


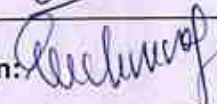



YASH INSTITUTE OF PHARMACY, AURANGABAD
COURSE OUTCOMES (B. PHARMACY) P-2017

IQAC-PR04-DI-001/V00/W.e.f.: 01-January-2021

COURSE OUTCOMES (B. PHARMACY) P-2017 (PCI Syllabus)

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Issued by:	Role: ISO Co-Ordinator	Name: Dr. G.A. Vaishnav	Sign: 




YASH INSTITUTE OF PHARMACY, AURANGABAD
COURSE OUTCOMES (B. PHARMACY) P-2017

IQAC-PR04-DI-001/V00/W.e.f.: 01-January-2021

First Year 1st Semester




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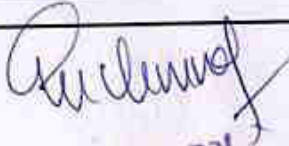
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BP101T	Human anatomy and physiology I -TH
	After the successful completion of the course, students should be able to:
BP101T.1	Explain gross morphology, structure and functions of various organs of the human body.
BP101T.2	Describe various homeostatic mechanisms and their imbalances.
BP101T.3	Identify various tissues and organs of different systems of the human body.
BP101T.4	Appreciate coordinated working pattern of different organs of each system
BP101T.5	Continually develop scientific reasoning and the ability to interpret data through the biochemical parameters.
BP101T.6	Critically evaluate health articles and medical journals related to Anatomy and Physiology
BP107P	Human anatomy and physiology I - PR
	After the successful completion of the course, students should be able to:
BP107P.1	Understand the processes involved with maintenance of homeostasis and anticipate what may occur when homeostatic balance mechanisms are lost.
BP107P.2	Identify structures in the body and analyze their relationship when other structures.
BP107P.3	Employ the scientific process for understanding principles of Anatomy and Physiology.
BP107P.4	Analyze Anatomy and Physiology observations and data and determine the potential physiological consequences.
BP107P.5	Describe development, regeneration and normal function of body systems.
BP107P.6	Demonstrate practical knowledge of human gross and microscopic Anatomy using Human Anatomy Atlas 3D and prepared histological slides.
BP102T	Pharmaceutical Analysis I -TH
	After the successful completion of the course, students should be able to:
BP102T.1	Understand the basic concepts and principles of titrimetric, gravimetric and electrochemical analyses.
BP102T.2	Apply the principles of titrimetric and gravimetric methods in the analyses of pharmaceuticals.
BP102T.3	Explain concentration, calculation of a solution, its preparation, standardization and its storage conditions.
BP102T.4	Describe the sources of errors commonly developed during drug analyses and methods to minimize them.
BP102T.5	Discuss the techniques of conductometry, potentiometry and polarography and their applications in the analysis of pharmaceuticals.

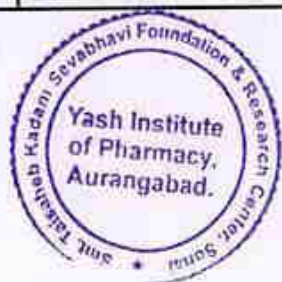


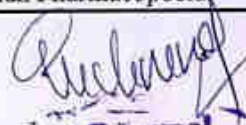

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BP108P	Pharmaceutical Analysis I -PR
	After the successful completion of the course, students should be able to:
BP108P.1	Prepare primary and secondary standard solutions.
BP108P.2	Perform standardization of secondary standard solutions.
BP108P.3	Determine percentage purity of given pharmaceutical drugs by titrimetric analysis.
BP108P.4	Determine normality of a solution by electro-analytical methods
BP103T	Pharmaceutics I -TH
	After the successful completion of the course, students should be able to:
BP103T.1	Describe the history of pharmacy profession and its scope.
BP103T.2	Handle the prescription in a professional manner.
BP103T.3	Select the dose for a drug.
BP103T.4	Identify & suggest correction method for any possible pharmaceutical incompatibility in a formulation/prescription.
BP103T.5	Formulate and evaluate conventional dosage forms.
BP109P	Pharmaceutics I -PR
	After the successful completion of the course, students should be able to:
BP109P.1	Compound some conventional solid, liquid and semisolid dosage forms.
BP109P.2	Select an appropriate container and storage conditions for a product.
BP109P.3	Label the pharmaceuticals
BP104T	Pharmaceutical Inorganic Chemistry-TH
	After the successful completion of the course, students should be able to:
BP104T.1	Explain the effects of impurities in pharmaceuticals.
BP104T.2	Describe the principles and methods of limit tests to control common impurities in pharmaceutical substances.
BP104T.3	Explain different pharmaceutical buffers, their preparations, uses in pharmaceutical system, measurement of tonicity.
BP104T.4	Explain the medicinal importance of pharmaceutical inorganic compounds.
BP104T.5	Discuss the principles and methodology of assay of several inorganic drugs.
BP110P	Pharmaceutical Inorganic Chemistry-PR
	After the successful completion of the course, students should be able to:
BP110P.1	Adjudge the level of specific impurities in the given inorganic compounds by performing different limit tests.
BP110P.2	Use different chemical methods to prepare inorganic pharmaceuticals.
BP110P.3	Perform identification tests as per Indian Pharmacopoeia.





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BP110P.4	Determine the impurities qualitatively by performing tests for purity
BP105T	Communication skills-TH
	After the successful completion of the course, students should be able to:
BP105T.1	Explain the key terminologies of process of communication.
BP105T.2	Identify the importance of tone, body language and active listening as elements of effective communication.
BP105T.3	Interpret the factors influencing communication perspectives.
BP105T.4	Explain the nuances of audience – centric presentation.
BP105T.5	Demonstrate effective interview skills.
BP105T.6	Apply appropriate communication style in professional context.
BP111P	Communication Skills -PR
	After the successful completion of the course, students should be able to:
BP111P.1	Recognize phonemes for proper articulation of words
BP111P.2	Explain the key concepts of writing skills and listening skills
BP111P.3	Apply listening skills and reading skills for comprehension
BP111P.4	Demonstrate conversation skills using appropriate body language and tone
BP111P.5	Demonstrate audience – centric presentation
BP111P.6	Develop professional written document




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First Year 2nd Semester



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BP201T	Human Anatomy and Physiology II -TH
	After the successful completion of the course, students should be able to:
BP201T.1	Identify the major components of the circulatory system and lymphatic system, describe their functions.
BP201T.2	Describe the flow of blood through the heart and the role of each atrium, ventricle, and valve in this process.
BP201T.3	Describe the components and functions of major digestive juices, and explain where they are produced.
BP201T.4	Describe pulmonary ventilation and identify the structures and Identify the major components of the urinary system and describe their functions.
BP201T.5	Locate and identify the structures that make up the female and male reproductive system.
BP201T.6	Explain basic physiological parameters, perform basic analyses, and interpret the data, taking into account the limitations of the morphology on the conclusions that can be drawn
BP207P	Human Anatomy and Physiology II -PR
	After the successful completion of the course, students should be able to:
BP207P.1	Categorize nervous system and recognizes cells of the nervous system.
BP207P.2	Explain the importance of nervous system.
BP207P.3	Explain the physiology of skeletal muscle contraction.
BP207P.4	Explain the properties of digestive and excretory system.
BP207P.5	Explain the importance of respiratory system.
BP207P.6	Explain the structure and functions of male and female reproductive systems
BP202T	Pharmaceutical Organic Chemistry I - TH
	After the successful completion of the course, students should be able to:
BP202T.1	After the successful completion of the course, students should be able to:
BP202T.2	Will classify organic compounds based on their general characteristics and functional groups present.
BP202T.3	Will be able to outline synthetic strategies of important organic compounds.
BP202T.4	Discuss the possible isomers of organic compounds.
BP202T.5	Describe the mechanisms in organic reactions.
BP202T.6	Outline the properties and uses of organic compounds studied.
BP208P	Pharmaceutical Organic Chemistry I - PR



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	After the successful completion of the course, students should be able to:
BP208P.1	Detect the extra elements present in compounds.
BP208P.2	Identify organic compounds by systematic qualitative analysis.
BP208P.3	Determine the boiling point/melting point of organic compounds.
BP208P.4	Construct molecular models of compounds using atomic models sets.
BP203T	Biochemistry-TH
	After the successful completion of the course, students should be able to:
BP203T.1	Describe the concepts of biological oxidation and bioenergetics
BP203T.2	Explain the role, classification and metabolism of various bio molecules i.e. carbohydrates, proteins and lipids
BP203T.3	To study the application of enzyme inhibition in pharmaceutical industry
BP203T.4	Discuss the Metabolism of nucleic acids and protein biosynthesis
BP209P	Biochemistry-PR
	After the successful completion of the course, students should be able to:
BP209P.1	Identify normal and abnormal biochemical constituents of urine.
BP209P.2	Determine carbohydrates and proteins.
BP209P.3	Perform identification tests as per Indian Pharmacopoeia.
BP209P.4	Estimate biochemical parameters in blood and urine.
BP209P.5	Analyse and determine the factors affecting enzyme activity.
BP209P.6	Analyse and report the physiological and pathological constituents of urine.
BP209P.7	Handle various instruments used in biochemical investigations.
BP204T	Pathophysiology-TH
	After the successful completion of the course, students should be able to:
BP204T.1	Explain the signs and symptoms of diseases.
BP204T.2	Describe the principles of Cell Injury and Adaptation.
BP204T.3	Identify storage conditions for inorganic pharmaceuticals.
BP204T.4	Explain the mechanisms involved in inflammation and repair.
BP204T.5	Outline the etiology and pathogenesis of the selected disease states cuss the complications of systemic conditions to their etio-pathogenesis.
BP205T	Computer Applications in Pharmacy -TH
	After the successful completion of the course, students should be able to:
BP205T.1	Explain the applications of computers in Pharmacy.
BP205T.2	Explain bioinformatics and their impact in vaccine discovery.
BP205T.3	Analyse the different types of databases.
BP205T.4	Create databases using MS Access, SQL.
BP205T.5	Identify the role of computers for data analysis in the field of preclinical development.




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BP210P	Computer Applications in Pharmacy -PR
	After the successful completion of the course, students should be able to:
BP210P.1	Use MS Word to create questionnaires and other documentation related to pharmacy.
BP210P.2	Use MS Access to modify the databases created.
BP210P.3	Handle web and XML pages to export tables, forms and queries.
BP210P.4	Generate report; work with queries on MS Access.
BP210P.5	Create database, HTML web page.
BP206T	Environmental Science -TH
	After the successful completion of the course, students should be able to:
BP206T.1	Describe the natural resources.
BP206T.2	Generate interest in environment improvement.
BP206T.3	Create awareness about ecosystems and their functions.
BP206T.4	Develop an attitude of concern towards environmental pollution.
BP206T.5	Recommend necessary measures for identifying and solving environmental issues.



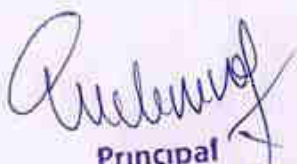
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**YASH INSTITUTE OF PHARMACY, AURANGABAD
COURSE OUTCOMES (B.PHARMACY) P-2017**

IQAC-PR04-DI-001/V00/W.e.f.: 01-January-2021

Second Year 3rd Semester




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BP301T	Pharmaceutical Organix Chemistry II-TH
	After the successful completion of the course, students should be able to:
BP301T.1	Explain the general principles and mechanisms involved in organic reactions.
BP301T.2	Distinguish the products obtain through simple organic reactions.
BP301T.3	Discuss the reactivity, orientation and stability of organic reactions.
BP301T.4	Describe the chemistry of fats and oils.
BP301T.5	Differentiate the polynuclear organic compounds with respect to their chemistry.
BP301T.6	Structure and uses of important organic compound
BP305P	Pharmaceutical Organix Chemistry II-PR
	After the successful completion of the course, students should be able to:
BP305P.1	Take up synthesis of various organic compounds by different chemical reactions.
BP305P.2	Purify organic compounds using various procedures like recrystallization and steam distillation.
BP305P.3	Determine the purity of fats and oils.
BP305P.4	Calculate the percentage yields of the products obtained by synthesis
BP305P.5	Apply recrystallization and steam distillation methods for purification of synthesized organic compounds
BP302T	Physical Pharmaceutics-I-TH
	After the successful completion of the course, students should be able to:
BP302T.1	Describe the principles of solubility and partition coefficient
BP302T.2	Explain physical principles of states of matter and phase rule.
BP302T.3	Assess the importance of pH and buffers in manufacturing pharmaceutical dosage forms and maintaining stability.




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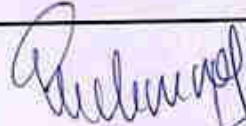
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BP302T. 4	Solve problems related to states of matter, concentration expression, buffers and isotonic solutions.
BP302T. 5	Recognize basic rules and equations regarding physical principles essential for pharmaceutical applications.
BP306P	Physical Pharmaceutics-I-PR
	After the successful completion of the course, students should be able to:
BP306P.1	Perform solubility studies for different drugs.
BP306P.2	Determine pKa values and estimate HLB values.
BP306P.3	Perform and determine the percentage composition.
BP306P.4	Calculate Critical Micellar Concentration of various surfactants
BP303T	Pharmaceutical Microbiology-TH
	After the successful completion of the course, students should be able to:
BP303T. 1	Define pharmaceutical microbiology, pure culture, and able to choose nutrient media for isolation of different microorganisms by using different microscopes
BP303T. 2	Describe the classification, methods of identification, microbial growth/reproduction, cultivation, quantification and preservation.
BP303T. 3	Understand staining, preservation and sterilization techniques accordingly they can compare and classify the microorganisms.
BP303T. 4	Explain the microbial control techniques such as sterilization, sterility tests, disinfection and preservation of pharmaceutical products.
BP303T. 5	Classify clean areas and analyze antimicrobial activity of a new substance
BP303T. 6	Recommend appropriate methods for microbiological standardization and cell culture technology
BP307P	Pharmaceutical Microbiology-PR
	After the successful completion of the course, students should be able to:
BP307P.1	Identify apparatus used in microbiology
BP307P.2	Different methods of sterilization and sterility testing of pharmaceuticals
BP307P.3	Prepare culture media for the growth of microorganisms
BP307P.4	Identify and isolate bacteria
BP307P.5	Perform aseptic procedures for inoculation
BP307P.6	Determine MIC of antimicrobial agents.
BP304T	Pharmaceutical Engineering-TH
	After the successful completion of the course, students should be able to:
BP304T. 1	Explain the theoretical principles involved in unit operations




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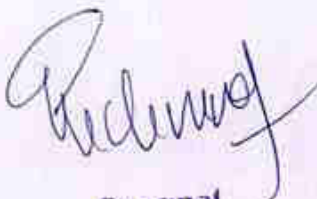
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BP304T. 2	Describe the basic concepts involved in pharmaceutical operations
BP304T. 3	Perform various processes involved in pharmaceutical manufacturing processes.
BP304T. 4	Explain the process of heat exchangers, filters, centrifuges, dryers, refrigeration systems etc. required for the manufacturing of various pharmaceutical formulations
BP304T. 5	Analyse the efficiency of equipments of important operations such as filtration, drying and evaporation.
BP304T. 6	Explain the significance of construction materials in the designing and operation of equipments and appreciate the various preventive methods used for corrosion control in Pharmaceutical industries
BP308P	Pharmaceutical Engineering-PR
BP308P.1	Explain Size Analysis By Sieving , Size Reduction Using Ball Mill, Mixing, Distillation
BP308P.2	Determine Construction Working And Application Of Pharmaceutical Machinery
BP308P.3	Calculate The Efficiency Of Steam Distillation And Uniformity Index For Given Sample
BP308P.4	Evaluate Materials Used For Mixing, Drying, Filtration, Centrifugation
BP308P.5	Demonstration Of Colloid Mill, Planetary Mixer, Fluidized Bed Dryer, Freeze Dryer And Such Other Major Equipment




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Second Year 4th Semester



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COURSE OUTCOMES (B.PHARMACY) P-2017

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BP401T	Pharmaceutical Organic Chemistry-III -TH
	After the successful completion of the course, students should be able to:
BP401T.1	Explain concepts of stereoisomerism in organic compounds.
BP401T.2	Identify geometrical isomers and name cis-trans, EZ and syn-anti systems.
BP401T.3	Explain methods of determining configuration of geometrical isomers and conformational isomerism in ethane, n-butane and cyclohexane.
BP401T.4	Understand nomenclature, aromaticity, synthesis, reactivity, reactions and medical uses of five member heterocyclic compounds.
BP401T.5	Understand nomenclature, aromaticity, synthesis, reactivity, reactions and medical uses of six member and fused ring heterocyclic compounds.
BP401T.6	Remember reactions of synthetic importance.
BP402T	Medicinal Chemistry-I-TH
	After the successful completion of the course, students should be able to:
BP402T.1	Classify medicinal compounds according to their chemical structure
BP402T.2	Identify the effect of physicochemical properties on biological action and drug metabolic pathways
BP402T.3	Analyze and interpret the nomenclature of compounds of synthetic origin
BP402T.4	Explain the mechanism of action and side effects of various category of drugs
BP402T.5	Apply the knowledge of medicinal chemistry in the study of Structural activity relationship of drug molecules.
BP402T.6	Apply the principles of synthetic chemistry to predict the synthesis of drug molecules



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BP406P	Medicinal Chemistry-I-PR
	After the successful completion of the course, students should be able to:
BP406P.1	Apply the basic knowledge of organic chemistry in synthesis of medicinal compounds
BP406P.2	Analyse and predict the principles of chemical reactions
BP406P.3	Apply and interpret the mechanism of chemical reactions
BP406P.4	apply the concept of moles in calculating theoretical yield
BP406P.5	calculate and estimate the percentage purity of the compounds synthesised
BP403T	Physical Pharmaceutics II-TH
	After the successful completion of the course, students should be able to:
BP403T.1	Explain the concepts of rheological sciences and flow properties of pharmaceutical preparations
BP403T.2	Describe the factors leading to instability of dispersion systems
BP403T.3	Discuss the effect of particle size distribution of powders on the manufacture of dosage forms
BP403T.4	Outline the principles of chemical kinetics in stability testing
BP403T.5	Apply the principles of micromeritics, rheology, chemical kinetics, stability and course dispersion in the formulation development and evaluation of dosage forms
BP407P	Physical Pharmaceutics II-PR
	After the successful completion of the course, students should be able to:
BP407P.1	Estimate various flow properties of powders.
BP407P.2	Determine the particle size using various methods.
BP407P.3	Understand the effect of suspending agents on sedimentation volume.
BP407P.4	Determine various order of reactions.
BP404T	Pharmacology-I-TH
	After the successful completion of the course, students should be able to:
BP404T.1	Define the terminologies used in pharmacology
BP404T.2	Explain the pharmacokinetics and mechanism of drug action at organ system/sub cellular/macromolecular levels
BP404T.3	Outline the stages of drug development
BP404T.4	Explain the pharmacology of drugs acting on Nervous System
BP404T.5	Recognize adverse drug reactions and drug interactions
BP408P	Pharmacology-I-PR
	After the successful completion of the course, students should be able to:
BP408P.1	Identify the appliances used in experimental pharmacology



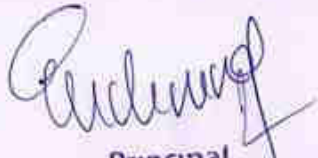
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BP408P.2	Demonstrate routes of drug administration in animals
BP408P.3	Choose suitable anesthetics for animal studies
BP408P.4	Demonstrate drug action using computer models
BP408P.5	Perform common laboratory techniques in animals
BP408P.6	Recommend procedures for laboratory animal maintenance
BP405T	Pharmacognosy and Phytochemistry I-TH
	After the successful completion of the course, students should be able to:
BP405T.1	Describe the scope and evolution of Pharmacognosy
BP405T.2	Explain the chemical nature, uses and evaluation of crude drugs
BP405T.3	Explain the cultivation, collection and processing of drugs of natural origin
BP405T.4	Describe the role of herbal drugs in traditional systems of medicine
BP405T.5	Discuss the medicinal importance of marine drugs
BP405T.6	Compare the morphological characteristics of market samples with the authentic drugs
BP409P	Pharmacognosy and Phytochemistry I-PR
	After the successful completion of the course, students should be able to:
BP409P.1	Demonstrate chemical tests to identify unorganized crude drugs
BP409P.2	Evaluate the quality and purity of crude drugs
BP409P.3	Perform linear measurements for crude drug identification
BP409P.4	Develop quality control methods for standardisation of herbal drugs




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Third Year 5th Semester



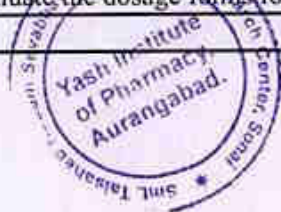
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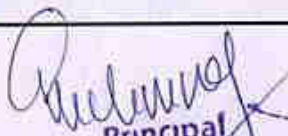
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BP501T	Medicinal Chemistry II-TH
	After the successful completion of the course, students should be able to:
BP501T.1	Describe the chemistry of drugs with respect to their pharmacological activity.
BP501T.2	Discuss the drug metabolic pathways, adverse effects and therapeutic value of drugs
BP501T.3	Explain the physicochemical properties and pharmacokinetic properties of the drugs
BP501T.4	Explain the structural activity relationship of different class of drugs.
BP501T.5	Examine the chemical synthesis of various drugs.
BP502T	Formulative Pharmacy-TH
	After the successful completion of the course, students should be able to:
BP502T.1	Define various Pharmaceutical dosage forms
BP502T.2	Explain considerations involved in development of Pharmaceutical dosage forms
BP502T.3	Apply preformulation concepts in the development of solid, liquid and parenteral dosage forms
BP502T.4	Compare various dosage forms based on their formulation and usage
BP502T.5	Evaluate the dosage forms for their quality




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BP506P	Formulative Pharmacy-PR
	After the successful completion of the course, students should be able to:
BP506P.1	Prepare formulations of different dosage forms as per the batch formula
BP506P.2	Select suitable packaging container for a dosage form
BP506P.3	Operate different equipment's used in preparation of dosage forms
BP506P.4	Relate the physicochemical properties of drugs to dosage form characteristics
BP506P.5	Evaluate different dosage forms by performing quality control tests
BP503T	Pharmacology II-TH
	After the successful completion of the course, students should be able to:
BP503T.1	Describe the principles, applications and types of bioassay
BP503T.2	Explain the pharmacokinetics and mechanism of drug action at organ system/ sub cellular/macromolecular levels
BP503T.3	Explain the pharmacology of drugs acting on systems
BP503T.4	Recognize adverse drug reactions and drug interactions
BP503T.5	Discuss drug mechanisms and their relevance in the treatment of diseases
BP507P	Pharmacology II-PR
	After the successful completion of the course, students should be able to:
BP507P.1	Define various terminology used in pharmacology
BP507P.2	Identify the pharmacological actions of drugs on the tissues
BP507P.3	Identify the unknown concentration of a drugs on the animal model
BP507P.4	Compare the potency of standard with the test compound
BP507P.5	Demonstrate the animal model or bioassay method by using stimulated softwares
BP504T	Pharmacognosy and Phytochemistry-II-TH
	After the successful completion of the course, students should be able to:
BP504T.1	Define Primary metabolites. Explain about shickmic acid path way .
BP504T.2	Explain about biogenesis of Atropine and Morphine.
BP504T.3	List out factors effecting tracer technique .
BP504T.4	Define Alkaloids and glycosides with extraction procedure .
BP504T.5	Define tannins and resins
BP508P	Pharmacognosy and Phytochemistry-II-PR
	After the successful completion of the course, students should be able to:
BP508P.1	Identify crude drugs by morphological and microscopical characteristics
BP508P.2	Isolate phytoconstituents from crude drugs
BP508P.3	Perform Paper and Thin Layer Chromatography



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BP508P.4	Isolate and analyse volatile oils
BP508P.5	Carryout chemical tests for the identification of unorganized crude drugs
BP505T	Pharmaceutical Jurisprudence-TH
	After the successful completion of the course, students should be able to:
BP505T.1	Explain the importance of code of pharmaceutical ethics
BP505T.2	Recognize the provisions of acts pertaining to drugs and cosmetics
BP505T.3	Explain the latest amendments with respect to DPCO and Patent and design act
BP505T.4	Discuss the concepts of price fixation of pharmaceutical products
BP505T.5	Summarize the Pharmaceutical Acts and Laws and their implications in the development and marketing of pharmaceuticals
BP505T.6	Analyze the labeling requirements of scheduled and non scheduled formulations

Third Year



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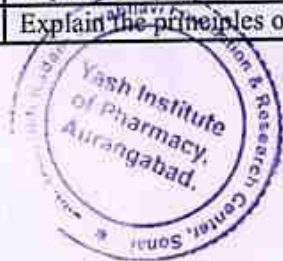
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6th Semester

BP601T	Medicinal Chemistry III-TH
	After the successful completion of the course, students should be able to:
BP601T.1	Describe the chemistry of drugs with respect to their pharmacological activity.
BP601T.2	Discuss the drug metabolic pathways, adverse effects and therapeutic value of drugs.
BP601T.3	Explain the physicochemical properties and pharmacokinetic properties of the drugs
BP601T.4	Explain the structural activity relationship of different class of drugs.
BP601T.5	Examine the chemical synthesis of various drugs
BP602T	Pharmacology III-TH
	After the successful completion of the course, students should be able to:
BP602T.1	Classify drugs based on their therapeutic utility
BP602T.2	Explain the pharmacology of drugs
BP602T.3	Explain the principles of toxicology and treatment of poisoning



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BP602T.4	Discuss the significance of biological clock in diseases and chronotherapy
BP602T.5	Discuss drug mechanisms and their relevance in the treatment of diseases and poisoning
BP603T	Herbal Drug Technology-TH
	After the successful completion of the course, students should be able to:
BP603.1	Illustrate WHO guide lines for standardisation of herbal drugs .
BP603.2	Explain and evaluate about formulation of herbal shampoos.
BP603.3	Demonstrate about Nutraceuticals with classification .
BP603.4	Define plant tissue culture with applications .
BP603.5	Ensure about formulation of herbal syrups .
BP604T	Biopharmaceutics and Pharmacokinetics-TH
	After the successful completion of the course, students should be able to:
BP604T.1	Understand the passage of drugs through the body; ADME.
BP604T.2	Explain the biopharmaceutical factors associated with each administration route.
BP604T.3	Assess the absolute and relative bioavailability and bioequivalence of drugs from different dosage forms using either plasma or urine data.
BP604T.4	Describe the different pharmacokinetic models.
BP604T.5	Evaluate and estimate drug changes in the body by using pharmacokinetic models.
BP604T.6	Analyze the pharmacokinetic parameters influencing drug dosing.
BP605T	Pharmaceutical Biotechnology-TH
	After the successful completion of the course, students should be able to:
BP605T.1	Describe the applications of immobilized enzymes and microbes in Pharmaceutical industries
BP605T.2	Explain the aspects of genetic engineering in relation to production of pharmaceuticals
BP605T.3	Illustrate the applications of Recombinant DNA technology
BP605T.4	Explain the process of production of products by fermentation
BP605T.5	Discuss the significance of immunology and monoclonal antibodies in Pharmaceutical Sciences
BP605T.6	Identify the market samples containing biotechnological products
BP606T	Quality Assurance-TH
	After the successful completion of the course, students should be able to:
BP606T.1	Understand the c GMP aspects in a pharmaceutical industry.




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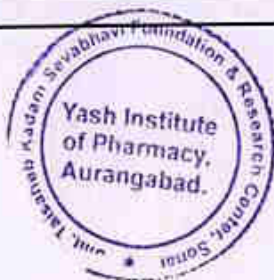
BP606T.2	Appreciate the importance and Construct the documentation.
BP606T.3	Develop Knowledge and understand the scope of quality certifications applicable to Pharmaceutical industry
BP606T.4	Develop basic knowledge and understand the responsibilities of QA & QC departments.
BP606T.5	Develop basic knowledge Manufacturing operations and controls.
BP607P	Medicinal Chemistry III PR
	After the successful completion of the course, students should be able to:
BP607P.1	Explain the physicochemical properties of drugs using drug design software.
BP607P.2	Draw chemical structures and reactions by Chem draw software.
BP607P.3	Analyze the purity of medicinal compounds.
BP607P.4	Prepare medicinally important compounds / intermediates.
BP608P	Pharmacology-III-PR
	After the successful completion of the course, students should be able to:
BP608P.1	Calculate doses for laboratory animals
BP608P.2	Perform toxicity studies following standard guidelines
BP608P.3	Estimate biochemical parameters in body fluids
BP608P.4	Demonstrate effect of drugs using computer models
BP608P.5	Apply statistical methods for interpretation of experimental results
BP609P	Herbal Drug Technology-PR
	After the successful completion of the course, students should be able to:
BP609P.1	Perform preliminary phytochemical screening of crude drugs.
BP609P.2	Incorporation of prepared and standardized extract in cosmetics formulations
BP609P.3	Analysis of herbal drugs as per recent Pharmacopoeias
BP609P.4	Determination of Aldehyde content
BP609P.5	Determination of phenolic content

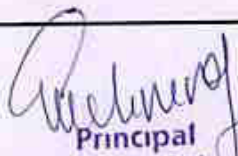



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Fourth Year 7th Semester

BP701T	Instrumental Methods of Analysis-TH
	After the successful completion of the course, students should be able to:
BP701T.1	Explain the importance of modern instrumentation in pharmaceutical analysis
BP701T.2	Describe the fundamental principles and applications of spectroscopic techniques Viz., UV- Visible, IR, FTIR, Flame photometry and Nephelo-turbidimetry
BP701T.3	Discuss the principle and applications of chromatographic and Electrophoretic techniques
BP701T.4	Identify appropriate instrumental techniques for the analysis of drugs in bulk or in various dosage forms.

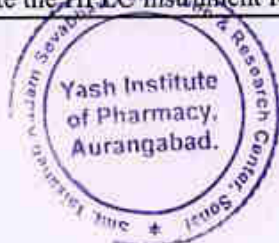


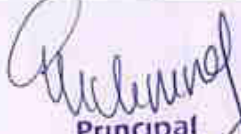

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BP702T	Industrial Pharmacy II -TH
	After the successful completion of the course, students should be able to:
BP702T.1	Manage the scale up process in pharmaceutical industry.
BP702T.2	Assist in technology transfer.
BP702T.3	Critically examine and evaluate scientific data and conclusions intended for regulatory review
BP702T.4	Enable improvement of the regulatory environment by implementing and upholding good regulatory practice
BP703T	Pharmacy Practice -TH
	After the successful completion of the course, students should be able to:
BP703T.1	Know the business and professional practice management skills in community pharmacy
BP703T.2	Conduct medication history interview and provide patient counseling
BP703T.3	Identify and resolve various prescription related problems
BP703T.4	Identify, categorize, assess and report Adverse Drug Reactions
BP703T.5	Answer drug and poison information queries
BP703T.6	Interpret clinical laboratory test(s) for specific diseases.
BP704T	Novel Drug Delivery System-TH
	After the successful completion of the course, students should be able to:
BP704T.1	Understand the concepts and applications of Novel Drug Delivery Systems.
BP704T.2	Apply knowledge in developing various novel formulations as per requirements.
BP704T.3	Analyze various evaluation parameters for oral, parenteral, topical etc. drug delivery systems.
BP704T.4	Formulate industrially feasible, cost effective strategy for development of new dosage forms.
BP705P	Instrumental Methods of Analysis-PR
	After the successful completion of the course, students should be able to:
BP705P.1	Handling of analytical Instrument for analyzing the compounds qualitatively and quantitatively such as fluorimeter, flame photometer, spectrophotometer, nephelo-turbidity meter etc.
BP705P.2	Apply separation techniques for separation and analysis of the compounds such as Paper chromatography and TLC
BP705P.3	Prepare dilutions and estimate the amount of drug by uv methods
BP705P.4	Demonstrate the HPLC instrument for analysis of some drugs.




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BP705P.5	Perform assay of different dosage form for purity.
BP706PS	Practice School
	After the successful completion of the course, students should be able to:
BP706PS. 1	Perform different tasks relevant to chosen area in domain of interest.
BP706PS. 2	Apply knowledge to solve specific problems from domain of interest.
BP706PS. 3	Perform literature review on chosen topic of interest.
BP706PS. 4	Understand how to write abstract, introduction, methodology, results and discussion and conclusions of scientific paper.
BP706PS. 5	Discuss concept of plagiarism check, copyright and value of ethics in research.



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Fourth Year 8th Semester

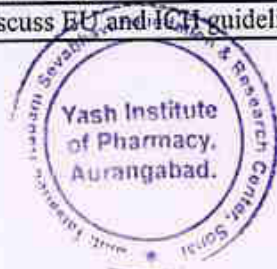


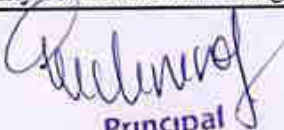
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BP801T	Biostatistics and Research Methodology
	After the successful completion of the course, students should be able to:
BP801T.1	Understand the basic aspects of statistics such as central tendency and dispersion
BP801T.2	Use correlation, regression and probability while analyzing data by statistical methods.
BP801T.3	Explain the need of research, research designs and their applications and to explain methodological designs.
BP801T.4	Assess the need of regression modeling and to build up the ability to use various statistical problems.
BP801T.5	Elaborate design and analysis of experiments and response surface methodology using Design Expert software.
BP801T.6	Perform various parametric and non parametric statistical tests and to draw graphs and plots based on type of data using MS-Excel, SPSS or similar software.
BP802T	Social and Preventive Pharmacy
	After the successful completion of the course, students should be able to:
BP802T.1	Explain the concepts of health, disease, hygiene and socio cultural factors related to health
BP802T.2	Explain the concepts of prevention, control and cause of diseases.
BP802T.3	Analyse the different national health intervention programmes
BP802T.4	Describe the Objectives:, functioning and importance of national programmes for prevention and control of diseases.
BP802T.5	Discuss the types of community services offered in urban and rural areas.
BP802T.6	Illustrate the general measures of prevention and control of infections and diseases.
BP806ET	Quality control and Standardization of Herbals
	After the successful completion of the course, students should be able to:
BP806ET.1	Explain the WHO guidelines for herbal drugs
BP806ET.2	Describe the quality assurance processes in herbal drug industry
BP806ET.3	Describe the regulatory approval processes and their registration in Indian and International markets
BP806ET.4	Discuss the application of chromatographic techniques in standardization of herbal drugs
BP806ET.5	Discuss ICH and USP guidelines for quality control of herbal drugs




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BP806ET.6	Prepare the documents for New Drug Application and herbal drugs export registration
BP809ET	Cosmetic Science
	After the successful completion of the course, students should be able to:
BP809ET.1	Classify and describe key components used in different cosmetics and cosmeceuticals.
BP809ET.2	Recognize the role of the ingredients and herbs used
BP809ET.3	Advanced current technologies used for manufacturing the cosmetics at lab scale and industry scale
BP809ET.4	Justify the need for skin care and sun screen products
BP809ET.5	Design and develop cosmetics and cosmeceuticals with desired Safety, sensory characteristics, stability, and efficacy
BP813PW	Project Work
	After the successful completion of the course, students should be able to:
BP813PW.1	Work in team and undertake a project in the area of Pharmacy
BP813PW.2	Apply concepts of pharmaceutical sciences for executing the project
BP813PW.3	Apply appropriate research methodology while formulating a project
BP813PW.4	Define specifications, synthesize, analyse, develop and evaluate a project
BP813PW.5	Present, exhibit and document the project work
BP813PW.6	Develop a project report



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