student shall be able to** 1. Able to apply volumetric and electrochemical analytical techniques for analysis of chemical compounds. 2. Able to identify and locate the impurities through a different technique like a limit test. 3. The students will be able to apply the use of different reference books for different fundamental techniques of analysis 4. By taking regular viva-voce we can analyze the achievements of practical knowledge. 5. Expected to appraise the general characteristics of the analytical method in drug analysis.
Course Code	Name of the Course	Course Outcomes
BP 103T	Pharmaceutics-I (Theory)	**Upon the completion of the course, the student shall be able to** 1. Recall the history of the profession of pharmacy in India & details of various pharmacopeias; IP, BP, USP, etc 2. The course will impart basic knowledge in the area of pharmaceutics, prescription components & posology also covered. 3. The course will give the basic knowledge of dose calculations according to age, sex & body weight. 4. Provide knowledge of different routes of drug administration & classification of pharmaceutical dosage forms. 5. Describe the various dosage forms such as monophasic, biphasic, powder, suppositories & their evaluations.
BP 109P	Pharmaceutics-I (Practical)	**Upon the completion of the course, the student shall be able to** 1. Practical exercises are designed to make the student relate the theoretical aspects to practical application and acquire laboratory skills.

		2. The students should be able to classify different dosage forms and apply principles of pharmaceutical science in the formulation and dispensing of the various dosage forms. 3. They should be able to know how to apply pharmacopoeial standards for the preparation of various dosage forms 4. Describe the use of ingredients in the formulation and category of the formulation. 5. Use equipment and apparatus needed for the preparation as per SOP.
Course Code	Name of the Course	Course Outcomes
BP 104T	Pharmaceutical Inorganic Chemistry (Theory)	**Upon the completion of the course, the student shall be able to** 1. Knowledge about the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals. 2. Able to know the therapeutic applications of different classes of inorganic pharmaceuticals and their analysis. 3. Able to calculate the various Pharmaceuticals calculations through regular practice. 4. Appreciate the importance of inorganic pharmaceuticals in preventing and curing the disease. 5. Able to communicate the therapeutic, diagnostic, and research values of radiopharmaceuticals.
BP 110P	Pharmaceutical Inorganic Chemistry (Practical)	**Upon the completion of the course, the student shall be able to** 1. Understand practically how can detect and control pharmaceutical impurities. 2. Able to prepare and identify the inorganic pharmaceuticals by adopting proper skills. 3. Able to assemble the apparatus and equipment necessary for the practical by proper communication. 4. Use safety procedures for the handling of hazardous chemicals by using protective tools concerning human health and the environment. 5. Able to communicate by expressing theoretical and practical knowledge through

		viva-voce.
Course Code	Name of the Course	Course Outcomes
BP 105T	Communication Skills (Theory)*	**Upon the completion of the course, student shall be able to** 1. Explain the communication process in detail. 2. Describe different elements of communication. 3. Explain listening skills in pharmacy practice. 4. What are the methods that improved the leadership qualities in the group discussion process? 5. Explain the communication skills that are usually assessed in group discussions.
BP 111P	Communication Skills (Practical)*	**Upon the completion of the course, the student shall be able to** 1. How to improve communication skills 2. To study and learn basics of communication skills 3. Pronunciation 4. Presentation skills 5. E-Mail Etiquette
Course Code	Name of the Course	Course Outcomes
BP 106 RBT	Remedial Biology (Theory)*	**Upon the completion of the course, the student shall be able to** 1. Understand cell biology (basic nature of plant cell and animal cell) 2. Learn about the classification system of both plants and animals. 3. Understood various tissue systems and organ systems in plants and animals. 4. Understand the theory of evolution. 5. Students learned the anatomy and physiology of plants and animals.
BP 112 RBP	Remedial Biology (Practical)*	**Upon the completion of the course, the student shall be able to**

		1. Students were able to understand the components of the living world, structure, and functional system of the plant and animal kingdom. 2. Students were able to learn the classification and salient features of the five-kingdom of life. 3. Students understand the basic components of the anatomy and physiology of the human body. 4. Students were very well able to handle microscopes and identify human blood components and various tissue systems. 5. Students learned the skeletal system of the human body.
Course Code	Name of the Course	Course Outcomes
BP 106 RMT	Remedial Mathematics (Theory)*	**Upon the completion of the course, the student shall be able to** 1. Students were able to apply mathematics concepts and principles to perform computations for pharmaceutical sciences. 2. Students were able to create use and analyze the mathematical representation 3. Students were able to create use and analyze mathematical relationships. 4. Students learned to communicate mathematical knowledge and understanding to help in the field of clinical pharmacy. 5. Students learned to perform abstract mathematical reasoning.
SEMESTER II		
Course Code	Name of the Course	Course Outcomes
BP 201T	Human Anatomy and Physiology-II (Theory)	Course Outcomes **Upon the completion of the course student shall be able to** 1. Discuss the gross morphology, structure, and functions of various organs of the human body. 2. Discuss the diverse homeostatic mechanisms and their imbalances. 3. Explain the various tissues and organs of different systems of the human body. 4. Discuss the synchronized functioning pattern of dissimilar organs of each system. 5. Discuss the interconnected mechanisms in the maintenance of normal functioning

		of the human body.
BP 207 P	Human Anatomy and Physiology-II (Practical)	**Upon the completion of the course, the student shall be able to** 1. Perform the hematological tests like blood cell counts, hemoglobin estimation, bleeding/clotting time, etc. 2. Perform the cardiovascular parameters like blood pressure, heart rate, and pulse rate. 3. Identify the different tissues and organs of dissimilar systems of the human body. 4. Explain the importance of various family planning devices for the human body. 5. Discuss the gross morphology, structure, and functions of various organs of the human body.
Course Code	Name of the Course	Course Outcomes
BP 202 T	Pharmaceutical Organic Chemistry-I (Theory)	**Upon the completion of the course, the student shall be able to** 1. IUPAC/Common system of nomenclature of simple organic compounds belonging to different classes of an organic compound. 2. Understand some important physical properties of organic compounds. 3. Know free radical, nucleophilic(alkyl, acyl, aryl), electrophilic substitution, oxidation and reduction reaction with mechanism, the orientation of the reaction. 4. Know the order of reactivity, stability of compounds. **5.** Understand some named organic reactions with the mechanism.
BP 208 P	Pharmaceutical Organic Chemistry-I (Practical)	**Upon the completion of the course, the student shall be able to** 1. Predict atomic structure, chemical bonding, and molecular geometry based on the accepted model. 2. Able to identify and characterize the organic compound by various qualitative tests. 3. Follow the safety procedure to set up glassware and apparatus to conduct experiments in organic chemistry. 4. Adopt proper skills to present the results of a practical investigation concisely by referring to the available resources. **5.** Able to communicate the hazardous effect of overuse of organic products in daily life.

Course Code	Name of the Course	Course Outcomes
BP 203 T	Biochemistry (Theory)	**Upon the completion of the course, the student shall be able to** 1. Students learned about chemistry and the biological importance of biological macromolecule 2. Understand fundamental principles of biochemistry, including major pathways of metabolism, biosynthesis, replication transcription, and translation. 3. Explain qualitative and quantitative understanding of biomolecule structure, the enzyme catalyzes a chemical reaction that transforms biomolecule. 4. Explain different types of macromolecule their structure and functions 5. Explain the metabolism of carbohydrate, lipid, amino acid and their role in our body
BP 209 P	Biochemistry (Practical)	**Upon the completion of the course, the student shall be able to** 1. Understand the qualitative test for protein 2. Understand the determination of glucose, total cholesterol, and creatinine in the blood 3. Determine the salivary amylase activity and effect of temperature on it. 4. Quantitative analysis of reducing sugar and protein 5. Understand the effects of substrate concentration on salivary amylase activity.
Course Code	Name of the Course	Course Outcomes
BP 204 T	Pathophysiology (Theory)	**Upon the completion of the course, the student shall be able to** 1. Find the etiology of a known and unknown disease or disorder. 2. Explain the importance of signs and symptoms of a particular disease or disorder of a human being. 3. Find the pathogenesis which is responsible for causing a particular disease or disorder in a human being. 4. Find the complications that arise during the disease or disorder of human beings. 5. Explain the pathophysiology of various diseases or disorders in human beings.
Course Code	Name of the Course	Course Outcomes

BP 205 T	Computer Applications in Pharmacy (Theory)*	**Upon the completion of the course, the student shall be able to** 1. Know the various types of applications of computers in pharmacy. 2. Know the various types of databases. 3. Know the various applications of databases in pharmacy 4. Know the web-based tools for pharmacy practice 5. Apply the knowledge to design and develop digital tools for pharmaceutical applications.
BP 210 P	Computer Applications in Pharmacy (Practical)*	**Upon the completion of the course, the student shall be able to** 1. Understand different types of software for structural drawings and prepare tables and charts for presentations of chemical and biological data. 2. Apply their knowledge by the access of various search engines, scientific journals, and databases, & various pharmaceutical websites for scientific information. 3. Understand the use of Computers in pharmacy for the information of drug data, records, and files, drug management. 4. Know the role of computer in Receiving the details, storing it and processing it and its dissemination and this continuous flow of information shows effective functioning of any system. 5. Know the use of computers for patient profile monitoring, medication, database management, and material management.
Course Code	Name of the Course	Course Outcomes
BP 206 T	Environmental Science (Theory) *	**Upon the completion of the course, the student shall be able to** 1. Develop an attitude about concern for the environment 2. Impart basic knowledge about the environment and its allied problem 3. Motivate learner to participate in environmental protection and environmental improvement 4. Know about Natural sources and its Conservation 5. Environmental pollution and its impact on the environment and Human

COURSE OUTCOMES S. Y. B. PHARM (SEMESTER III & IV CBCS)		
SEMESTER III		
Course Code	Name of the Course	Course Outcomes
BP 301 T	Pharmaceutical Organic Chemistry-II (Theory)	1. Develop a basic knowledge of various aromatic compounds their nomenclature, synthesis and properties, methods of preparation, electrophilic and nucleophilic reactions which helps them in acquiring further knowledge in medicinal chemistry. 2. Explain the general principles and mechanisms involved in organic reactions and discuss the reactivity, orientation, and stability of organic reactions. 3. Describe the chemistry of fats and oils. 4. Understand the nomenclature, synthesis stereochemistry of polynuclear aromatic hydrocarbon and their importance in medicinal chemistry. 5. Structure and uses of an important organic compound.
BP 305 P	Pharmaceutical Organic Chemistry-II (Practical)	**Upon the completion of the course, the student shall be able to** 1. Students should be able to evaluate the quality of fats and oils by determining acid value, saponification value, and iodine value as per pharmacopeia. 2. Students should be able to synthesize the various organic compounds and understands the reaction mechanism involved in the synthesis. 3. Calculate the percentage yields of the products obtained by synthesis. 4. Purify organic compounds using various procedures like recrystallization and steam distillation. 5. Apply recrystallization and steam distillation methods for the purification of synthesized organic compounds.
Course Code	Name of the Course	Course Outcomes
BP 302 T	Physical Pharmaceutics- I (Theory)	**Upon completion of the course, the student will be able to** 1. Understand various physicochemical properties of drug molecules in designing, developing, and evaluating various dosage forms. 2. Explain the chemical and physical phenomena that govern the in vivo and in vitro

		actions of pharmaceutical products. Demonstrate the skills and understanding of the principles, concepts of surface and interfacial tension, and its measurement. 3. Acquire an understanding of drug complexes, protein binding, and their applications and explain the methods of detection of complexes. 4. Illustrate the knowledge of Solubility and Distribution Phenomena and apply them in pharmaceutical practices. Describe Physical principles of states of matter and phase rule. Compare and contrast between one, two & three-component system 5. The leaner should be able to describe Fick's laws of diffusion, mechanism of drug dissolution, and absorption.
BP 306 P	Physical Pharmaceutics- I (Practical)	**Upon completion of the course, the student will be able to** 1. Operate different pharmaceutical laboratory instruments used in determining various physical properties such as surface tension, viscosity, adsorption, and solubility. 2. Calculate critical solution temperature & effect of the addition of electrolyte on CST of the phenol water system. 3. Demonstrate the partition Coefficient and distribution phenomena between immiscible liquid phases. 4. The leaner should be able to calculate physical parameters such as stability constant, and critical micellar concentration. 5. Demonstrate miscible, partially miscible liquid and all practical aspects regarding the solubility of liquid.
Course Code	Name of the Course	Course Outcomes
BP 303 T	Pharmaceutical Microbiology (Theory)	**Upon completion of the course, the student will be able to** 1. Understand the importance and implementation of sterilization & disinfectant in the pharmaceutical industry. 2. Know the general bacteriology and Understand methods of identification, isolation, cultivation, and preservation of bacteria & viruses. 3. Understand the designing of the aseptic area and various methods of the microbiological assay. 4. Know about microbial spoilage and how to preserve the pharmaceutical product

		from microbial spoilage. 5. Understand the cell culture technology and its application in the pharmaceutical industry
BP 307 P	Pharmaceutical Microbiology (Practical)	**Upon completion of the course, the student will be able to** 1. Perform staining of bacteria and identification. 2. Perform Subculturing of bacteria. 3. Isolate pure cultures of bacteria by various techniques. 4. Perform the microbial assay of antibiotics by various methods. 5. Perform the sterility testing of pharmaceuticals.
Course Code	Name of the Course	Course Outcomes
BP 304 T	Pharmaceutical Engineering (Theory)	**Upon completion of the course, the student will be able to** 1. Know various unit operations used in Pharmaceutical industries 2. Understand the material handling techniques 3. Perform various processes involved in the pharmaceutical manufacturing process. 4. Calculate sedimentation volume of suspension. 5. Appreciate the various preventive methods used for corrosion control in Pharmaceutical industries
BP 308 P	Pharmaceutical Engineering (Practical)	**Upon completion of the course, the student will be able to** 1. Determine the radiation constant of brass, iron, unpainted, and painted glass calculate the efficiency of steam distillation. 2. Determine the overall heat transfer coefficient by the heat exchanger 3. Construct the drying curves and determine the moisture content and loss on drying. 4. Describe the Construction working and application of Pharmaceutical Machinery such as rotary tablet machine, fluidized bed coater, fluid energy mill, and dehumidifier. 5. Determine Factors affecting the rate of filtration, evaporation and Study the effect of time on the Rate of Crystallization.
SEMESTER IV		

Course Code	Name of the Course	Course Outcomes
BP 401 T	Pharmaceutical Organic Chemistry-III (Theory)	**Upon completion of the course, the student will be able to** 1. Understand stereoisomerism and racemic modification. Know about conformational isomerism. 2. Know the structure with the numbering of the heterocyclic compound, chemistry, method of preparation, and chemical reaction of five, six-member, and fused heterocyclic ringed. 3. Know schemes of synthesis and reaction of drugs containing heterocyclic rings. 4. Know what are polycyclic compounds and reactions and the method of synthesis. 5. Understand reactions of synthesis importance.
Course Code	Name of the Course	Course Outcomes
BP 402 T	Medicinal Chemistry- I (Theory)	**Upon completion of the course, the student will be able to** 1. This subject helps in correlating the pharmacology of a disease and its mitigation or cure. 2. Able to explain the influence of physicochemical properties on drug action and correlate the pharmacodynamics and pharmacokinetic aspects of biologically active molecules. 3. Understand the classification, mode of action, structure-activity relationship, and use of different drugs acting on the autonomic nervous system (ANS). This helps them in understanding the pharmacology of the drugs. 4. Able to explain reaction mechanisms involved in the synthesis of medicinally important compounds. 5. Acquire knowledge about the relationship between the biological activity and structure of therapeutic agents including sedative-hypnotics, anticonvulsants, tranquilizers, antidepressants, and CNS stimulants.
BP 406 P	Medicinal Chemistry- I (Practical)	**Upon completion of the course, the student will be able to** 1. Make correct use of various equipment and take safety measures while working in Medicinal Chemistry Laboratory. 2. Demonstrate the understanding of general aspects of the design of the drugs by drawing the chemical structure of drugs.

		3. Characterize the synthetic compounds using melting point and Boiling point. 4. Perform the pharmacopeia assay of drugs containing dosage forms and study the interpretation of UV spectra of unknown drugs. 5. Able to Synthesize, recrystallize and understand reaction mechanisms involved in the synthesis of medicinally important organic compounds.
Course Code	Name of the Course	Course Outcomes
BP 403 T	Physical Pharmaceutics- II (Theory)	**Upon completion of the course, the student will be able to** 1. Describe the reaction kinetics, rate, order, and factors affecting the rate of reaction; prevent degradation, stabilization of drugs, and shelf-life assessment and explain the reaction kinetics of dosage forms. 2. Explain the types, properties, Principles, and applications of dispersion systems in the formulations. & Explain the concept of formulation and stabilization of suspension and emulsions. 3. Explain the properties of particles and pharmaceutical powders, their significance in formulating pharmaceutical products, and the common methods for characterizing these properties. 4. Illustrate fundamentals and pharmaceutical applications of rheology and their measurement to identify and choose suitable flow characteristics for the formulation & describe the thixotropic/stability of dispersions, semisolids systems, and deformation of solids. 5. Explain the concept of formulation and stabilization of suspension and emulsions.
BP 407 P	Physical Pharmaceutics- I (Practical)	**Upon completion of the course, the student will be able to** 1. Demonstrate microscopic and micromeritics characteristics of the dosage form. 2. The leaner should be able to determine reaction rate constant, an order of reaction for a different reaction. 3. The leaner should be able to predict shelf life by carrying out accelerated stability studies. 4. Calculate sedimentation volume of suspension. 5. The leaner should be able to calculate physical parameters Such as the molecular weight of the polymer.

Course Code	Name of the Course	Course Outcomes
BP 404 T	Pharmacology- I (Theory)	**Upon completion of the course, the student will be able to** 1. Explain the general principals of pharmacology 2. Describe the pharmacokinetic, pharmacodynamic, adverse drug reactions and drug interactions 3. Explain drug discovery and clinical evaluation of new drugs 4. Explain the drugs acting on the peripheral nervous system 5. Describe the drugs acting on the central nervous system
BP 408 P	Pharmacology- I (Practical)	**Upon completion of the course, the student will be able to** 1. Explain the commonly used instruments, laboratory animals used in experimental pharmacology 2. Describe the maintenance of laboratory animals as per CPCSEA guidelines 3. Explain the common laboratory techniques, blood withdrawal, serum and plasma separation, anesthetics, and euthanasia used for animal studies 4. Understand the administration of the drug in mice/rats 5. Explain the effect of the drug on the animal by simulated experiment.
Course Code	Name of the Course	Course Outcomes
BP 405 T	Pharmacognosy & Phytochemistry- I (Theory)	**Upon completion of the course, the student will be able to** 1. Describe the scope and progress of Pharmacognosy in the field of Pharmacy. 2. Explain the quality of natural origin crude drugs with various evaluation parameters. 3. Describe the role of herbal drugs in various traditional systems of medicine along with their cultivation, collection, and processing of natural origin drugs. 4. Role and application of Plant Tissue Culture techniques to understand the conservation of endangered species, improvement of the crop, and enhancement of secondary metabolites. 5. Elaborate on the primary and secondary metabolites in plants along with a description of each category.

BP 409 P	Pharmacognosy & Phytochemistry- I (Practical)	**Upon completion of the course, the student will be able to** 1. To understand analysis of crude drug by chemical test. 2. Demonstrate microscopic and micromeritics characteristics of the leaf. 3. Determination of the size of starch grains, calcium oxalate crystals, length, and width by eyepiece micrometer. 4. Determination of ash value, extractive values of crude moisture content, swelling index, and foaming index of the crude drug. 5. Determination of several starch grains by Lycopodium spore method.

COURSE OUTCOMES T. Y. B. PHARM (SEMESTER V & VI CBCS)

SEMESTER V

Course Code	Name of the Course	Course Outcomes
BP 501 T	Medicinal Chemistry- II (Theory)	**Upon completion of the course, the student will be able to** 1. Understand detailed aspects of the design & development of drugs including classification, nomenclature, structure-activity relationship (SAR), mechanism of action, adverse effects, therapeutic uses of various categories such as Antihistaminic agents, Anticancer drugs, Drugs acting on CVS, Antidiabetic Agents. 2. Classify local anesthetics & Explain SAR, Mechanism of action, adverse effects, and therapeutic uses of local anesthetic. 3. To write the chemical synthesis of some drugs. 4. To understand the chemistry of drugs concerning their pharmacological activity. 5. Discuss the Classification, nomenclature, Stereochemistry, SAR, and Mechanism of action and metabolism of drugs acting on the Endocrine system.
Course Code	Name of the Course	Course Outcomes
BP 502 T	Industrial Pharmacy- I (Theory)	On completion of the course, students were able to: 1. Revise and apply the basic knowledge of preformulation parameters for the development of new formulations.

		2. Understood the considerations in the development of various pharmaceutical dosage forms and cosmetics with their manufacturing techniques. 3. Describe new concepts in pharmaceutical packaging and their control. 4. Describe containers, valves, and propellants for different types of aerosol systems. 5. Understand the concepts of Pelletization techniques & formulation strategies.
BP 506 P	Industrial Pharmacy- I (Practical)	1. Practical exercises are designed to make the student relate the need for pre-formulation studies. 2. Practical exercises are designed to make the student relate the correct use of various equipment in the Pharmaceutics laboratory relevant to tablets, capsules & coating. 3. To understand the Rationale behind the evaluation of packaging material. 4. To understand the rationale behind the use of formulation ingredients. 5. To understand the filling & sealing of ampoules & vials.
Course Code	Name of the Course	Course Outcomes
BP 503 T	Pharmacology- II (Theory)	**Upon completion of the course, the student will be able to** 1. Explain the drugs acting on the cardiovascular system 2. Describe the drugs acting on the cardiovascular system 3. Understand the drugs acting on the urinary system 4. Explain the autocoids and drugs acting on the endocrine system 5. Describe the principles, applications, and types of bioassay
BP 507 P	Pharmacology- II (Practical)	**Upon completion of the course, the student will be able to** 1. Explain the in-vitro pharmacology and physiological salt solutions 2. Explain the basic principles of bioassay, bioassay of various drugs 3. Describe the effect of drugs on various isolated animal preparations 4. Understand the preclinical screening of various drugs 5. Explain the effect of the drug on the animal by simulated experiment
Course Code	Name of the Course	Course Outcomes
BP 504 T	Pharmacognosy & Phytochemistry- II (Theory)	**Upon completion of the course, the student will be able to** 1. Demonstrate the biosynthetic study, the basic metabolic pathway of natural compounds, and the formation of different secondary metabolites through these pathways. 2. Examine the separation of a vital active constituent by various chromatographic

		techniques in herbal drugs. 3. Understand the role of radioactive isotopes in biogenetic studies. 4. Describe the source, chemistry, and commercial application of secondary metabolites. 5. Provide an overview of extraction techniques, fractionation, separation, isolation, and characterization of natural products.
BP 508 P	Pharmacognosy & Phytochemistry- II (Practical)	**Upon completion of the course, the student will be able to** 1. Identify the crude drug's morphological and microscopical characteristics. 2. Isolate and analyze the phytoconstituents from crude drugs. 3. Identify the crude drug by various chemical tests by observation. 4. Apply the theoretical knowledge of Thin Layer Chromatography and Paper Chromatography to perform the practicals. 5. Isolate and analyze the volatile oil.
Course Code	Name of the Course	Course Outcomes
BP 505 T	Pharmaceutical Jurisprudance	**Upon completion of the course, the student will be able to** 1. The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals. 2. Explain the drugs and cosmetics rules and import, manufacture of drugs. 3. Understand the code of ethics during the pharmaceutical practice. 4. Understand the basics of various Indian pharmaceutical Acts and Laws. 5. Explain the National pharmaceutical pricing authority, prevention of cruelty to animals.
SEMESTER VI		
Course Code	Name of the Course	Course Outcomes
BP 601 T	Medicinal Chemistry- III (Theory)	**Upon completion of the course, the student will be able to** 1. Understand detailed aspects of the design & development of drugs including history, classification, nomenclature, structure-activity relationship (SAR),

		mechanism of action, adverse effects, therapeutic uses, degradation pathways of Antibiotics such as penicillin, cephalosporins, tetracyclines, macrolides, aminoglycosides, Chloramphenicol. 2. Explain reaction mechanisms involved in the synthesis of medicinally important compounds. 3. Discuss the Classification, SAR, Mechanism of action, adverse effects, Therapeutic uses and metabolism of anti-tubercular agents, Anti-viral agents, Anti-fungal drugs, Drugs acting on UTI, Sulphonamides & sulphones. 4. Know the general aspects of drug design and development, various aspects of CADD and QSAR parameters. 5. Understand and Explain various techniques of combinatorial chemistry and understand applications of combinatorial, antimalarials,
BP 607 P	Medicinal Chemistry- III (Practical)	**Upon completion of the course, the student will be able to** 1. Understand how to make correct use of various equipment & take safety measures while working in a medicinal chemistry laboratory. 2. Synthesize, recrystallize and understand reaction mechanisms involved in the synthesis of medicinally important compounds and perform the Assay of drugs. 3. To study the interpretation of UV spectra of unknown drugs. 4. Comprehend the techniques of microwave-assisted synthesis and explain applications of microwave-assisted synthesis in pharmaceutical research. 5. Able to draw structures and reactions using Chem draw.
Course Code	Name of the Course	Course Outcomes
BP 602 T	Pharmacology- III (Theory)	**Upon completion of the course, the student will be able to** 1. Understand the mechanism of drug action and its relevance in the treatment of various infectious diseases. 2. Explain the principles of toxicology and treatment of various poisonings and appreciate the correlation of pharmacology with related medical sciences. 3. Explain the mechanism of various therapeutic drugs used for the treatment of several disorders or diseases in human beings.

		4. Achieve the greater therapeutic outcomes of various anti-biotic used against the infection of bacteria or viruses in human beings. 5. Understand the importance of time, dose, duration, and day of administration of several therapeutic drugs to improve the efficacy for better compliance of a patient.
BP 608 P	Pharmacology- III (Practical)	**Upon completion of the course, the student will be able to** 1. Calculate the dose of different drugs in different pharmacological experiments. 2. Calculate the lethal dose of different drugs from any given data. 3. Know the irritation-producing substances to the human body. 4. Calculate the pharmacokinetic parameters from any different category of drug. 5. Know the biostatistics method for research methodology.
Course Code	Name of the Course	Course Outcomes
BP 603 T	Herbal Drug Technology (Theory)	**Upon completion of the course, the student will be able to** 1. Know the WHO & ICH guidelines for the evaluation of herbal drugs. Understand the Nutraceuticals and Herb-Food & Herb-Drug Interactions. 2. Know the natural excipients, conventional herbal formulations, and Novel dosage forms like phytosomes. 3. Understand the different methods of agriculture & Indian systems of medicine. 4. Understand the general concept of the Herbal drug industry and Good Manufacturing Practice of the Indian system of medicine. 5. Know the patenting and regulatory requirements of natural products, Good manufacturing practices of Indian system of medicine.
BP 609 P	Herbal Drug Technology (Practical)	**Upon completion of the course, the student will be able to** 1. Perform the preliminary phytochemical screening of crude drugs. 2. Determine the alcohol content, phenol content, total alkaloids, and the alcohol content of Asava & Arishta. 3. Evaluate the excipients of natural origins. 4. Prepare the herbal formulations like Syrup, Mixtures, Shampoo’s, etc

		5. Analyze the herbal drugs from the Monographs.
Course Code	Name of the Course	Course Outcomes
BP 604 T	Biopharmaceutics and Pharmacokinetics (Theory)	**Upon completion of the course, the student will be able to** 1. Explain the concept of biopharmaceutics and pharmacokinetics its applications in formulation development. 2. Able to understand the pharmacokinetic processes and their relevance to the inefficacy of dosage form. 3. Ability to design and perform *in-vitro* dissolution studies for various drugs as per the standards of official monographs. 4. Able to understand compartmental models and non-compartmental analysis methods. 5. Explain the concept and mechanisms of dissolution and in vitro in vivo correlation.
BP 605 T	Pharmaceutical Biotechnology (Theory)	**Upon completion of the course, the student will be able to** 1. Understand current applications of biotechnology and advances in the different areas like medical, microbial, environmental, bioremediation, rDNA technology, agricultural, plant, animal, and forensic. 2. Understand the concept of enzymes and their uses by immobilization 3. Describe in detail about fermentor, Production of certain products by a fermentation process 4. Understand the mechanism of immunity and various antigen-antibody reaction with their application. 5. Describe genetic recombination, mutation, and its types in bacteria.
BP 606 T	Quality Assurance (Theory)	**Upon completion of the course, the student will be able to** 1. Explain various aspects of quality assurance like Good manufacturing practices (GMP), Good laboratory practices (GLP), and validation methods 2. Give knowledge about facilities in quality control laboratory and quality control documentation 3. Explain standard operating procedures (SOPs) for different operations like

		cleaning, filling, drying, compression, coating, sterilization, etc 4. Describe patent system in India including procedure, filling, search, and licensing of patents 5. Give knowledge of pharmaceutical product registration and the effect of GATT and WTO on pharmaceuticals.

COURSE OUTCOMES F. Y. B. PHARM (SEMESTER VII & VIII CBS)

SEMESTER VII		
Course Code	Name of the Course	Course Outcomes
BP701	DFT-I (Theory)	**Upon completion of the course, the student will be able to** 1. Understand the fundamental concept of preformulation and prerequisite of new drug substance like solubility, partition coefficient, stability, and preliminary screening of new drug candidate. 2. Explain tablets as a solid dosage form, various tablet additives, manufacture & evaluation, equipment, defects in tableting & its remedies. 3. Describe production and manufacturing of capsules, use of additives, manufacturing & evaluation, equipment, & defects. 4. Explain the concept of suppository bases and its selection criteria for preparation and evaluation of semisolid dosage forms like ointment, suppository. 5. Understand the concept of cosmetics, anatomy of skin and hair, explain the formulation of cosmetics for skin and hair preparation its evaluation.
BP707	DFT-I (Practical)	**Upon completion of the course, the student will be able to** 1. State correct use of various equipment in pharmaceutics laboratory and machine room relevant to practice. 2. Evaluation of marketed preparation of tablets like Paracetamol. 3. Preparation, evaluation, and labelling of suppository and ointment. 4. Perform formulation, evaluation, and labelling of cosmetics like cream, shampoo, dentifrices, and powder. 5. Describe different excipient used in the formulation of solid dosage form like a tablet, capsule, etc.

Course Code	Name of the Course	Course Outcomes
BP702	Medicinal Chemistry-II (Theory)	**Upon completion of the course, the student will be able to** 1. Understand the chemotherapy for cancer and microbial diseases and give knowledge about cardiovascular agents this will help in further research. 2. The mode of action, structural correlation, and use of different classes of drugs along with metabolic pathways, and their inhibition are taught to the students. 3. The students will gain expertise by the use of various software employed in medicinal Chemistry for drawing the structures of the drug. 4. Understand the various approaches to drug design and QSAR, Which helps in designing the scheme of synthesis in future research. 5. Use modern library searching and online resources to obtain information about a topic, the latest procedure for Synthesis, or an issue relating to chemistry.
BP 708	Medicinal chemistry II (Practical)	**Upon completion of the course, the student will be able to** 1. Able to learn the basic laboratory skills necessary for research in medicinal chemistry 2. Set up a safe experimental procedure to avoid a risk of an accident and keep concerned about human health and the environment. 3. Understand the proper procedures for the safe use of chemicals and can follow the proper procedures for chemical waste disposal and synthesize chemical compounds and intermediates. 4. Use Analytical instruments to calculate the drug content in dosage form and explore new areas of research 5. Adopt proper communication skills by expressing theoretical and practical knowledge through viva-voce.
Course Code	Name of the Course	
BP 703	Pharmaceutical Analysis – IV(Theory)	**Upon completion of the course, the student will be able to** 1. To know the basic principle instrumentation of X-Ray diffraction 2. To know the basic principle instrumentation working & application of mass spectroscopy and NMR spectroscopy 3. To understand the basic principal instruction application of Radioimmunoassay;

		photocolorimetry Electrophoresis. 4. Understood principal instruction application of the various miscellaneous method of analysis 5. Understood the basic Analytical instrument & motored as per various guidelines
BP 709	Pharmaceutical Analysis – IV (Practical)	**Upon completion of the course, the student will be able to** 1. Recall the importance of analysis in the pharmaceutical industry 2. Discover the various techniques for evaluation of pharmaceuticals 3. Explain the stability expectations of pharmaceuticals 4. Choose the official and non-officials methods to analyze the related substance 5. To interpret the various functional group by spectroscopy
Course Code	Name of the Course	Course Outcomes
BP704	Clinical Pharmacotherapeutics-I (Theory)	**Upon completion of the course, the student will be able to** 1. Explain the management of drug treatment in complications of several human disorders. 2. Explain the rationale therapy for the treatment of human disorders. 3. Explain the availability of different drugs for the treatment of several disorders for better therapeutic outcomes. 4. Explain how to prevent the occurrence of several disorders in human beings. 5. Explain the non-pharmacological treatment for better therapeutic outcomes of several disorders in human beings.
BP 7010	Clinical Pharmacotherapeutics-I (Practical)	**Upon completion of the course, the student will be able to** 1. Explain the dose-response relationship of different drugs concerning the biological activity of human beings. 2. Explain the therapeutic efficacy of different drugs that act on the nervous system 3. Find the errors that occur in prescription concerning therapeutic effects and adverse effects of prescribed drugs by a physician. 4. Explain the importance of the dose of the drug for administration to laboratory animals. 5. Find the accuracy of therapeutic drugs with the help of a computer

Course Code	Name of the Course	Course Outcomes
BP705	Pharmacognosy-V (Theory)	**Upon completion of the course, the student will be able to** 1. To gain knowledge about Alkaloidal and flavonoids' natural occurring plant sources along with their beneficial uses to mankind. 2. To extract, isolate and estimate various secondary metabolites from natural sources. 3. Possess knowledge of traditional herbal drugs along with their role in the human healthcare system. 4. Be able to address potential safety concerns including herb-drug interactions. 5. Understand the need for standardization of natural herbal drugs for the quality standards of herbal formulations.
BP7011	Pharmacognosy-V (Practical)	**Upon completion of the course, the student will be able to** 1. To gain detailed Pharmacognostical knowledge of crude drug as per Pharmacognosy scheme including morphological, microscopical, and chemical evidence. 2. To apply the knowledge of extraction and isolation on various natural phytoconstituents by different chromatographic techniques. 3. Understand the role of physical evaluation parameters on natural crude drugs. 4. Understand the chemical evaluation of natural crude drugs. 5. To understand the role of natural herbs as traditional medicine.
Course Code	Name of the Course	Course Outcomes
BP706	Industrial Pharmacy	**Upon completion of the course, the student will be able to** 1. Understand the concept of a Pilot plant scale-up study. 2. Understood the considerations in the development of various pharmaceutical dosage forms and their manufacturing techniques. 3. Describe new concepts in pharmaceutical packaging and their control. 4. Learn about different types of optimization techniques. And also understood GMP and ICH guidelines. 5. Understand the concepts of Pelletization techniques & formulation strategies.

SEMESTER VIII		
Course Code	Name of the Course	Course Outcomes
BP801	DFT-II (Theory)	**Upon completion of the course, the student will be able to** 1. Describe the Fundamental Concept of Oral Controlled Drug Release along with various approaches and classification, fabrication of various Oral Controlled drug delivery system 2. Understand the concept of microencapsulation, application, techniques of encapsulation preparation, and its evaluation. 3. Explain the Parenteral controlled drug delivery system 4. Understand the applications of polymer in controlled drug delivery systems. 5. Describe the Fundamental Concept of Oral Controlled Drug Release along with various approaches and classification, fabrication of various Oral Controlled drug delivery system
BP807	DFT-II (Practical)	**Upon completion of the course, the student will be able to** 1. Perform preparation and evaluation of sustained released matrix tablet. 2. Expertise in the sealing of ampoules (pulls sealing and tip sealing). 3. Perform formulation and evaluation of microspheres. 4. Perform preparation and evaluation of SVP and LVP like ascorbic acid injection, 0.9 % sodium chloride infusion. 5. Perform preparation and evaluation of ophthalmic preparation like eye drops.
Course Code	Name of the Course	Course Outcomes
BP 802	Medicinal Chemistry-III (Theory)	**Upon completion of the course, the student will be able to** 1. Relate the structure and physical properties of drugs to their pharmacological activity. 2. Understand the chemical basis for the synthesis, and mechanism of action of drugs, and selective metabolic inhibition. 3. Understand the applications of various therapeutic agents in concern to health care of the society 4. Describe the synthesis of important target compounds 5. Use modern tools and online resources for the understanding of the medicinal

		concept of the drug
BP 808	Medicinal Chemistry-III (Practical)	**Upon completion of the course, the student will be able to** 1. Demonstrate the effect of the different synthetic methodology and clarify theoretical concepts of chemical synthesis of drug molecules. 2. Working in the laboratory will give the students experience in handling and proper usage of laboratory glassware, equipment, and chemicals 3. Students can learn how to keep an accurate and readable record of all experimental work. 4. Perform pharmaceutical assay of various dosage form by applying the various Analytical techniques and Instruments 5. Adopt proper communication skills by expressing theoretical and practical knowledge through viva-voce.
Course Code	Name of the Course	Course Outcomes
BP803	Pharmaceutical Analysis – V(Theory)	**Upon completion of the course, the student will be able to** 1. To understand the basic technique of chromatography 2. Understand the chromatographic separation like adsorption, partition, Column, TLC, and electrophoreses in the analysis of drug 3. Understand the chromatographic separation like GC, HPLC, Ion Exchange, Gel chromatography in the analysis of drug 4. Understand the chromatographic separation like paper, thin layer, Column and demonstration of GC and HPLC instrumentation 5. Understand the biochemical analysis of various biological separation
BP809	Pharmaceutical Analysis – V (Practical)	**Upon completion of the course, the student will be able to** 1. To understand the practical technique of chromatography 2. Understand the chromatographic separation like adsorption, partition, Colum, TLC, and electrophoreses in the analysis of drug 3. Understand the chromatographic separation like GC, HPLC, Ion Exchange Gel in the analysis of drug 4. Understand the chromatographic separation like paper, thin layer, Colom and demonstration of GC and HPLC instrumentation

		5. Understand the biochemical analysis of views the biological separation
Course Code	Name of the Course	Course Outcomes
BP804	Clinical Pharmacotherapeutics-II (Theory)	**Upon completion of the course, the student will be able to** 1. Upon completion students will be able to understand the general prescribing guidelines for pediatric patients, geriatric patients, pregnant and breastfeeding women's 2. Upon completion, students will be able to understand the etiopathogenesis and pharmacotherapy of diseases associated endocrine system and infectious diseases 3. Upon completion, students will be able to understand the etiopathogenesis and pharmacotherapy of oncology 4. Upon completion, students will be able to understand gene therapy and its application's 5. Upon completion, students will be able to understand the pharmacovigilance
Course Code	Name of the Course	Course Outcomes
BP805	Industrial Pharmacognosy (Theory)	**Upon completion of the course, the student will be able to** 1. To gain knowledge of phytopharmaceutical components obtained from natural drugs. 2. Quality control and quality assurance of herbal cosmetics. 3. Quality control and quality assurance concepts are involved in the traditional system of medicine. 4. To reveal the importance of food in the promotion of mankind's health. 5. To understand the concept of chemotaxonomy and its application.
BP8010	Industrial Pharmacognosy (Practical)	**Upon completion of the course, the student will be able to** 1. Formulation, evaluation, and standardization of various traditional formulations. 2. Herbal cosmeceutical development and standardization. 3. Isolation of various phytoconstituents from a natural source. 4. Evaluation of marketed herbal formulation by standardization process. 5. Role of natural sources in the formulation of products.
Course Code	Name of the Course	Course Outcomes

BP 806	Pharmaceutical Jurisprudence (Theory)	**Upon completion of the course, the student will be able to** 1. Acquire The knowledge on schedule rules, laws, and regulations related to drug and cosmetics 2. By using different laws, different aspects of pharmacy and the pharmacy profession are introduced to the student, and this act as basic knowledge on ethics associated with the pharmacy profession 3. Understand the Indian regulatory pharmaceutical legislation for the drug and pharmaceutical industry 4. Explains other laws and act described in the drug and cosmetic act 5. This subject extends study in future learning about ethics, moral duties, DRA, entrepreneurship.
BP 811	Seminar and Project Work	**Upon completion of the course, the student will be able to** 1. Understand some basic concepts of research and its methodologies. 2. Understand some basic concepts of review. 3. Identify correct research and review topics. 4. Select and define appropriate research problems and parameters. 5. Write a research report and thesis

*** Non-University Examination (NUE)**

HI -TECH COLLEGE OF PHARMACY,

NAGPUR HIGHWAY, PADOLI PHATA, CHANDRAPUR

ACADEMIC YEAR 2019-2020

D. PHARM FIRST YEAR		
Course Code	Name of the Course	Course Outcomes
0805	Pharmaceutics -I(Theory)	1. Understand the basics of different dosage forms. 2. Understand the pharmaceutical incompatibilities and pharmaceutical calculation. 3. Understand the professional way of handling the prescription. 4. He must know to prepare various dosage forms including internal as well as external preparation. 5.Understand the various unit operations during manufacturing like size reduction, size separation, mixing, distillation, drying etc.
0805	Pharmaceutics-I (Practical)	1. To understand the material, equipment, glass apparatus handling techniques. 2. To perform various operations or processes involved in pharmaceutical manufacturing. 3. The student also gets hand-on training in the preparation of various dosage forms. 4. To develop the skills about handling the chemicals. 5. To develop the techniques of preparation of sterile dosage form.
Course Code	Name of the Course	Course Outcomes
0806	Pharmaceutical Chemistry-I (Theory)	1. Limit test for iron, chloride, sulphate and heavy metals 2. Mechanism of action of antidote in poisoning treatment. 3. Concept of acid, bases, and buffer. 4. Sources of impurities in pharmaceutical substances.

		5. Importance and uses of intra and extracellular electrolyte
0806	Pharmaceutical Chemistry-I (Practical)	1. Develop the skills about handling equipment. 2. Develop the skills about handling chemicals. 3. Identification test for various inorganic compounds. 4. Calculation about percentage purity of sample. 5. Assembling of gutzeit apparatus.
Course Code	Name of the Course	Course Outcomes
0807	Pharmacognosy(Theory)	1. The students will be able to study of Indian traditional knowledge of herbal medicines. 2. The students will be able to study preparation and sterilization methods of surgical dressings. 3. The students will be able to recognize and identify adulteration & contamination. 4. The students will be able to explain plant profile, chemical tests, pharmacological and pharmaceutical terms. 5. The students will be able to know about various extraction procedures.
0807	Pharmacognosy (Practical)	1. The students will be able to identify crude drugs by morphological and microscopical characters. 2. The students will be able to study gross anatomical studies of natural drugs. 3. The students will be able to evaluate crude drugs by chemical and physical tests. 4. The students will be able to differentiate organized and unorganized crude drugs. 5. The students will be able to study the principle & construction of simple microscope and compound microscope.
Course Code	Name of the Course	Course Outcomes
0808	Biochemistry & Clinical Pathology (Theory)	1. Students will be able to understand chemical structures, classification and metabolism of carbohydrates.

		2. Students will be able to understand chemical structures, classification and metabolism of lipids and proteins. 3. Students must learn about vitamins and coenzymes. 4. Students must learn about the water and mineral metabolism. 5. Students will also understand clinical diagnoses, study of cause, nature, development of disease.
0808	Biochemistry & Clinical Pathology (Practical)	1. Students will be able to identify various unknown samples of carbohydrates, proteins & lipids. 2. Students will able to identify various unknown samples of amino acids. 3. Students will be able to do various laboratory diagnostic characterizations of blood and urine samples. 4. Students should generate the ability to work with clinicians. 5. Students will be able to learn about microscopic examination of sputum & faeces.
Course Code	Name of the Course	Course Outcomes
0809	Human Anatomy & Physiology (Theory)	1. Concept of anatomy and physiology 2. Understand various systems of body 3. Understand CVS and working. 4. Understand CNS and working 5. Understand sensory & reproductive organs.
0809	Human Anatomy & Physiology (Practical)	1. Know working of sphygmomanometer, microscope haemoglobinometer, haemometer. 2. Understand important sterilization of finger and aseptic technique. 3. Understand formation of blood clot. 4. Understand haemoglobin estimation.

		5. Understand location and types of bone.
Course Code	Name of the Course	Course Outcomes
0810	Health Education & Community pharmacy (Theory)	1. Know concept of health 2. Know about nutrition and deficiency disease 3. Know about demography and family planning methods 4. Know first aid for serious and fatal condition 5. Know about communicable and non-communicable disease and treatment
D. PHARM SECOND YEAR		
Course Code	Name of the Course	Course Outcomes
0811	Pharmaceutics-II (Theory)	1. Students will know about the parts of prescription, handling of prescription. 2. Students will know about the dose calculation and various methods of dose calculations. 3. Students will know the various latin terms used in the prescription and incompatibilities in prescription. 4. Students will learn about various calculations involved in dispensing pharmacy. 5. Students will know about various dosage forms like monophasic dosage form- mixture, syrup, solutions, biphasic liquid dosage form- emulsion and suspension, semisolid dosage form, dental and cosmetic preparations, sterile dosage form.
0811	Pharmaceutics-II (Practical)	1. Students will know about the imperial and metric system and various calculations involved in it. 2. Students must be able to formulate mixture, syrups, emulsion, suspension, eye drop, eye lotion, ointment, cream, throat paints, mouthwash, and suppositories etc. 3. Students must learn about coding and decoding of prescription. 4. Students will be able to understand incompatibilities in prescription.

		5. Students will be able to calculate the child dose.
Course Code	Name of the Course	Course Outcomes
0812	Pharmaceutical Chemistry-II (Theory)	1. know rules for nomenclature 2. Will draw structure of drug 3. Know chemistry of antimicrobial drugs 4. Know chemistry of drugs acting on CNS and ANS 5. Know various diagnostic agents
0812	Pharmaceutical Chemistry-II(Practical)	1. Develop the skills about handling chemicals. 2. Know method of determining physical constant 3. Know element and functional group detection 4. Know identification test for drugs 5. Know the preparation method of drugs.
Course Code	Name of the Course	Course Outcomes
0813	Pharmacology & Toxicology(Theory)	1. Understand the concept and scope of Pharmacology. 2. Understand route of drug administration of drugs 3. Understand general mechanism of drug action 4. Understand drug acts on CNS. 5. Understand drugs acting on the respiratory system.
0813	Pharmacology & Toxicology(Practical)	1. Understand the general concept of animals and equipment. 2. Understand the mechanism of action of adrenaline and acetylcholine. 3. Understand the mechanism of action of calcium and potassium.

		4. Understand the effect of mydriatics and miotics on rabbit's cornea. 5. Understand the mechanism of action of sedative and hypnotics.
Course Code	Name of the Course	Course Outcomes
0814	Pharmaceutical Jurisprudence(Theory)	1. To know and understand the history of profession, scope, objective, new drug policy of pharmaceutical legislation. 2. To know the principles, significance, rules and regulation formed in the acts like pharmacy act 1948. 3. To understand the various amendments, offences and penalties made under the various act like drug and cosmetics act 1940. 4. To understand the excise duties for medicinal and toilet preparation act 1955. 5. To know the objectionable advertisement for drug and magic remedies act 1954.
Course Code	Name of the Course	Course Outcomes
0815	Drug store & Business Management(Theory)	1. Different forms of business organizations. 2. Types function and services of wholesalers and retailers. 3. Management and legal aspects of drug stores. 4. Objectives function and types of inventory control. 5. Techniques of sales promotion of business.
Course Code	Name of the Course	Course Outcomes
0816	Hospital & clinical Pharmacy (Theory)	1. The students will be able to know the function, role and objectives of hospital and clinical pharmacy. 2. The students will have knowledge of the drug distribution system, modern dispensing aspects, P.T.C., drug interaction, physiological parameter, drugs in clinical toxicity and bioavailability of drugs. 3. The students will be able to know common terminology and precautions for drugs in practice of medicine.

		4. The students will be able to understand precautions related to sterile manufacturing in hospitals. 5. The students will be able to gain a deep knowledge regarding various diseases and their management.
0816	Hospital & clinical Pharmacy (Practical)	1. The students will able to prepare transfusion fluids and 2. The students will be able to evaluate surgical dressings. 3. The students will be able to sterilize surgical instruments, glass wares and other hospital fabrics. 4. The students will be able to know handling and use of data processing equipment. 5. The students will be able to understand testing of raw material.