

Course code	Course Name	Course Outcomes
BS11	Human Anatomy and Physiology I - theory	Learner will be able To familiarize the students with structure and functions of various organs of the human body. They can able to know the various homeostatic function and their imbalance.
BS12	Human Anatomy and Physiology I - Practical	Learner will be able Practical physiology is complimentary to the theoretical discussions in physiology. Practicals allow the verification of physiological processes discussed in theory classes through eLearner will be able eriments on living tissue, intact animals or normal human beings. This is helpful for developing an insight on the subject
BS13	Pharmaceutical analysis I -Theory	Learner will be able • This course deals with the fundamentals of analytical chemistry and principles of electrochemical analysis of drugs. • Upon completion of the course student shall be able to develop analytical skills • Carry out various volumetric and electrochemical titrations • Understand the principles of volumetric and electro chemical analysis • Understand the sources of impurities and methods to determine the pharmaceutical impurities of organic compounds. • Know the various types of titration, Errors and the Optimizations of Errors. • To develop an aptitude for lifelong learning and continuous professional development • Develop an understanding for the need for pharmaceutical analysis and science giving quality life to people in society.
BS14	Pharmaceutical analysis I- Practical	
BS15	Pharmaceutics I- Theory	Learner will be able This course is designed to impart a basic knowledge on the preparatory pharmacy with arts and science of preparing the different types dosage forms. Upon completion of this course the student should be able to know the history of profession of pharmacy, evolution of pharmacy education in India. To understand the importance of prescription and Posology then Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations. Students can understand the concepts of suppositories and pharmaceutical incompatibilities & formulate and evaluate semi solid dosage forms.
BS16	Pharmaceutics I - Practical	

Course code	Course Name	Course Outcomes
BS17	Pharmaceutical inorganic chemistry -theory	Learner will be able This subject provide in depth about history of Indian pharmacopoeia, well acquainted with the principles of limit tests, familiar with different classes of inorganic pharmaceuticals and their analysis, Identification of different anions, cations and different inorganic pharmaceuticals, knowledge about the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals, understand the medicinal and pharmaceutical importance of inorganic compounds and to have been introduced to a variety of inorganic drug classes.
BS18	Pharmaceutical inorganic chemistry - Practical	
BSN11	Communication skills - theory	Learner will be able Understand the behavioral needs for a Pharmacist to function Learner will be able effectively in the areas of Pharmaceutical operation. Learner will be able To Communicate effectively (Verbal & Non verbal) Learner will be able To Effectively manage the team as a team player. Learner will be able To Develop Interview skills. Learner will be able To Develop Leadership qualities and essentials.
BSN12	Communication skills -Practical	
BSN13	Remedial biology - theory	Learner will be able Upon completion of the course, the student shall be able to know the classification and salient features of five kingdoms of life understand the basic components of anatomy & physiology of plant know understand the basic components of anatomy & physiology animal with special reference to human
BSN14	Remedial biology - Practical	
BSN15	Remedial mathematics	Learner will be able CTrigonometry, Analytical geometry, Matrices, Determinant, Learner will be able Integration, Differential equation , Laplace Transform and their Application. Learner will be able Solve the Problems of different types by applying theory. Learner will be able Appreciate the important application of Mathematics in Pharmacy. Learner will be able Apply Mathematical concepts and Principles to perform computations for Pharmaceutical sciences.
BS21	Human Anatomy and Physiology II- theory	Learner will be able To familiarize the students with structure and functions of various organs of the human body. They can able to know the various homeostatic function and their imbalance.

Course code	Course Name	Course Outcomes
BS22	Human Anatomy and Physiology II-Practical	Learner will be able Practical physiology is complimentary to the theoretical discussions in physiology. Practicals allow the verification of physiological processes discussed in theory classes through eLearner will be able eriments on living tissue, intact animals or normal human beings. This is helpful for developing an insight on the subiect
BS23	Pharmaceutical organic chemistry I -theory	Learner will be able In this program students learn how to write the structure, name of the organic compound, knowledge about the type of isomerism, write the reaction, name the reaction and orientation of reactions, account for reactivity/stability of compounds, Identify/confirm the unknown organic compound, knowledge about the naming reactions of carbonyl compounds and to perform common laboratory techniques including refluLearner will be able distillation, recrystallization, vacuum filtration, etc.
BS24	Pharmaceutical organic chemistry I -practical	
BS25	Biochemistry - theory	Learner will be able • Biochemistry deals with complete understanding of the molecular levels of the chemical process associated with living cells. <ul style="list-style-type: none"> • The scope of the subject is providing biochemical facts and the principles to understand metabolism of nutrient molecules in physiological and pathological conditions. • Understand the principles of various fields of chemistry and biology • Understand the significance of biochemistry • Describe the metabolism of carbohydrates, Lipids and proteins. • Describe the replication, transcription and translation • It is also emphasizing on genetic organization of mammalian genome and hetero & autocatalytic functions of DNA. • Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes. • Understand the metabolism of nutrient molecules in physiological and pathological conditions. • Understand the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and protein
BS26	Biochemistry - practical	
BS27	Pathophysiology - theory	In this program students learn how to write the structure, name of the organic compound, knowledge about the type of isomerism, write the reaction, name the reaction and orientation of reactions, account for reactivity/stability of compounds, Identify/confirm the unknown organic compound, knowledge about the naming reactions of carbonyl compounds and to perform common laboratory techniques including refluLearner will be able distillation, recrystallization, vacuum filtration, etc.

Course code	Course Name	Course Outcomes
BSN21	Computer Applications in Pharmacy - theory	Learner will be able This subject deals with the introduction Database, Database management system, computer application in clinical studies and use of Database. Know the various types of application of computer pharmacy. Know various types of Database. Know Various application of Database in Pharmacy.
BSN22	Computer Applications in Pharmacy - Practical	
BSN23	Environmental science	Learner will be able This course is designed to impart a basic knowledge on the preparatory pharmacy with arts and science of preparing the different types dosage forms. Upon completion of this course the student should be able to know the history of profession of pharmacy, evolution of pharmacy education in India. To understand the importance of prescription and Posology then Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations. Students can understand the concepts of suppositories and pharmaceutical incompatibilities & formulate and evaluate semi solid dosage forms.
BS31	Pharmaceutical organic chemistry II- theory	Learner will be able Upon completion of the course the student shall be able to 1. write the structure, name and the type of isomerism of the organic compound 2. write the reaction, name the reaction and orientation of reactions 3. account for reactivity/stability of compounds, 4. prepare organic compounds
BS32	Pharmaceutical organic chemistry II- practical	
BS33	Physical Pharmaceutics I- theory	Learner will be able Upon the completion of the course student shall be able to 1. Understand various physicochemical properties of drug molecules in the designing the dosage forms 2. Know the principles of chemical kinetics & to use them for stability testing nad determination of eLearner will be able iry date of formulations 3. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms
BS34	Physical Pharmaceutics I- Practical	

Course code	Course Name	Course Outcomes
BS35	Pharmaceutical microbiology-theory	Learner will be able Upon the completion of the course student shall be able to 1. Understand various physicochemical properties of drug molecules in the designing the dosage forms 2. Know the principles of chemical kinetics & to use them for stability testing and determination of shelf life of formulations 3. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms
BS36	Pharmaceutical microbiology-Practical	
BS37	Pharmaceutical engineering-Theory	Learner will be able Course outcome – Pharmaceutical engineering Students can know the various unit operations carried out in industry during manufacturing process. They can understand the material handling techniques. To knowledge the students about different prevention methods of corrosion control.
BS38	Pharmaceutical engineering-Practical	
BS41	Pharmaceutical organic chemistry III-theory	Learner will be able At the end of the course, the student shall be able to 1. understand the methods of preparation and properties of organic compounds 2. understand the stereo chemical aspects of organic compounds and stereo chemical reactions 3. know the medicinal uses and other applications of organic compounds
BS42	Medicinal chemistry I-Theory	Learner will be able Upon completion of the course the student shall be able to 1. understand the chemistry of drugs with respect to their pharmacological activity 2. understand the drug metabolic pathways, adverse effect and therapeutic value of drugs 3. know the Structural Activity Relationship (SAR) of different class of drugs 4. write the chemical synthesis of some drugs
BS43	Medicinal chemistry I-Practical	

Course code	Course Name	Course Outcomes
BS44	Physical Pharmaceutics II-theory	Learner will be able Upon the completion of the course student shall be able to 1. Understand various physicochemical properties of drug molecules in the designing the dosage forms 2. Know the principles of chemical kinetics & to use them for stability testing and determination of shelf life of formulations 3. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.
BS45	Physical Pharmaceutics II-Practical	
BS46	Pharmacology I-Theory	Learner will be able Upon completion of this course the student should be able to 1. Understand the pharmacological actions of different categories of drugs 2. Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels. 3. Apply the basic pharmacological knowledge in the prevention and treatment of various diseases. 4. Observe the effect of drugs on animals by simulated experiments 5. Appreciate correlation of pharmacology with other bio medical sciences
BS47	Pharmacology I-Practical	
BS48	Pharmacognosy and Phytochemistry I-Theory	Learner will be able course objective: The subject involves the fundamentals of Pharmacognosy like scope, classification of crude drugs, their identification and evaluation, phytochemicals present in them and their medicinal properties. Course outcome: The students can get thorough knowledge on the techniques involved in the cultivation and production of Medicinal plants, their uses, chemical nature, to know the evaluation methods for analysis herbal drugs and to carry out the microscopic and morphological evaluation of crude drugs.
BS49	Pharmacognosy and Phytochemistry II-Practical	Learner will be able Course objective: To provide hands on experience for identification & evaluation of crude drugs. Course outcome: To improve the students to identify & analysis the crude drugs by evaluation methods.

Course code	Course Name	Course Outcomes
BS51	Medicinal chemistry II-theory	Learner will be able Upon completion of the course the student shall be able to 1. Understand the chemistry of drugs with respect to their pharmacological activity 2. Understand the drug metabolic pathways, adverse effect and therapeutic value of drugs 3. Know the Structural Activity Relationship of different class of drugs 4. Study the chemical synthesis of selected drugs
BS52	Industrial Pharmacy I- Theory	Upon completion of the course the student shall be able to 1. Know the various pharmaceutical dosage forms and their manufacturing techniques. 2. Know various considerations in development of pharmaceutical dosage forms 3. Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality
BS53	Industrial Pharmacy I- Practical	
BS54	Pharmacology II-Theory	Learner will be able Upon completion of this course the student should be able to 1. Understand the mechanism of drug action and its relevance in the treatment of different diseases 2. Demonstrate isolation of different organs/tissues from the laboratory animals by simulated eLearner will be able eriments 3. Demonstrate the various receptor actions using isolated tissue preparation 4. Appreciate correlation of pharmacology with related medical sciences
BS55	Pharmacology II- Practical	
BS56	Pharmacognosy and Phytochemistry II-Theory	Learner will be able Upon completion of this course the student should be able to: 1. understand raw material as source of herbal drugs from cultivation to herbal drug product
BS57	Pharmacognosy and Phytochemistry II- Practical	2. know the WHO and ICH guidelines for evaluation of herbal drugs 3. know the herbal cosmetics, natural sweeteners, nutraceuticals 4. appreciate patenting of herbal drugs, GMP .

Course code	Course Name	Course Outcomes
BS58	Pharmaceutical jurisprudence	<p>Learner will be able Course objective: The subject is designed to impart basic knowledge on important legislations related to the profession of pharmacy in India.</p> <p>Course outcome:</p> <ol style="list-style-type: none"> 1. The students can get thorough knowledge on the Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals. 2. Various Indian pharmaceutical Acts and Laws. 3. The regulatory authorities and agencies governing the manufacture and sale of Pharmaceuticals. 4. The code of ethics during the pharmaceutical practice.
BS61	Medicinal chemistry III-theory	<p>Learner will be able Upon completion of the course student shall be able to</p> <ol style="list-style-type: none"> 1. Understand the importance of drug design and different techniques of drug design. 2. Understand the chemistry of drugs with respect to their biological activity. 3. Know the metabolism, adverse effects and therapeutic value of drugs. 4. Know the importance of SAR of drugs.
BS62	Medicinal chemistry III-Practical	
BS63	Pharmacology III-Theory	<p>Learner will be able Upon completion of this course the student should be able to:</p> <ol style="list-style-type: none"> 1. understand the mechanism of drug action and its relevance in the treatment of different infectious diseases 2. comprehend the principles of toLearner will be able cology and treatment of various poisoningsand 3. appreciate correlation of pharmacology with related medical sciences
BS64	Pharmacology III-Practical	
BS65	Herbal drug technology-theory	<p>Learner will be able Upon completion of this course the student should be able to:</p> <ol style="list-style-type: none"> 1. understand raw material as source of herbal drugs from cultivation to herbal drug product 2. know the WHO and ICH guidelines for evaluation of herbal drugs 3. know the herbal cosmetics, natural sweeteners, nutraceuticals 4. appreciate patenting of herbal drugs, GMP .
BS66	Herbal drug technology-Practical	

Course code	Course Name	Course Outcomes
BS67	Biopharmaceutics and pharmacokinetics - Theory	Learner will be able Upon completion of this course the student should be able to: 1. understand raw material as source of herbal drugs from cultivation to herbal drug product 2. know the WHO and ICH guidelines for evaluation of herbal drugs 3. know the herbal cosmetics, natural sweeteners, nutraceuticals 4. appreciate patenting of herbal drugs, GMP .
BS68	Pharmaceutical biotechnology	Learner will be able Upon completion of the subject student shall be able to; 1. Understanding the importance of Immobilized enzymes in Pharmaceutical Industries 2. Genetic engineering applications in relation to production of pharmaceuticals 3. Importance of Monoclonal antibodies in Industries 4. Appreciate the use of microorganisms in fermentation technology
BS69	Quality assurance	Learner will be able The students understand the importance of quality in pharmaceutical products, the students is eLearner will be able lored into importance of Good practices such as GMP, GLP etc, The factors affecting the quality of pharmaceutical is eLearner will be able lored, he understands the regulatory aspects of pharmaceutical taught to the student, the process involved in manufacturing of pharmaceuticals different section/department and activity is learnt and the various documentation process is highlighted to the student.
BS71	Instrumental methods of analysis-Theory	Learner will be able To impart knowledge about basic concepts of various modern instruments involved in spectroscopic and chromatographic techniques, instrumentation and their applications. Course outcome: Understand the principles, working and applications of spectroscopic, chromatographic techniques and other modern instruments for analysis of drugs and pharmaceutical dosage forms.
BS72	Instrumental methods of analysis-Practical	Course objective: 1. To provide hands on eLearner will be able erience for handling of analytical instruments 2. To develop eLearner will be able ertise in the analysis, quantification of drugs by using analytical instruments Course outcome: 1.Upgrade understanding about working principle of various components in instrumentation and pharmaceutical applications of various analytical techniques. 2. Utilize technical skills to handle instruments for quantitative estimation of bulk drugs and
BS73	Industrial pharmacy II-theory	Upon completion of the course, the student shall be able to: 1. Know the process of pilot plant and scale up of pharmaceutical dosage forms 2. Understand the process of technology transfer from lab scale to commercial batch 3. Know different Laws and Acts that regulate pharmaceutical industry 4. Understand the approval process and regulatory requirements for drug products

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BS74	Pharmacy practice - theory	Learner will be able Upon completion of the course, the student shall be able to 1. know various drug distribution methods in a hospital 2. appreciate the pharmacy stores management and inventory control 3. monitor drug therapy of patient through medication chart review and clinical review 4. obtain medication history interview and counsel the patients 5. identify drug related problems 6. detect and assess adverse drug reactions
BS75	Novel drug delivery system-theory	Learner will be able Upon completion of the course student shall be able 1. To understand various approaches for development of novel drug delivery systems. 2. To understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation
BSN76	Practice school	
BS81	Biostatistics and research methodology	Learner will be able Upon completion of the course the student shall be able to • Know the operation of M.S. E Learner will be able el, SPSS, R and MINITAB • DoE (Design of Experiment) (Learner will be able eriment) • Know the various statistical techniques to solve statistical problems • Appreciate statistical techniques in solving the problems.
BS82	Social and preventive pharmacy	Learner will be able After the successful completion of this course, the student shall be able to: Acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide. Have a critical way of thinking based on current healthcare development. Evaluate alternative ways of solving problems related to health and pharmaceutical issues
BSE81	Pharma marketing management	Learner will be able The course aims to provide an understanding of marketing concepts and techniques and their applications in the pharmaceutical industry
BSE82	Pharmaceutical regulatory science	Learner will be able Upon completion of the subject student shall be able to; 1. Know about the process of drug discovery and development 2. Know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals 3. Know the regulatory approval process and their registration in Indian and international markets
BSE83	Pharmacovigilance	Learner will be able At completion of this paper it is expected that students will be able to (know, do, and appreciate): 1. Why drug safety monitoring is important? 2. History and development of pharmacovigilance 3. National and international scenario of pharmacovigilance 4. Dictionaries, coding and terminologies used in pharmacovigilance 5. Detection of new adverse drug reactions and their assessment 6. International standards for classification of adverse drug reactions
BSE84	Quality control and standardization of herbals	Learner will be able Upon completion of the subject student shall be able to; 1. know WHO guidelines for quality control of herbal drugs 2. know Quality assurance in herbal drug industry 3. know the regulatory approval process and their registration in Indian and international markets 4. appreciate EU and ICH guidelines for quality control of herbal drugs

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BSE85	Computer aided drug design	Learner will be able Upon completion of the course, the student shall be able to understand Design and discovery of lead molecules The role of drug design in drug discovery process The concept of QSAR and docking Various strategies to develop new drug like molecules. The design of new drug molecules using molecular modeling software
BSE86	Cell and molecular biology	Learner will be able Upon completion of the subject student shall be able to; Summarize cell and molecular biology history. Summarize cellular functioning and composition. Describe the chemical foundations of cell biology. Summarize the DNA properties of cell biology. Describe protein structure and function. Describe cellular membrane structure and function
BSE87	Cosmetic Science	
BSE88	Pharmacological screening methods	Learner will be able Upon completion of the course the student shall be able to, Appreciate the applications of various commonly used laboratory animals. Appreciate and demonstrate the various screening methods used in preclinical research Appreciate and demonstrate the importance of biostatistics and research methodology Design and eLearner will be able cute a research hypothesis independently
BSE89	Advanced Instrumentation Techniques	Learner will be able 1. To make students aware about the basic principles of immunoassays and their applications 2. To get knowledge about Instrument calibration and validation procedure. 3. To relay understanding the basic principles of hyphenated instruments and their applications. Course outcome: Understand the principles, working and applications of hyphenated instruments and calibration
BSE810	Dietary Supplements and Nutraceuticals	Learner will be able This module aims to provide an understanding of the concepts behind the theoretical applications of dietary supplements. By the end of the course, students should be able to : 1. Understand the need of supplements by the different group of people to maintain healthy life. 2. Understand the outcome of deficiencies in dietary supplements. 3. Appreciate the components in dietary supplements and the application. 4. Appreciate the regulatory and commercial aspects of dietary supplements including health claims.