Program name	Course code	Course name	Year of introduction	Course outcomes
B. pharm semester I	BP101T	Human anatomy and physiology(THEORY)	2022-2023	At the end of the course students will be able to... **CO1:** Explain the theoretical principles behind UV and IR spectroscopy. **CO2:** Learn basic principles and instrumentation of UV spectrometer, IR spectrometer, fluorimeter flame photometer. **CO3:** Learn basic principles involved in various chromatographic techniques like, TLC, column chromatography and paper chromatography **CO4:** Understand the separation of compounds by chromatographic techniques. **CO5:** Explain principle Instrumentation, and application in separation and identification of compounds by electrophoresis technique. **CO6:** Learn separation and identification of compounds by various chromatographic techniques. **CO7:** Explain theory, principle and instrumentation of GC, HPLC, gel chromatography, ion exchange chromatography and affinity chromatography. **CO8:** Learn applications of various chromatographic techniques for separation of mixtures containing organic, inorganic and natural products.
	BP102T	Pharmaceutical analysis (theory)	2022-2023	**Course Outcome** **CO1**: To understand the principles of volumetric/gravimetric and electrochemical analytical techniques. **CO2:** Outline the method of expressing the concentration with preparation and standardization of various molar and normal solutions.

				CO3: To gain knowledge of sources of errors and minimizing techniques. **CO4**: To explain about accuracy, precision and significant figure error concepts. **CO5:** Describe various Acid base titration **CO6:** Describe various Acid base non aqeous titration **CO7:** Clarify different terms, basic principles and reaction conditions of precipitation reaction. **CO8:** Clarify different terms, basic principles and reaction conditions of Complexation reaction. **CO9:** To understand the principles of gravimetric analytical techniques. **CO10:** Clarify different terms, basic principles and reaction conditions of redox reaction.
	BP103T	Pharmaceutics-I (theory)	2022-2023	
	BP104T	Pharmaceutical inorganic chemistry theory	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and

				antidote **CO8:** Describe the properties, storage condition and application of radiopharmaceuticals
	BP105T	Communication skill (theory)	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
	BP106RBT	Remedial biology/ (theory)	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay,

				properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
	BP106RMT	Remedial mathematics (theory)	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
B. pharm semester II	BP201T	Human anatomy and physiology-II	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics.

				CO5: Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
	BP202T	Pharmaceutical organic chemistry-I	2022-2023	**Course Outcome** **CO1:** Describe the classification of organic compounds and nomenclature. **CO2:** Write the structure, name of the organic compound **CO3:** Knowledge about the type of isomerism, Classify isomerism and explain structural isomerism. **CO4:** Explain hybridisation in alkanes. **CO5:** Explain hybridisation in alkenes and stabilities of alkenes. **CO6:** Explain the mechanism, orientation of elimination, Electrophilic, free radical and Nucleophilic addition reaction. **CO7:** Explain stabilities of conjugated dienes. **CO8:** Discuss the mechanism, kinetics, stereochemistry and factors affecting SN1 & SN2 reaction. **CO9:** Discuss the application, qualitative test and structure of organic compounds of medicinal importance. **CO10:** Knowledge about the naming reactions of carbonyl compounds **CO11:** Discuss the mechanism of some named reaction. **CO12:** Discuss the acidity of carboxylic acids.

				CO13: Discuss the basicity of amines.
	BP203T	Biochemistry	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
	BP204T	Pathophysiology	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics

				and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
	BP205T	Computer application in pharmacy	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
	BP206	Environmental science (theory)	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay,

				properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
B. pharm semester III	BP301T	Pharmaceutical organic chemistry-II	2022-2023	**Course Outcome** **CO1:** Understand the principles/ mechanism of organic compounds **CO2:** Basic knowledge regarding general methods of preparation of organic compounds. **CO3:** Understand the reaction, name the reaction and orientation of reactions **CO4:** Learn reactivity/stability of organic compounds **CO5:** Learn the preparation of organic compounds **CO6:** discuss the structure and uses of the organic compounds **CO7:** Understand the chemistry, chemical reactions and analytical constant of fats and oils **CO8:**To acquire knowledge in heterocyclic compounds
	BP302T	Physical Pharmaceutics I	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and

				cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
	BP303T	Pharmaceutical microbiology	2022-2023	**CO1:** Explain the sources of impurities and methods to determine the impurities in inorganic pharmaceutical compounds. **CO2:** Explain the method of preparation, assay, properties, medicinaluses of acids, bases, buffers, extra and intracellular electrolytes. **CO3:** Explain the method of preparation, assay, properties, medicinal uses of dental products. **CO4:** Explain the method of preparation, assay, properties, medicinal uses of acidifiers, antacids and cathartics. **CO5:** Explain the method of preparation, assay, properties, medicinal uses of antimicrobials **CO6:** Explain the method of preparation, assay, properties, medicinal uses of expectorants, emetics and haematinics **CO7:** Explain the method of preparation, assay, properties, medicinal uses of astringent, poison and antidote
	BP304T	Pharmaceutical Engineering – Theory	2022-2023	CO (Course Outcome) CO1: Know various unit operations used in Pharmaceutical industries. CO2: Understand the various laws, mechanisms of unit operations. CO3: Learn the various processes involved in Pharmaceutical manufacturing process. CO4: Understand the material handling techniques. CO5: Know the principle, construction, working,

				uses, advantages and disadvantages of Pharmaceutical equipments used for various unit operations. CO8: Understand the concepts of heat transfer and fluid flow.
B. pharm semester IV	BP401T	Pharmaceutical Organic Chemistry III– Theory	2022-2023	**Course Outcome** **CO1:** Explain the stereo chemical aspects of organic compounds and stereo chemical reaction **CO2:** Understand the basic terminologies in stereochemistry and organic reactions **CO3:** Stereo-chemical features including conformation and stereo electronic effects; Geometrical isomers **CO4:** To acquire the knowledge and understanding of the basic experimental principles of heterocyclic chemistry. **CO5:** Understand the nomenclature of organic compounds **CO6:** Understand the properties of heterocyclic compounds **CO7:** Understand the methods of preparation and properties of organic compounds **CO8:** Understand the methods of preparation and properties of organic compounds **CO9:** Know the medicinal uses and other applications of organic compounds **CO10:** Understand the aromaticity and reactivity of heterocyclic compounds **CO11:** Understand the important named reactions
	BP402T	Medicinal Chemistry I – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity

				CO2: Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP403T	Physical Pharmaceutics II – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics

				CO8: Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP404T	Pharmacology I – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP405T	Pharmacognosy and Phytochemistry I– Theory	2022-2023	CO1: Explain the importance of Pharmacognosy, its history, scope and development along with the sources of drugs. CO2: Detail understanding of various crude drug classifications with their merits and demerits. CO3: Describe the cultivation and collection methods for the herbs considering the various factors affecting and plant hormones. CO4: Explain the importance of plant tissue culture, nutritional requirements, its growth and edible vaccines. CO5: Explain the significant role of Pharmacognosy

				in different system of medicine. CO6: Describe the different types of secondary metabolites and their role in treatments of diseases. CO7: Explain the complete description of natural fibres with hallucinogens, teratogens and natural allergens. CO8: Explain and discuss the metabolic processes in plants and significant role of different metabolites in treating the diseases.
B. pharm semester V	BP501T	Medicinal Chemistry II – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP502T	Industrial PharmacyI– Theory	2022-2023	Upon successful completion of this course, the students will be able to CO1 Discuss and impart fundamental knowledge of pharmaceutical product development. CO2 Understand process of pilot plant and scale up of various pharmaceutical dosage forms. CO3 Learn the technology transfer process from laboratory scale to commercial batch.

				CO4 Understand different Laws and Acts that regulate pharmaceutical industry. CO5 Learn the concept and standards of quality management system used in Pharmaceutical Industry. CO6 Know the approval process and regulatory requirements for drug product
	BP503T	Pharmacology II – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP504T	Pharmacognosy and Phytochemistry II– Theory	2022-2023	CO1:Explain the basic metabolic pathways and metabolites formation in higher plants. CO2: Describe the secondary metabolites in plants and their paramount rolein diseases treatment. CO3: Understanding the difference between crude drug morphology, chemical constituents and their role in treatment of ailments. CO4: Explain the isolation, identification and analysis for various secondary metabolites considering specific examples. CO5: Description and consideration of radioactive isotopes in the investigation of biogenetic study.

				CO6: Explain the industrial production, estimation and utilization on large scale basis for secondary metabolites. CO7: Compare and discuss the different methods of extraction for herbal drugs covering modern and traditional methods. CO8: Discuss spectroscopic, chromatographic and electrophoresis methods for isolation, purification and identification of crude drugs.
	BP505T	Pharmacognosy and Phytochemistry II– Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
B. pharm semester VI	BP601T	Medicinal Chemistry III – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity

				CO2: Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP602T	Pharmacology III – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics

				CO8: Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP603T	Herbal Drug Technology – Theory	2022-2023	CO1: Understanding the raw material and their conversion into herbal drug product with their evaluation. CO2: To conceptualize principle, theory, diagnosis and treatments for the different system of medicine. CO3: Explain the scope and types of products as neutraceuticals and their health benefits in treatment of diseases. CO4:Elaborate the sources and description of raw material fromherbals used in different herbal formulations. CO5: Describe the different conventional herbal formulations and outline their significance and measure for ailments. CO6: Discuss guideline framed by WHO and ICH for the assessment and stability testing of herbal drugs. CO7:Explain the significance of herbal drug Industry and manufacturing of medicinal and aromatic plants in India and their correlations. CO8: Describe the components of GMP and their objectives along with Infrastructural requirements related to various criteria parameters.
	BP604T	Biopharmaceutics and Pharmacokinetics – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous

				system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP605T	Pharmaceutical Biotechnology – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
	BP606T	Quality Assurance – Theory	2022-2023	After completion of this course students will be able to **CO1:** Explain the various physiochemical properties

				in relation to biological activity **CO2:** Discuss drug metabolism **CO3:** Study SAR of some important drug classes and mode of action at molecular level. **CO4:** Learn pharmacological action of different drug classes and their Side effects **CO5:** Learn synthesis of the important class of compounds **CO6:** Explain drugs acting on the adrenergic nervous system and cholinergic nervous system **CO7:** Discuss the drugs acting as CNS depressants: Anticonvulsants, Antipsychotics, Sedatives & Hypnotics **CO8:** Learn drugs acting on CNS: Local anaesthetics, antihistamines, analgesics & anti-inflammatory agents.
B. pharm semester VII	BP701T	Instrumental Methods of Analysis – Theory	2022-2023	At the end of the course students will be able to... **CO1:** Explain the theoretical principles behind UV and IR spectroscopy. **CO2:** Learn basic principles and instrumentation of UV spectrometer, IR spectrometer, fluorimeter flame photometer. **CO3:** Learn basic principles involved in various chromatographic techniques like, TLC, column chromatography and paper chromatography **CO4:** Understand the separation of compounds by chromatographic techniques. **CO5:** Explain principle Instrumentation, and application in separation and identification of compounds by electrophoresis technique.

				CO6: Learn separation and identification of compounds by various chromatographic techniques. **CO7:** Explain theory, principle and instrumentation of GC, HPLC, gel chromatography, ion exchange chromatography and affinity chromatography. **CO8:** Learn applications of various chromatographic techniques for separation of mixtures containing organic, inorganic and natural products.
	BP702T	Industrial PharmacyII – Theory	2022-2023	Upon successful completion of this course, the students will be able to CO1 Discuss and impart fundamental knowledge of pharmaceutical product development. CO2 Understand process of pilot plant and scale up of various pharmaceutical dosage forms. CO3 Learn the technology transfer process from laboratory scale to commercial batch. CO4 Understand different Laws and Acts that regulate pharmaceutical industry. CO5 Learn the concept and standards of quality management system used in Pharmaceutical Industry. CO6 Know the approval process and regulatory requirements for drug product
	BP703T	Pharmacy Practice – Theory	2022-2023	**CO1:** Explain the theoretical principles behind UV and IR spectroscopy. **CO2:** Learn basic principles and instrumentation of UV spectrometer, IR spectrometer, fluorimeter flame photometer. **CO3:** Learn basic principles involved in various chromatographic techniques like, TLC, column chromatography and paper chromatography **CO4:** Understand the separation of compounds by chromatographic techniques. **CO5:** Explain principle Instrumentation, and application in separation and identification of compounds by electrophoresis technique. **CO6:** Learn separation and identification of

				compounds by various chromatographic techniques. **CO7:** Explain theory, principle and instrumentation of GC, HPLC, gel chromatography, ion exchange chromatography and affinity chromatography. **CO8:** Learn applications of various chromatographic techniques for separation of mixtures containing organic, inorganic and natural products.
	BP704T	Pharmacy Practice – Theory	2022-2023	
B. pharm semester VIII	BP801T	Biostatistics and Research Methodology	2022-2023	**CO1:** Explain the theoretical principles behind UV and IR spectroscopy. **CO2:** Learn basic principles and instrumentation of UV spectrometer, IR spectrometer, fluorimeter flame photometer. **CO3:** Learn basic principles involved in various chromatographic techniques like, TLC, column chromatography and paper chromatography **CO4:** Understand the separation of compounds by chromatographic techniques. **CO5:** Explain principle Instrumentation, and application in separation and identification of compounds by electrophoresis technique. **CO6:** Learn separation and identification of compounds by various chromatographic techniques. **CO7:** Explain theory, principle and instrumentation of GC, HPLC, gel chromatography, ion exchange chromatography and affinity chromatography. **CO8:** Learn applications of various chromatographic techniques for separation of mixtures containing organic, inorganic and natural products.

	BP802T	Biostatistics and Research Methodology	2022-2023	Upon successful completion of this course, the students will be able to CO1 Discuss and impart fundamental knowledge of pharmaceutical product development. CO2 Understand process of pilot plant and scale up of various pharmaceutical dosage forms. CO3 Learn the technology transfer process from laboratory scale to commercial batch. CO4 Understand different Laws and Acts that regulate pharmaceutical industry. CO5 Learn the concept and standards of quality management system used in Pharmaceutical Industry. CO6 Know the approval process and regulatory requirements for drug product