DEVAKI AMMA MEMORIAL COLLEGE OF PHARMACY

Chelembra, PO. Pulliparamba, Malappuram Dt., Kerala - 673634.
Phone: 0483-2891623, Fax: 2891623, E mail: devakiammapharmacycollege@gmail.com
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COURSE OUTCOMES

- **COURSE OUTCOME OF B PHARM**
- **COURSE OUTCOME OF PHARM D**
- **COURSE OUTCOME OF M PHARM**

PHARMACEUTICAL ANALYSIS

PHARMACEUTICS

PHARMACEUTICAL CHEMISTRY

PHARMACOLOGY

MAPPING

- **MAPPING OF B PHARM**
- **MAPPING OF PHARM D**
- **MAPPING OF M PHARM**

PHARMACEUTICAL ANALYSIS

PHARMACEUTICS

PHARMACEUTICAL CHEMISTRY

PHARMACOLOGY

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COURSE OUTCOME OF B PHARM

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COURSE OUTCOMES		
FIRST SEMESTER		
BP 101T	**HUMAN ANATOMY AND PHYSIOLOGY T**	
	CO1	Explain the gross morphology, structure and functions of various organs of the human body.
	CO2	Describe the various homeostatic mechanisms and their imbalances
	CO3	Identify the various tissues and organs of different systems of human body.
	CO4	To explain the physiology of special senses and nervous system**.**
	CO5	Understand the coordinated working pattern of different organs of each system.
BP102T	**PHARMACEUTICAL ANALYSIS I T**	
	CO1	Understand the basic concepts of primary and secondary standards, describe the significance of precision and accuracy in pharmaceutical analysis.
	CO2	Describe the sources of errors commonly developed drug analyses and methods to minimize them.
	CO3	Explain concentration, calculation of a solution, its preparation, standardization and its storage conditions.
	CO4	Describes the principles, concepts & applications of volumetric and gravimetric analysis of pharmaceuticals and analyze problems based on the volumetric principles.
	CO5	Discuss the techniques of conductometry, potentiometry and polarography and their applications in the analysis of pharmaceuticals.
BP103T	**PHARMACEUTICS I – T**	
	CO1	Explain history of profession of Pharmacy in India & Pharmacopeia and its development.
	CO2	Learn parts and handling of prescription, posology & dose calculation of drug in children
	CO3	Understand basic requirements, formulation and evaluation of conventional dosage forms like powder, liquid (monophasic& biphasic) and semi solid dosages forms.
	CO4	To understand about pharmaceutical incompatibility and methods to overcome
	CO5	Understand the mechanisms and factors influencing dermal penetration of drugs
BP104T	**PHARMACEUTICAL INORGANIC CHEMISTRY T**	
	CO1	To know the official standard reference book (IP), sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals.
	CO2	To understand the basic concepts of buffers and isotonic solutions, adjustment of tonicity and functions of major physiological ions and electrolytes.
	CO3	To understand the medicinal and pharmaceutical importance of inorganic compounds.
	CO4	To understand the principles and procedures of analysis of selected compounds, will get general idea about analysis of pharmaceuticals.
	CO5	To study regarding the application of inorganic radio-pharmaceuticals and study the importance in diagnosing, preventing and curing diseases by radio-pharmaceuticals.
BP107P	**HUMAN ANATOMY AND PHYSIOLOGY P**	
	CO1	Understand the normal anatomical peculiarities of tissue
	CO2	Record the normal physiologic constants like blood pressure, body temperature etc. for analyzing the homeostatic state of body.
	CO3	Analyze and interpret the pathological states associated with blood cells.

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	CO4	Correlate the anatomical features of bones in normal and bone anomalies.
	CO5	Correlate basic physiology with the pathophysiological outcomes that may be encountered in the clinical setting.
BP108P	**PHARMACEUTICAL ANALYSIS I P**	
	CO1	Get idea about limit test of chlorides, sulphates, iron.
	CO2	Constructs the fundamental methodology to prepare different strength of solutions.
	CO3	Acquire knowledge about standardization of different strength of solutions.
	CO4	Familiar with different assay techniques
	CO5	Acquire knowledge about the determination of normality by electro-analytical methods
BP109P	**PHARMACEUTICS I P**	
	CO1	Ability to work in the monophasic liquid dosage form manufacturing unit of pharmaceutical industry
	CO2	Abilty to work in the production unit of biphasic liquid dosage forms like suspension and emulsion in pharmaceutical industry.
	CO3	Students are able to council a patient regarding direction, precaution and usage of prescribed medicine.
	CO4	Students will have the knowledge of hospital pharmacy dispensing and storage.
	CO5	Students are able to work in semisolid dosage form manufacturing unit of pharmaceutical industry
BP110P	**PHARMACEUTICAL INORGANIC CHEMISTRY P**	
	CO1	To gain a comprehensive understanding of the principles, significance, and applications of limit tests in pharmaceutical inorganic chemistry. Familiarize with the regulatory standards and guidelines.
	CO2	To equip students with the knowledge, skills, and ethical awareness necessary to perform and interpret identification tests of anions and cations effectively in pharmaceutical inorganic chemistry, contributing to the overall quality and safety of pharmaceutical products.
	CO3	To gain a comprehensive understanding of purity concepts in pharmaceutical inorganic chemistry, including the importance of purity in drug substances and drug products.
	CO4	To acquire proficiency in various synthetic methods and techniques used for the preparation of medicinally important inorganic compounds, including coordination compounds, metal complexes, and inorganic salts.
	CO5	To develop a comprehensive understanding of various assay techniques used in the analysis of pharmaceuticals.
	SECOND SEMESTER	
BP201T	CO1	**HUMAN ANATOMY AND PHYSIOLOGY II T**
	CO2	Understand the anatomy and physiology and disorders of digestive system
	CO3	Understand the anatomy and homeostatic mechanisms and altered physiology of nervous system.
	CO4	Understand the homeostatic mechanisms and altered physiology of respiratory and urinary system

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	CO5	Understand the homeostatic mechanisms and altered physiology of endocrine system.
BP202T	**PHARMACEUTICAL ORGANIC CHEMISTRY I T**	
	CO1	To equip students with a comprehensive understanding and practical skills in the fundamental concepts of organic chemistry.
	CO2	To equip students with a comprehensive understanding and practical skills in the fundamental concepts of alkanes, alkenes, and conjugated dienes in organic chemistry.
	CO3	To provide students with a comprehensive understanding and practical skills related to the chemistry of alkyl halides.
	CO4	To equip students with a comprehensive understanding and practical skills related to the chemistry of carbonyl compounds.
	CO5	To equip students with a comprehensive understanding and practical skills related to the chemistry of aliphatic amines and carboxylic acids
BP203T	**BIOCHEMISTRY T**	
	CO1	To understand the catalytic activity of enzyme and importance of isoenzyme in diagnosis of diseases
	CO2	To understand the concept of bio molecules and also the concept of bioenergetics
	CO3	To understand the metabolic process of carbohydrates and its metabolic disorder and biological oxidation
	CO4	To understand the metabolic process of amino acids and lipids and its metabolic disorder
	CO5	To understand the genetic organization and functions of genome and synthesis of RNA and proteins
BP204T	**PATHOPHYSIOLOGY T**	
	CO1	Describe the etiology of the selected diseases
	CO2	Describe the pathophysiology of the selected diseases
	CO3	Relevant aspect of pathology of various conditions
	CO4	Name the signs and symptoms of the diseases
	CO5	Mention the complications of the diseases
BP206T	**ENVIRONMENTAL SCIENCES T**	
	CO1	Create the awareness about environmental problems like air pollution, water pollution and soil pollution
	CO2	Impart basic knowledge about environment, natural resources and its allied problems
	CO3	Develop an attitude of concern for the environment and strive to attain harmony with nature - Ecosystems
	CO4	Motivate to participate in environment protection and environment improvement and role of individual in conservation of natural resources
	CO5	Acquire skills in identifying renewable and nonrenewable sources and solving environmental problems
BP207P	**HUMAN ANATOMY AND PHYSIOLOGY II P**	
	CO1	Students will gain knowledge on integumentary and special senses using specimen, models, etc.

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	CO2	Students will be able to determine body temperature BMI, lung volumes and capacitances.
	CO3	To demonstrate the reflex activity and analyse results
	CO4	Examination of functioning and status of various senses viz olfactory nerve, vision acuity testing etc.
	CO5	Able to identify and describe various histological slides
BP208P	**PHARMACEUTICAL ORGANIC CHEMISTRY I P**	
	CO1	To provide students with a comprehensive understanding and practical skills in conducting preliminary tests for organic compounds.
	CO2	To provide students with a comprehensive understanding and practical skills in conducting functional group tests.
	CO3	To provide students with a comprehensive understanding and practical skills related to the melting and boiling points of organic compounds.
	CO4	To provide students with a comprehensive understanding and practical skills related to the identification of unknown organic compounds.
	CO5	To provide students with a comprehensive understanding and practical skills in preparing derivatives of organic compounds.
BP209P		**BIOCHEMISTRY P**
	CO1	To understand the qualitative analysis of carbohydrates, proteins
	CO2	To understand the qualitative analysis of urine for abnormal constituents
	CO3	To understand the quantitative analysis of reducing sugars, total protein, creatinine
	CO4	To understand the quantitative analysis of serum total cholesterol
	CO5	Ability to determine the enzymatic action
	THIRD SEMESTER	
BP301T	**PHARMACEUTICAL ORGANIC CHEMISTRY II T**	
	CO1	To understand about the term aromaticity, Resonance, aromatic compounds and their reactions.
	CO2	To analyze the reactions of phenols and aromatic amines
	CO3	To understand about the quality and purity of fats and oils.
	CO4	To understand the nature and reactions of fused heterocyclic systems.
	CO5	Understand the stability and reactions of cyclo alkanes.
BP302T	**PHYSICAL PHARMACEUTICS I T**	
	CO1	Student will be able to understand solubility, dissolution and diffusion principles and its applications in biological system for improving drug action.
	CO2	Student should be able to Demonstrate use of various physicochemical properties of drug molecule in the designing and evaluation of dosage form. Student will be able to Appreciate physicochemical properties in formulation design and research
	CO3	To understand the derived properties of powders like porosity, density and flow property and the fundamental properties of drug like particle size distribution, shape and surface

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		area_ This will help to study the impact of powder properties on the design of dosage form and the influence of these properties on the disintegration rate, dissolution and absorption.
	CO4	Student will be able to understand the different types of complexes which the drugs form and the properties of such complexes
	CO5	Student will be able to know about Ph scale and determination also different buffers and isotonic solution in biological system
BP303T		**PHARMACEUTICAL MICROBIOLOGY T**
	CO1	To understand growth factors and nutritional requirements for growth of microbes
	CO2	To understand the staining techniques and biochemical characteristics of microorganisms
	CO3	To understand and apply principle of aseptic transfer
	CO4	To understand sterility testing and microbial assay of antibiotics
	CO5	To understand sterilization techniques
BP304T		**PHARMACEUTICAL ENGINEERING T**
	CO1	Understand about various unit operations and its importance in pharmaceutical industry
	CO2	Know the material handling techniques by using various devices
	CO3	Understand various processes involved in pharmaceutical manufacturing process
	CO4	Knowledge of various materials used for the pharmaceutical plant construction
	CO5	Understand about types and preventive methods used for corrosion control in pharmaceutical industries
BP305P		**PHARMACEUTICAL ORGANIC CHEMISTRY II P**
	CO1	Experiments involving laboratory technique involves recrystallisation, Steam distillation.
	CO2	Determination of following analytical constants of fats and oils.
	CO3	Preparation of organic compounds by acylation reaction
	CO4	Preparation of organic compounds by halogenations (bromination) reactions.
	CO5	Preparation of organic compounds by nitration reaction.
BP306P		**PHYSICAL PHARMACEUTICS I P**
	CO1	To Understand the Determination of Solubility of a Drug at Room Temperature.
	CO2	To Get the Knowledge about the Pka value by Half Neutralization / Henderson Hassel Batch Equation.
	CO3	To Know about the Determination of Partition Coefficient of Different Drugs.
	CO4	Know about the Determination of Particle Size and Particle Size Distribution by Different Methods
	CO5	To Understand the Preformulation Studies and Porosity of Drugs
BP307P		**PHARMACEUTICAL MICROBIOLOGY P**
	CO1	Students will acquire knowledge about the preparation of various culture media, distribution of micro-organisms and sub culturing of various bacteria.
	CO2	Students will train to perform aseptic transfer, streak plate method, pour plate method and spread plate method.
	CO3	Students will able to identify the motility characters of a given bacteria by hanging drop method.

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	CO4	Students will identify the characteristics of bacteria by performing various staining techniques.
	CO5	Students will find various biochemical reactions mediated by microorganisms. Students will demonstrate the sterility testing and microbial sensitivity tests
BP 308P		**PHARMACEUTICAL ENGINEERING P**
	CO1	Understand about particle size determination by beaker decantation method and determination of the overall heat transfer coefficient
	CO2	Know about the construction of drying rate curves, determination of moisture content and determination of humidity of air
	CO3	Understand the construction, working and application of pharmaceutical machinery such as rotary tablet machine, fluidized bed coater, fluid energy mill, de- humidifier
	CO4	Know about the size analysis by sieving and understand the various aspects of size reduction.
	CO5	Know about the factors affecting rate of filtration and evaporation and calculation of the mixing index by using double cone blender.
	FOURTH SEMESTER	
BP401T	**PHARMACEUTICAL ORGANIC CHEMISTRY III T**	
	CO1	To understand about the stereo chemical nature of drugs and their reactions.
	CO2	To study the nature and reactions of chemical compounds.
	CO3	To understand the nature and chemical reactions of heterocyclic compounds.
	CO4	To study the nature and reactions of heterocyclic compounds
	CO5	To study the synthetic importance of named reactions.
BP402T		**MEDICINAL CHEMISTRY I T**
	CO1	To understand the principles of medicinal chemistry, drug metabolic pathways, adverse effect and therapeutic value of drugs
	CO2	To acquire the knowledge about the relationship between the biological activity and Physiochemical properties of therapeutic agents
	CO3	Demonstrate the synthesis of some important class of drug
	CO4	Demonstrate the chemistry, classification, SAR and uses of different class of drugs with respect of pharmacological acivity.
	CO5	To emphasizes on chemical synthesis of important drugs under each class.
BP403T		**PHYSICAL PHARMACEUTICS II T**
	CO1	Know the principles of chemical kinetics & to use them in assigning expiry date for formulation and to know how various factors influence the decomposition of medicinal agents and also understand the principle involved in stabilization of drugs
	CO2	Understand the applications of the knowledge of rheology in various steps of product formulation and development on industrial scale
	CO3	Understand the different types of colloids which the drugs form and the properties of such colloids
	CO4	Learn regarding the classification, formulation and evaluation of coarse dispersions like suspensions and emulsions

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	CO5	Learn about the different types of surfactants and their role in pharmacy
BP404T		**PHARMACOLOGY I T**
	CO1	Understand about the basic concepts and principles of pharmacology like routes of drug administration, pharmacokinetics, pharmacodynamics, drug allergy adverse drug reaction and drug interaction
	CO2	Explain how drugs toxins chemicals act in our body at organ system/sub cellular/macromolecular levels (moa)
	CO3	Know the importance of selection right drug through concept like essential drug list, pharmacogenetics, chronopharmacology, recptor concept
	CO4	Explain the entire pharmacological aspects of drugs (such as classification, mechanism of action, ADR, uses etc..) acting on ANS and CNS
	CO5	Use knowledge gained through understanding of pharmacology of drugs and apply it in the dispensing of drugs and thus helps in the treatment of various diseases affecting the body systems and thus improve the general health of the community (pharmacotherapeutics)
BP405T		**PHARMACOGNOSY AND PHYTOCHEMISTRY I T**
	CO1	Understand the sources of crude drugs, knowledge of classification of drugs and evaluate the quality of drugs that are obtained from natural source.
	CO2	Knowledge of cultivation of medicinal plants, applying modern scientific techniques in plant cultivation, study of genetic aspects of medicinal plants and understand the conservation of endangered species.
	CO3	Knowledge about plant tissue culture, its requirements and methods. Applying plant tissue culture techniques in obtaining medicinal products. Understand the concept of edible vaccines.
	CO4	Knowledge and understanding the concepts of various traditional systems of medicine. Study of plant secondary metabolites and their medicinal importance.
	CO5	Knowledge of various plant and natural products like fibres, hallucinogens, allergens, carbohydrates, proteins, lipids, marine substances and their applications.
BP406P		**MEDICINAL CHEMISTRY I P**
	CO1	To create medicinally important compounds or intermediate by conventional methods
	CO2	To evaluate the purity of the drugs by using by different assay methods.
	CO3	To evaluate the partition coefficient medicinal methods
	CO4	To create the medicinally important compounds or intermediates by microwave irradiation methods
	CO5	To demonstrate the synthesis of some medicinally important class of drug
BP407P		**PHYSICAL PHARMACEUTICS II P**
	CO1	Determine the surface tension and HLB value.
	CO2	Determine the critical miscellar concentration of surfactants.
	CO3	Determine the viscosity of liquids
	CO4	Evaluate the suspending agents
	CO5	Determine the rate and order of reaction
BP408P		**PHARMACOLOGY I P**

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	CO1	Understand about the basic instruments used in experimental pharmacology and their assembling and uses
	CO2	Knowing about the commonly used laboratory animals and how to maintain them. They also learn about the routes of drug administration in experimental animals as well as how to collect blood from animals used proper methods.
	CO3	Learn and understand the common experiments performed in laboratory rats,frogs,rabbits etc and the step by step procedures of conducting the experiments using computer software.
	CO4	Integrate and utilize the knowledge gained in the theory couse by applying sessions using various experiments on isolated tissue experiments. (chicken ileum)
	CO5	Use basic formulas and methods in experimental pharmacology and perform dose calculation experiments.
BP409P		**PHARMACOGNOSY AND PHYTOCHEMISTRY I P**
	CO1	Knowledge of analysis, estimation, isolation, separation & purification of phytoconstituents of pharmaceutical significance from various sources of crude drugs.
	CO2	To study the physiochemical properties of natural drugs.
	CO3	To know about the quantitative microscopic evaluation of herbal drugs.
	CO4	To study the evaluation parameters of phytoconstituents.
	CO5	To know about the quantitative microscopic evaluation of herbal drugs
		FIFTH SEMESTER
BP501T		**MEDICINAL CHEMISTRY II T**
	CO1	Knowledge on the structure, chemistry and therapeutic value of drugs
	CO2	Understand the chemistry of drugs with respect to their pharmacological activity
	CO3	Understand the mechanism of action and therapeutic value of drugs
	CO4	Know the Structure Activity Relationship of different class of drugs.
	CO5	Study the chemical synthesis of selected drugs and study the functions of certain hormones
BP502T		**FORMULATIVE PHARMACY T**
	CO1	Gain knowledge about the preformulation studies of different pharmaceutical dosage forms.
	CO2	Know various considerations in formulation, types, excipients, methods and equipment's for manufacture and evaluation of different conventional dosage forms.
	CO3	Attain the understanding of formulation, production facilities, essential requirements, quality control of Sterile dosage forms.
	CO4	Learn about the packaging materials used in pharmaceutical industries
	CO5	Understand the basic principles of formulation of cosmetic products.
BP503T		**PHARMACOLOGY II T**
	CO1	Understand about the basic principles of pharmacological bioassays and the entire drug discovery processes including clinical trials
	CO2	Explain how drugs, toxins, chemicals act in our body at organ system/ sub cellular /macromolecular levels. (i.e mechanisms of action)
	CO3	Explain the entire pharmacological aspects of drugs (such as classifications, mechanisms of action, adverse drug, uses etc) acting on cardiovascular system

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	CO4	Explain the entire pharmacological aspects of drugs (such as classifications, mechanisms of action, adverse drug, uses etc) acting on endocrine system and autocoids
	CO5	Employ the knowledge gained through understanding of the pharmacology of drugs and apply it in the dispensing of drugs and help in the treatment of various diseases affecting the body systems and thus improve the general health of the community.
BP504T		**PHARMACOGNOSY AND PHYTOCHEMISTRY II T**
	CO1	To understand about basic metabolic pathways which are involved in the formation of different secondary metabolites.
	CO2	To understand and analyse the source, phytochemistry, composition, therapeutic and commercial utilization of various medicinally important constituents present in crude drug.
	CO3	To create knowledge about industrial production, estimation and utilization of therapeutically useful phytoconstituents.
	CO4	To understand and apply knowledge about modern extraction techniques.
	CO5	characterization and identification/quality control of herbal drugs through spectroscopy, chromatography and electrophoresis for isolation, purification and identification of crude drugs
BP505T		**PHARMACEUTICAL JURISPRUDENCE T**
	CO1	To understand pharmaceutical legislations and its implications
	CO2	To gain knowledge on various administration of act in India
	CO3	To understand Pharmacy council of India
	CO4	To understand the important of manufacturing, import and sale of drugs
	CO5	To understand code of ethics during pharmacy practice.
BP506P		**FORMULATIVE PHARMACY P**
	CO1	To get knowledge about the Preformulation studies and formulation and evaluation of different types of tablets by various granulation techniques, Coating of tablets and their evaluation.
	CO2	To understand the formulation and evaluation of small volume Parenterals & ophthalmic products.
	CO3	To understand the formulation of cosmetic preparations
	CO4	To get the idea about the quality of various packaging materials by the evaluation study.
	CO5	To have an idea in the formulation and evaluation of liquid dosage forms.
BP507P		**PHARMACOLOGY II P**
	CO1	Understand about the isolation of different organs/tissues from the laboratory animals by simulated experiments
	CO2	Understand the various receptor actions using isolated preparation
	CO3	Learn and understand the common experiments performrd in laboratory rats, frogs,rabbits etc and the step by step procedures of conducting the experiments using computer softwsre.
	CO4	Integrate and utilize the knowledge gained in the theory couse by applying sessions using various experiments on isolated tissue experiments. (chicken ileum)
	CO5	Use basic formulas and methods in experimental pharmacology and perform dose calculation experiments.

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BP508P		**PHARMACOGNOSY AND PHYTOCHEMISTRY II P**
	CO1	To understand and analyseanalyze the extraction and identification of therapeutically useful phytoconstituents.
	CO2	To evaluate macroscopic and microscopic diagnostic characters of crude drug.
	CO3	Isolate and identify volatile oils from crude drugs
	CO4	To understand and analyze separation and purification of phytoconstituents by chromatographic techniques.
	CO5	To understand and perform the chemical analysis and quality control of the unorganized crude drugs as per regulatory guidelines.
		SIXTH SEMESTER
BP601T		**MEDICINAL CHEMISTRY III T**
	CO1	To know the importance of SAR of drugs
	CO2	To understand the chemistry of drugs with respect to their biological activity.
	CO3	To understand the metabolism, adverse effects and therapeutic value of drugs.
	CO4	Understand the importance of drug design and different techniques of drug design
	CO5	Therapeutic uses of important drugs
BP602T		**PHARMACOLOGY III T**
	CO1	Able to be capable of explaining various respiratory tract diseases and GI tract diseases and pharmacology drugs used to treat them.
	CO2	Understand the basics and principles of chemotherapy and pharmacology of antibiotics such as sulphonamides, beta lactams, macrolides, quinolones, tetracyclines and aminoglycosides etc.
	CO3	Understand the chemotherapy of antituberculosis, antileprotic antifungal, antiviral, anthelmintics, antiamoebic and antimalarial etc.
	CO4	Understand the chemotherapy of UTI & STD, Malignancy and basics and drugs acting in immune systems such as immunostimulants & immunosuppressant.
	CO5	Able to be capable of explaining the concepts and approaches of gene transfer and stem cell therapy.
BP603T		**HERBAL DRUG TECHNOLOGY T**
	CO1	To understand about selection of herbs from its sources, good agricultural practices, processing and development of herbal medicinal products. Also to understand about Indian systems of medicines, formulation and standardization of medicines.
	CO2	Understand the importance and applications of nutraceuticals in healthcare and its market demand. Analyze herbal drug interactions and its importance in health care.
	CO3	To understand the sources and description of raw materials from herbs used in personal care products. Also learn about the use/application of herbal excipients in formulations and in novel dosage forms.
	CO4	To understand the evaluation and stability testing of herbal drugs as per WHO & ICH guidelines. Schedule Z& regulatory bodies of ASU drugs Also to explain about the patenting aspects of natural products
	CO5	To understand the scope and future prospects of herbal drug industries and research institutions in India. Understand GMP of Indian systems of medicines

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BP604T		**BIOPHARMACEUTICS AND PHARMACOKINETICS T**
	CO1	Describe the concept behind the biopharmaceutics, pharmacokinetics
	CO2	Use plasma data and deprive the pharmacokinetic parameters to describe the process of drug absorption, distribution, metabolism and elimination
	CO3	Design and evaluate dosage regimens of the drugs using pharmacokinetic and biopharmaceutic parameters
	CO4	Critically evaluate biopharmaceutic studies involving drug product equivalency and assess the reason for poor bioavailability of drug and methods to overcome the poor bioavailability
	CO5	Detect potential clinical pharmacokinetic problems and apply basic pharmacokinetic principles to solve them.
BP605T		**PHARMACEUTICAL BIOTECHNOLOGY T**
	CO1	To explain the importance of immobilized enzymes in the microbial productions like fermentation, antibiotics
	CO2	To identify the requisites for recombinant technology and describe its applications in the field of Biotechnology
	CO3	To comment on the production of monoclonal antibodies and its utility in pharmaceuticals
	CO4	To explain the fermentation process and its applicability in the production of antibiotics, enzymes
	CO5	To study Collection processing and storage of blood products
BP606T		**QUALITY ASSURANCE T**
	CO1	Demonstrate the importance of quality in pharmaceutical products and importance of good practices and regulatory affairs such as GMP, GLP, TQM etc.
	CO2	Understand the activities and responsibilities of QA & QC departments.
	CO3	Understand the scope of quality certifications such as ICH, ISO and NABL.
	CO4	Explain about validation and calibration and its importance in QA and QC.
	CO5	Recognize the various aspects of documentation in pharmaceutical industry.
BP607P		**MEDICINAL CHEMISTRY III P**
	CO1	An ability to prepare different classes of drugs and intermediates
	CO2	An ability to carry out the assay of drugs
	CO3	To demonstrate the preparation of medicinally important compounds or intermediates by Microwave irradiation technique
	CO4	Study of drawing structures and reactions using chemdraw
	CO5	Ability to determine the physicochemical properties of drug using drug design software
BP608P		**PHARMACOLOGY III P**
	CO1	Able to perform the drugs on the antiallergic activity (by mast stabilization) / anti-ulcer activity (pylorus ligation and NSAID induced) in rat models.
	CO2	Able to perform serum biochemical parameters by using semi auto analyzer
	CO3	Able to perform muscle relaxant, locomotor, anticonvulsant and anxiolytic activity by Animal Simulator Ex-Pharm software
	CO4	Able to perform anti-inflammatory (carrageenan induced), and analgesic activity by both central and peripheral methods through Animal Simulator Ex-Pharm software

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	CO5	Able to apply Biostatistics methods in experimental pharmacology (student's t test, ANOVA, Chi square test, Wilcoxon Signed Rank test
BP609P		**HERBAL DRUG TECHNOLOGY P**
	CO1	To remember and understand to perform the preliminary phytochemical analysis of crude drugs.
	CO2	To analyze the phytochemicals quantitatively in crude drug extracts, ayurvedic formulations etc.
	CO3	To formulate and standardize herbal preparations for external/internal applications as per regulatory guidelines
	CO4	To understand and perform monograph analysis of herbal drugs.
	CO5	To understand and perform fixed oils as per pharmacopoeia.
		SEVENTH SEMESTER
BP701T		**INSTRUMENTAL METHODS OF ANALYSIS – THEORY**
	CO1	Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis.
	CO2	Demonstrate and understanding of theory and application of most common methods of pharmaceutical analysis in research, academic and industry.
	CO3	Apply the principles of chromatography in qualitative and quantitative analysis of pharmaceuticals in research and industrial perspective.
	CO4	Utilize the knowledge of modern chromatographic technique for the analysis of pharmaceuticals in research and industrial aspects.
	CO5	Demonstrate the scope of various analytical techniques for the reliable analytical testing and documentation.
BP702T		**INDUSTRIAL PHARMACY T**
	CO1	Know the basic knowledge about the process of pilot plant and scale up techniques of various pharmaceutical dosage forms
	CO2	Understand the process of technology transfer from lab scale to commercial batch
	CO3	Understand the major regulatory requirements for a new drug approval process
	CO4	Know the knowledge about the Indian regulatory requirements, guidelines and certificates for a drug approval.
	CO5	Understand about the various hazards in pharmaceutical industries and methods to prevent the same.
BP703T		**PHARMACY PRACTICE T**
	CO1	To understand the structure and organization of hospital
	CO2	To apply knowledge on various drug distribution methods, pharmacy store management and inventory control in hospital
	CO3	To understand how to monitor drug therapy, assess adverse drug reactions and interpret laboratory results
	CO4	To evaluate medication history interview and counsel the patients and identify drug related problem
	CO5	To evaluate pharmaceutical care services and to appreciate the concept of rational drug therapy
BP704T		**NOVEL DRUG DELIVERY SYSTEM T**

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	CO1	Upon the completion of the course the student will be able to define the concept and principles of novel drug delivery system
	CO2	To describe the various types and approaches for development of novel drug delivery systems
	CO3	Explain the criteria for selection of drugs and polymers for the development of novel systems, their formulation and evaluation
	CO4	The student will be able to differentiate a novel drug delivery system from a conventional drug delivery system
	CO5	Create critical thinking and the student may be able to come out with new idea on development of new NDDS to overcome the drawbacks of current medication
BP705P		**INSTRUMENTAL METHODS OF ANALYSIS P**
	CO1	Illustrate the practical applications of instruments used in pharmaceutical research activities
	CO2	Design the analytical methods and evaluate the drug substance and formulation as per pharmacopoeia guidelines
	CO3	Utilize the theoretical skill in interpreting the qualitative and quantitative data in an effective way.
	CO4	Apply the knowledge and subject specific skill to progress in academic as well as industrial research field.
	CO5	Utilize various analytical methods for accessing the purity of formulations.
		EIGTH SEMESTER
BP801T		**BIOSTATISTICS AND RESEARCH METHODOLOGY**
	CO1	Understand the concept and basics of Research and apply this knowledge in their own research
	CO2	Understand different types of data and their analysis including the different graphical representations
	CO3	Know the knowledge about the different epidemiologic study designs and the basic concepts of clinical trials.
	CO4	Understand the possibilities of Biostatistics and hypothesis testing in research
	CO5	Understand how to write a thesis in proper way and different terms used in thesis writing
BP802T		**SOCIAL AND PREVENTIVE PHARMACY**
	CO1	Recognize the concepts and evaluation of public health and explain the general measures and strategies to be followed in social and preventive pharmacy.
	CO2	Illustrate socio cultural factors and its relation with health and the importance of nutrition, deficiencies and its prevention
	CO3	Identify avoidable habits for personal hygiene and health.
	CO4	Explain the principles on the prevention and control of communicable and non-communicable diseases.
	CO5	Recognize the community services in rural, urban and school health and to identify National health programs its objectives functioning and outcomes
BP803ET		**PHARMACEUTICAL MARKETING**
	CO1	Explain general concepts of marketing and its scope
	CO2	Learns about product decisions, product mix-up and product life cycle

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	CO3	Understand basic concepts of product promotions, determinants of promotional mix and promotional budget.
	CO4	To understand about pharmaceutical marketing channels and professional sales representative.
	CO5	Understand the methods and strategies of pricing and price management in pharma industry. Also, about emerging concept of marketing.
BP804ET		**PHARMACEUTICAL REGULATORY SCIENCE**
	CO1	Know about the process of drug discovery and development
	CO2	Know the regulatory authorities for the sale of pharmaceuticals
	CO3	Know the regulatory approval process
	CO4	Know the agencies governing the manufacture and sale of pharmaceuticals
	CO5	To know about the registration in Indian and international markets
BP805ET		**PHARMACOVIGILANCE**
	CO1	Learn about development of pharmacovigilance as a science, understand the national and global scenario of pharmacovigilance
	CO2	Develop the skills of classifying drugs, diseases and adverse drug reactions with the use of coding
	CO3	Various assessment methods that can be used to generate safety data and signal detection
	CO4	Learn to establish pharmacovigilance programme in an organization and necessary communications
	CO5	Understand the drug safety evaluation in special populations, vaccines and genetics
BP806ET		**QUALITY CONTROL AND STANDARDIZATION OF HERBS**
	CO1	Learn the basic tests for quality check of herbal materials. Understand WHO guidelines for quality control
	CO2	Knowledge of various guidelines for quality assurance of herbal cultivation, manufacturing and laboratory testing
	CO3	Knowledge of EU & ICH guidelines for quality evaluation. Research guidelines for safety and efficacy evaluation of herbals
	CO4	Learn the stability testing of herbals. Applying chromatographic techniques. New drug application
	CO5	Knowledge of various guidelines for quality assurance of herbal cultivation, manufacturing and laboratory testing
BP807ET		**COMPUTER AIDED DRUG DESIGNING**
	CO1	Design and discovery of lead molecules
	CO2	The role of drug design in drug discovery process
	CO3	The concept of QSAR and docking
	CO4	Various strategies to develop new drug like molecules.
	CO5	The design of new drug molecules using molecular modelling software
BP808ET		**CELL AND MOLECULAR BIOLOGY**
	CO1	Summarize cell and molecular biology history.

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	CO3	Describe the chemical foundations of cell biology
	CO4	Summarize the DNA properties of cell biology.
	CO5	Describe protein structure and function
BP809ET		**COSMETIC SCIENCE**
	CO1	Gain knowledge about cosmetic principles and cosmetic excipients
	CO2	To understand the building blocks and formulation aspect of skin care, hair care and oral care products.
	CO3	Learn about the classification of sunscreens, SPF and also the role of herbs as cosmetic and analysis of cosmetics as per BIS
	CO4	Know the evaluation methods for cosmetics and the standard instrument used in analysis
	CO5	Understand the common problems of skin and hair
BP811ET		**ADVANCED INSTRUMENTATION TECHNIQUES**
	CO1	Describe the principle, instrumentation and applications of 1H- NMR and 13C-NMR spectroscopy and mass spectroscopy, interpret spectral data to predict structure of a given compound.
	CO2	Describe the principle, instrumentation and applications of thermal methods of analysis and X-ray diffraction methods.
	CO3	Understand calibration and validation as per ICH guidelines.
	CO4	Understand the principle, procedure and applications of RIA and extraction techniques.
	CO5	Understand the principle and instrumentation of hyphenated techniques in pharmaceutical analysis and other applications.

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COURSE OUTCOME OF PHARM D

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COURSE OUTCOMES		
FIRST PHARM D		
1.1	**HUMAN ANATOMY AND PHYSIOLOGY T**	
	CO1	Useful in identification of different tissues arrangement in organs and functions.
	CO2	Useful in understanding of Homeostasis of different systems and their imbalanced causes.
	CO3	To evaluate the link between Pathological state and Physiological state.
	CO4	To perform the hematological tests and also record blood pressure, heart rate and respiratory rate etc.,
	CO5	Useful in how the drugs act on the various body systems in correcting the disease.
1.1	**HUMAN ANATOMY AND PHYSIOLOGY P**	
	CO1	Student can able to understand anatomy and physiology of different tissues and organs of the body.
	CO2	Student can able to understand and perform different Hematological tests.
	CO3	Student can able to understand and perform various tests for identification of Cardiovascular problems
	CO4	It is helpful in the management of public health by family planning health awareness programs
	CO5	To understand and perform various appliances used in experimental physiology.
1.2	**PHARMACEUTICS T**	
	CO1	Explain history of the profession of pharmacy in India and pharmacopoeias and its development
	CO2	Learn parts and handling of prescription, posology & dose calculation of drug in imperial system as well as metric system
	CO3	Understand basic requirements, formulation and evaluation of conventional dosage forms like powder, liquid (monophasic & biphasic) and semi solid dosages
	CO4	To understand about pharmaceutical incompatibility and methods to overcome
	CO5	Understand the method of preparation, purification and storage of galenical as well as surgical aids and its pharmaceutical and clinical applications
1.2	**PHARMACEUTICS P**	
	CO1	Handle a prescription by identifying pharmaceutical / medical terminology, abbreviations and symbols commonly used in the prescribing and dispensing of medications in the pharmacy
	CO2	Achieve skill in the operation of common pharmaceutical measuring. weighing and compounding devices.
	CO3	Students will be able to council a patient regarding direction, precaution and usage of prescribed medicine and also acquire the knowledge of hospital pharmacy dispensing and storage
	CO4	Classify different dosage forms and apply principles of pharmaceutical science in formulation and dispensing of various conventional dosage forms.
	CO5	Students will be familiar with various pharmaceutical incompatibilities in prescription and methods to overcome the incompatibility.
1.3	**MEDICINAL BIOCHEMISTRY T**	
	CO1	Understand the catalytic activity of enzymes and importance of isoenzymes in diagnosis of diseases;
	CO2	Know the metabolic process of biomolecules in health and illness (metabolic disorders);
	CO3	Understand the genetic organization of mammalian genome; protein synthesis; replication; mutation and repair mechanism;

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	CO4	Know the biochemical principles of organ function tests of kidney, liver and endocrine gland
	CO5	Understand the qualitative analysis and determination of biomolecules in the body fluids.
1.3	**MEDICINAL BIOCHEMISTRY P**	
	CO1	To get the practical knowledge about the abnormal constituent present in urine.
	CO2	Know how physiological conditions influence the structures and reactivities of bio molecules.
	CO3	Know the interpretation of data emanating from a Clinical Test Lab.
	CO4	To get the practical knowledge about the enzymatic activity.
	CO5	To acquire practical knowledge in quantitative estimation of the biological macromolecules.
1.4	**PHARMACEUTICAL ORGANIC CHEMISTRY T**	
	CO1	To remember the IUPAC/Common system of nomenclature of simple organic compounds belonging to different classes of organic compounds
	CO2	To understand important physical properties of organic compounds
	CO3	Explain ideas for free radical/ nucleophilic [alkyl/ acyl/ aryl] /electrophilic substitution, free radical/ nucleophilic / electrophilic addition, elimination, oxidation and reduction reactions with mechanism, orientation of the reaction, order of reactivity, stability of compounds
	CO4	Understand some named organic reactions with mechanism
	CO5	Understand the methods of preparation, test for purity, principle involved in the assay, important medicinal uses of some important organic compounds
1.4	**PHARMACEUTICAL ORGANIC CHEMISTRY P**	
	CO1	Remember the basic concept for nomenclature of simple organic compounds belong to different classes and make 3D stereo models to learn easily.
	CO2	Understand the determination of some important physical properties like melting point, boiling point, solubility etc.
	CO3	To understand about various ideas and concept for systemic qualitative analysis of organic compounds and it's the principle involved the purification of organic compounds
	CO4	To understand about various ideas for the synthesis of organic compounds and study about principles, reactions and mechanism.
	CO5	Remember the basic concept for synthesis of organic compounds with named reactions and stud about mechanisms
1.5	**PHARMACEUTICAL INORGANIC CHEMISTRY T**	
	CO1	To understand the principles of volumetric titrations
	CO2	To analysis and estimate the purity of ions such as chlorides, sulphates, iron, lead, arsenic and heavy metals
	CO3	To acquire knowledge in the preparation and assay of medicinal important compounds like acidifiers, antacid, cathartics
	CO4	To acquire knowledge in the preparation and assay of medicinal important compounds like antimicrobial agents, pharmaceutical aid
	CO5	To understand the preparation and assay of dental products &principles of radiopharmaceuticals
1.5	**PHARMACEUTICAL INORGANIC CHEMISTRY P**	
	CO1	To understand the principles of volumetric titrations
	CO2	To analysis and estimate the purity of ions such as chlorides, sulphates, iron, lead, arsenic and heavy metals

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	CO3	To acquire knowledge in the preparation and assay of medicinal important compounds like acidifiers, antacid, cathartics
	CO4	To acquire knowledge in the preparation and assay of medicinal important compounds like antimicrobial agents, pharmaceutical aid
	CO5	To understand the preparation and assay of dental products &principles of radiopharmaceuticals
SECOND PHARM D		
2.1	**PATHOPHYSIOLOGY T**	
	CO1	To understand the basic principles involved in cell injury and adaptation and analyse the pathogenesis of inflammation and wound healing
	CO2	To understand the fundamental aspect of immunity, autoimmune diseases and allograft rejections
	CO3	To analyse the pathogenesis of cancer and understand the laboratory test for determination of cancer
	CO4	To evaluate the pathogenesis, signs and symptoms and common diseases and infections
	CO5	Understand the pathogenesis and clinical manifestation of various nutritional and environmental disease
2.2	**PHARMACEUTICAL MICROBIOLOGY T**	
	CO1	To understand various divisions of microbial world and relationship among them, different methods of classification of microbes
	CO2	To understand growth, cultivation, isolation and identification of bacteria, virus and fungi, counting of bacteria.
	CO3	To understand detailed study of different methods of sterilization including their merits and demerits, their validation. Detailed study of sterility testing of different pharmaceutical preparations.
	CO4	To understand various diagnostic tests such as Schick's Test, Elisa test, Western Blot test, Southern Blot, PCR, Widal, QBC and Mantoux test and study of malarial parasite.
	CO5	To understand principles and methods of different microbiological assays
2.2	**PHARMACEUTICAL MICROBIOLOGY P**	
	CO1	Students will acquire knowledge about the preparation of various culture media, distribution of micro-organisms and sub culturing of various bacteria
	CO2	Students will train to perform aseptic transfer, streak plate method, pour plate method and spread plate method.
	CO3	Students will able to identify the motility characters of a given bacteria by hanging drop method.
	CO4	Students will identify the characteristics of bacteria by performing various staining techniques.
	CO5	Students will find various biochemical reactions mediated by microorganisms.
2.3	**PHARMACOGNOSY AND PHYTOPHARMACEUTICALS T**	
	CO1	Understand and describe the evolution, historic contribution & scope of pharmacognosy, plant cell and its inclusions, sources of crude drugs & will be able to classify crude drugs based on different parameters
	CO2	Understand and gain knowledge over medicinal uses of various phytoconstituents and learn the pharmacognosy of crude drugs with these phytoconstituents

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	CO3	Discuss and identify the importance of various parameters related to cultivation of medicinal plants, collection, processing of and storage of crude drugs having therapeutic action
	CO4	Gain knowledge on carbohydrate drugs, protein drugs, lipids and oils containing drugs various plant fibers used in surgical dressings and related products
	CO5	Gain knowledge and applying methods about the adulteration and evaluation of crude drugs.
2.3	**PHARMACOGNOSY AND PHYTOPHARMACEUTICALS P**	
	CO1	Understand and apply the knowledge of biological sources, morphological or organoleptic uses of crude drugs
	CO2	Utilize the knowledge of the extraction and evaluation of crude drugs by using chemical identification tests and microchemical tests
	CO3	Applying the principles of evaluation of crude drugs through histology or microscopical studies for its quality and purity check
	CO4	Utilize the knowledge on evaluating the crude drugs by assay and quantification of lipids oils etc. for its standardization
	CO5	Gain knowledge and apply on the adulteration in crude drugs also to evaluate the crude drugs for its quality and purity.
2.4	**PHARMACOLOGY T**	
	CO1	Understand the pharmacological aspects of drugs. To remember the basics of general pharmacology (Pharmacokinetic and Pharmacodynamic).
	CO2	Understand the entire pharmacology and appreciate the importance of pharmacology subject as a basis of therapeutics and to correlate and apply the knowledge of autonomic nervous system, central nervous system therapeutically.
	CO3	Understand the entire pharmacology and appreciate the importance of pharmacology subject as a basis of therapeutics and to correlate and apply the knowledge of cardio vascular system therapeutically.
	CO4	Understand the entire pharmacology and appreciate the importance of pharmacology subject as a basis of therapeutics and to correlate and apply the knowledge of respiratory system therapeutically.
	CO5	To understand the importance of hormones and hormone antagonist, autocoids and their antagonist action.
2.5	**COMMUNITY PHARMACY T**	
	CO1	To understand pharmaceutical care services.
	CO2	To understand the business and professional practice management skills in community pharmacies.
	CO3	To understand the patient counselling & provide health screening services to public in community pharmacy;
	CO4	To understand about various diseases and management in community aspect.
	CO5	To understand the concept of Rational and essential drug therapy.
2.6	**PHARMACOTHERAPEUTICS T**	
	CO1	To describe and apply the prescribing pattern for special populations
	CO2	To describe the etiopathogenesis and interpret the pharmacotherapy of diseases associated with Cardiovascular system

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	CO3	To remember and understand the etiology, pathophysiology and management of respiratory system
	CO4	To describe the etiopathogenesis and interpret the pharmacotherapy of diseases associated with Endocrine system
	CO5	To describe the etiopathogenesis and interpret the pharmacotherapy of diseases associated with ophthalmology
2.6	**PHARMACOTHERAPEUTICS P**	
	CO1	Knowledge in analyzing patient specific cases based on SOAP format
	CO2	Gain knowledge in analyzing patients therapy based on clinical parameters
	CO3	Understand and analyse to Answer drug information queries
	CO4	To analyze drug interactions in the prescriptions
	CO5	To identify and analyze Adverse drug reactions
		THIRD PHARM D
3.1		**PHARMACOLOGY II T**
	CO1	Understand the pharmacological aspects and correlate and apply the knowledge therapeutically of drugs falling under Drugs acting on Blood and blood forming agents, Renal System.
	CO2	Student shall be able to Learn about pharmacological aspects and apply the knowledge therapeutically of drugs falling under Drugs acting on Chemotherapy and Immunopharmacology
	CO3	Students would have understood the principles of animal toxicology and bioassay procedures
	CO4	Students would have learnt in depth knowledge on cell, macromolecules, cell signaling, DNA replication and cell cycle
	CO5	Students would appreciate the importance of gene and its structure, genome, gene expression, recombinant DNA technology and other associated aspects
3.1	**PHARMACOLOGY II P**	
	CO1	Students shall able to understand laboratory appliances used in experimental pharmacology and different routes of administration of drugs in animals, physiological salt solutions used in experimental pharmacology.
	CO2	Students shall be able to carry out the animal experiments confidently on dose response curve of Ach using isolated ileum, interpolation method, agonistic and antagonistic effects of drugs, and three-point method.
	CO3	Students shall be able to carry out the animal experiments confidently on bioassay of Histamine using guinea-pig ileum preparation by dose response curve, three-point method, interpolation method.
	CO4	Students shall be able to carry out the computer-based experiments confidently on Analgesic property, Anti-inflammatory effect, Anticonvulsant activity, Antidepressant activity, Locomotor activity, Cardiotonic activity
	CO5	Students shall be able to study of use of anesthetics in laboratory animals.
3.2	**PHARMACEUTICAL ANALYSIS T**	
	CO1	Know the quality assurance, quality control, validation methods, calibration, GLP, TQM, ICH guidelines and regulatory control.

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	CO2	Understand classification, separation techniques, choice of methods for various chromatography techniques.
	CO3	Know the theoretical aspects, instrumentation, interpretation of data/spectra, analytical applications for electrometric methods of titration.
	CO4	Understand the theoretical aspects, instrumentation, elements of interpretation of data/spectra and applications for spectroscopy.
	CO5	Understand theoretical aspects, instrumentation and applications of polarimetry, X-RAY diffraction and thermal analysis
3.2	**PHARMACEUTICAL ANALYSIS P**	
	CO1	Separation and identification of amino acids by paper chromatography, sulpha drugs by TLC technique.
	CO2	Determination of dissociation constant of indicators and estimation of drugs by UV spectroscopy, simultaneous estimation of two drugs present in given formulation, colourimetric estimation of supha drugs and salicylic acid.
	CO3	Estimation of drugs by fluorimetric technique, study of quenching effect in fluorimetry, conductometric and potentiometric titrations of acid with base.
	CO4	Determination of chlorides and sulphates in calcium gluconate by nepheloturbidimetric method, determination of Na/K by flame photometry, determination of pKa using pH meter, determination of specific rotation.
	CO5	Demonstration of HPLC, HPTLC, GC MS and DSC, comparison and interpretation of IR and NMR spectra.
3.3		**PHARMACOTHERAPEUTICS-II T**
	CO1	Know the pathophysiology of infectious disease, musculoskeletal disease, renal disease, oncology and dermatological disease state and the rationale for drug therapy.
	CO2	Know the therapeutic approach to management of infectious disease, musculoskeletal disease, renal disease, oncology and dermatological disease.
	CO3	Know the controversies in drug therapy.
	CO4	Know the importance of preparation of individualized therapeutic plans based on diagnosis.
	CO5	To identify the needs of patient specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time course of clinical and laboratory indices of therapeutic response and adverse effect).
3.3		**PHARMACOTHERAPEUTICS-II P**
	CO1	To understand the etiopathogenesis and pharmacotherapy of different diseases
	CO2	To understand the diagnosis methods
	CO3	To understand the severity of diseases
	CO4	To understand non-pharmacological approaches available
	CO5	To understand the guidelines in selecting treatments
3.4	**PHARMACEUTICAL JURISPRUDENCE**	
	CO1	To understand knowledge on practice of the professional ethics, pharmaceutical legislation existing in India
	CO2	Useful in understand and apply knowledge in labelling, packing of drugs and cosmetics.

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	CO3	To understand fixing of drug price by DPCO, drug policy, essential commodities act and patent and design act.
	CO4	To understand the roles and responsibilities of various act under Indian penal code like NDPS act, Prevention of cruelty to animals act, Drugs and magic remedies act etc.,
	CO5	Helpful in understanding various penalties and offences of different Pharmacy Acts and their violation.
3.5		**MEDICINAL CHEMISTRY T**
	CO1	To apply modern drug design principles discovery including QSAR, prodrugs, combinatorial chemistry, CADD, and antisense molecules.
	CO2	To understand the drug metabolic pathways, adverse effect and therapeutic value of drugs
	CO3	To evaluate the structural activity relationship of different class of drugs, with respect to their pharmacological activity
	CO4	Well acquainted with the synthesis and therapeutic value of some important class of drugs and history of drug discovery.
	CO5	To understand the correlation between pharmacology of a disease and its mitigation or cure.
3.5		**MEDICINAL CHEMISTRY P**
	CO1	To apply modern drug design principles discovery including QSAR, prodrugs, combinatorial chemistry, CADD, and antisense molecules.
	CO2	To understand the drug metabolic pathways, adverse effect and therapeutic value of drugs
	CO3	To evaluate the structural activity relationship of different class of drugs, with respect to their pharmacological activity
	CO4	Well acquainted with the synthesis and therapeutic value of some important class of drugs and history of drug discovery.
	CO5	
3.6		**PHARMACEUTICAL FORMULATIONS T**
	CO1	Understand the concepts of various dosage forms.
	CO2	Understand and evaluate formulation of solid dosage forms like tablets, capsules and liquid dosage forms and application of these principles in manufacture of solid dosage forms.
	CO3	Understand and evaluate the formulation and evaluation of parenteral and ophthalmic preparations application of these principles in manufacture of drugs in aseptic condition.
	CO4	Understand and evaluate the formulation and evaluation of semi solid preparations application of these principles in manufacture of semisolids.
	CO5	Apply the principles of controlled drug delivery in the design of novel drug delivery systems and evaluate effectiveness.
3.6		**PHARMACEUTICAL FORMULATIONS P**
	CO1	Apply the basic knowledge in the formulation of various types of tablets and hard gelatine capsules.
	CO2	Apply the basic knowledge in the formulation of parentrels.
	CO3	Evaluate different dosage forms by performing various quality control tests.
	CO4	Apply the basic knowledge in the formulation of various liquid and semisolids.
	CO5	Apply the knowledge in the manufacture of cosmetics.
		FOURTH PHARM D
4.1		**PHARMACOTHERAPEUTICS III T**

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	CO1	To understand the etio-pathogenesis of selected disease states
	CO2	To understand the rationale for drug therapy of the selected disease.
	CO3	To understand the importance of individualized therapeutic plans based on diagnosis and controversies in drug therapy
	CO4	To learn the general prescribing guidelines for special population
	CO5	To summarize the therapeutic approach to management of diseases including reference to the latest available evidence;
4.1		**PHARMACOTHERAPEUTICS III P**
	CO1	To prepare SOAP (subjective, objective, assessment and plan) notes for selected cases
	CO2	To educate the patients regarding proper use of medicines/devices and life style modifications required
	CO3	To check the appropriateness of the prescription based on the clinical condition of the patient (pediatric, geriatric, pregnancy/lactation, renal/hepatic impairment)
	CO4	To analyze and monitor the prescription for any errors and rectification of them
	CO5	To apply the knowledge in patient counselling to particular disease condition
4.2		**HOSPITAL PHARMACY T**
	CO1	Know the professional practice management skills in hospital pharmacy
	CO2	Know various drug distribution methods
	CO3	Know the manufacturing practices of various formulations in hospital set up
	CO4	Analyze the stores management and inventory control
	CO5	To know about hospital drug policy
4.2		**HOSPITAL PHARMACY P**
	CO1	Assessment of drug interactions in the given prescriptions
	CO2	To know the Manufacture of parenteral formulations, powders
	CO3	To provide Drug information queries
	CO4	To study about Inventory control techniques
	CO5	Design and management of hospital pharmacy department
4.3		**CLINICAL PHARMACY T**
	CO1	Learn the basic functions of clinical pharmacy such as clinical reviews, medication history, patient communication and ward rounds
	CO2	Learn on patient safe and effective therapy services such as patient counselling and prescription advisory
	CO3	Drug related problem assessment and resolution for adverse drug reaction, drug interaction, medication error
	CO4	Learn various laboratory results interpretations of specific disease states
	CO5	Search, analyze, interpret and formulate drug information
4.3		**CLINICAL PHARMACY P**
	CO1	Search, analyze, interpret and formulate drug information response

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	CO2	Know the steps involved in patient medication history interview and its relevance
	CO3	Know about patient communication and steps involved in patient counseling
	CO4	Conduct case analysis related to laboratory investigations
	CO5	Identify and rectify the drug related problems
4.4		**BIOSTATISTICS & RESEARCH METHODOLOGY T**
	CO1	Know the various statistical methods to solve different types of problems
	CO2	Operate various statistical software packages
	CO3	Appreciate the importance of Computer in hospital and Community Pharmacy
	CO4	Appreciate the statistical technique in solving the pharmaceutical problems
	CO5	Develop the ability to apply the methods while working on a research project work
4.5		**BIOPHARMACEUTICS AND PHARMACOKINETICS T**
	CO1	Understand and apply the basic concepts in ADME and the mechanisms and factors affecting the processes of drug absorption and drug distribution to derive the pharmacokinetic parameters to describe the processes
	CO2	Understand the concept of drug elimination and apply the knowledge to describe parameters like clearance and extraction ratio and to design dosage regimen in patients with renal impairment.
	CO3	Understand about the theory of compartmental pharmacokinetics and analyze the plasma or urine data to derive and describe pharmacokinetic parameters
	CO4	Understand about the theory of multicompartment models and multiple dosage regimens to analyze and describe pharmacokinetic parameters
	CO5	Understand the basic knowledge about bioavailability and bio equivalency to design and analyze drug product equivalency studies
4.5		**BIOPHARMACEUTICS AND PHARMACOKINETICS P**
	CO1	Students will understand to perform the drug permeation study across egg/artificial membrane.
	CO2	Ability to estimates pharmacokinetic parameters using various mathematical modes
	CO3	To know protein binding parameters of drugs by in-vitro technique.
	CO4	Ability to design in-vitro dissolution studies and its importance
	CO5	students are able to determine partition coefficient of drugs with different solvent systems.
4.6		**CLINICAL TOXICOLOGY**
	CO1	To understand the basic toxicological knowledge in the general principles in the management of poisoning, prevention and treatment of poisoning.
	CO2	To evaluate normal pharmacological effects and toxicological effects of various drugs and toxicokinetic study.
	CO3	To analyze the clinical symptoms of various poisoning and overdosage of drugs.
	CO4	To apply the case with first aid, and suitable antidotes.
	CO5	To understand the normal pharmacological effects, mechanisms of various antidotes and activity in various poisoning.
		FIFTH PHARM D

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5.1		**CLINICAL RESEARCH T**
	CO1	Knowledge on the various approaches of drug discovery process and clinical development
	CO2	Learn about the guidelines and ethical principles involved in the clinical trial
	CO3	Knowledge on the regulatory environment of major countries
	CO4	Knowledge on the various roles and responsibilities of the clinical trial personnel
	CO5	Various procedures for the documentation, data management and safety monitoring in clinical trial
5.2		**PHARMACOEPIDEMIOLOGY AND PHARMACOECONOMICS T**
	CO1	To understand pharmacoepidemiologic studies with source of data and apply in health care research
	CO2	To understand outcome measures of drug use
	CO3	To perform risk analysis
	CO4	To understand the fundamental principles of pharmacoeconomic and its methods
	CO5	To investigate pharmacoeconomic analysis of various pharmaceutical products
5.3		**CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC DRUG MONITORING T**
	CO1	Describe & apply the pharmacokinetic principles to individualize drug therapy in a patient care situation
	CO2	Recognize the clinical areas where implementation of TDM will have a positive effect on patient care for selected diseases
	CO3	Analyze and recommend dosage regimen for patients with renal/hepatic impairment
	CO4	Apply the principles of pharmacokinetics to analyze and predict drug interactions
	CO5	Importance of Pharmacogenetics and gain knowledge on estimating the population pharmacokinetic parameters by various methods.

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COURSE OUTCOME OF M PHARM

PHARMACEUTICAL ANALYSIS

PHARMACEUTICS

PHARMACEUTICAL CHEMISTRY

PHARMACOLOGY

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COURSE OUTCOMES		
FIRST SEMESTER		
MPT 101T	**Modern Pharmaceutical Analytical Techniques**	
	CO1	To understand the basic knowledge on assay of single and multiple component pharmaceuticals by using various analytical instruments.
	CO2	To develop skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals.
	CO3	To develop basic practical skills using instrumentation techniques
	CO4	To develop the skills in selecting suitable techniques for analysis of drugs and pharmaceuticals
	CO5	To execute the theoretical knowledge on various instrumental techniques available for analysis of organic substances
MPA 102T	**Advanced Pharmaceutical Analysis**	
	CO1	Understand impurity and stability studies in drug Substance or active Pharmaceutical ingredients and qualification of impurities as per ICH guidelines, classification, sources and control of elemental impurities.
	CO2	Impurity profiling and degradant characterization, WHO and ICH stability testing guidelines.
	CO3	Stability testing of phytopharmaceuticals, regulatory requirements, protocols, HPTLC/HPLC finger printing, interactions and complexity.
	CO4	Biological tests and assays of Adsorbed Tetanus vaccine, Adsorbed Diphtheria vaccine, Human anti hemophilic vaccine, Rabies vaccine, Tetanus Anti toxin, Tetanus Anti serum, Oxytocin, Heparin sodium IP and Antivenom, PCR studies for gene regulation.
	CO5	Basic principles, Production of antibodies, Separation of bound and unbound drug in Radioimmunoassay, Optical IA, Enzyme IA, Fluoro IA, Luminescence IA, Quantification and applications of IA
MPA 103T	**Pharmaceutical Validation**	
	CO1	Understand the concepts of calibration, qualification, validation.
	CO2	Possess knowledge about qualification of various equipment.
	CO3	Possess knowledge about Validation of Utility systems.
	CO4	Understand the general principles, validation of analytical method as per ICH guidelines and USP.
	CO5	Acquire knowledge of general principles of intellectual property.
MPA 104T	**Food Analysis**	
	CO1	To understand various analytical techniques in the determination of food constituents.
	CO2	To execute the analytical techniques in the determination of food additives.

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	CO3	To understand the analytical techniques in the determination of finished food products
	CO4	To select the various analytical techniques in the determination of pesticides in food
	CO5	To evaluate the safety and quality of food products based on their analytical results.
MPA 105P	**Pharmaceutical Analysis Practical - I**	
	CO1	To analyze the pharmacopeial compounds by UV methods.
	CO2	To interpret the pharmacopeial compounds and formulations by chromatographic technique.
	CO3	To analyze and estimate the compounds by titration and instrumental methods
	CO4	To understand the calibration of different equipment and instruments
	CO5	To analyze different constituents, additives and preservatives in food products
SECOND SEMESTER		
MPA 201T	**Advanced Instrumental Analysis**	
	CO1	To understand and to interpret pattern for the organic substances
	CO2	To understand the theoretical aspects of the HPLC and GC techniques
	CO3	To analyze the practical aspects and troubleshooting techniques for HPLC and GC techniques
	CO4	To apply the knowledge and skills in advanced instrumentation techniques for drug analysis
	CO5	To understand the principles and pharmaceutical applications of supercritical fluid chromatography and capillary electrophoresis.
MPA 202T	**Modern Bio-Analytical Techniques**	
	CO1	To understand and study on extraction of drugs and metabolites from biological matrices.
	CO2	To evaluate the bioavailability, their dissolution study, bio pharmaceutics classification and permeability
	CO3	To understand and study on pharmacokinetics and toxicokinetic and evaluation methods
	CO4	To study various cell culture techniques.
	CO5	To understand on metabolite identification and *In vitro* and *In vivo* studies including bioavailability and bioequivalence studies
MPA 203T	**Quality Control and Quality Assurance**	
	CO1	Know the cGMP aspects in a pharmaceutical industry.
	CO2	Understand the cGMP guidelines according to schedule M, USFDA (inclusive of CDER and CBER)
	CO3	Know to analyze raw materials, finished products, packaging materials.
	CO4	Know the importance of documentation
	CO5	Understand the manufacturing operations and controls

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MPA 204T	**Herbal and Cosmetic Analysis**	
	CO1	To understand determination of herbal remedies and its regulations
	CO2	To understand various methods for analysis of natural products and monographs
	CO3	To understand various adulterations in herbal drugs and its evaluation methods
	CO4	To study various Herbal drug-drug interaction
	CO5	To understand the principles of performance evaluation of cosmetic products.
MPA 205P	**Pharmaceutical Analysis Practical – II**	
	CO1	Identification and interpretation of organic compounds by UV, FT-IR, NMR and Mass spectra.
	CO2	Bio molecules separation utilizing various sample preparation techniques and Quantitative analysis of components by gel electrophoresis and HPLC, isolation of analgesics from biological fluids (Blood serum and urine).
	CO3	Protocol preparation and performance of analytical/Bioanalytical method validation and conduct of BA/BE studies according to guidelines, Preparation of Master Formula Record and Batch Manufacturing Record.
	CO4	In process and finished product quality control tests for tablets, capsules, parenteral and creams, quality control tests for Primary and secondary packing materials, testing of related and foreign substances in drugs and raw materials,
	CO5	Quantitative analysis of rancidity in lipsticks and hair oil, assay of raw materials as per official monographs, Determination of aryl amine content and Developer in hair dye, foam height and SLS content of Shampoo, total fatty matter in creams (Soap, skin and hair creams), acid value and saponification value and calcium thioglycolate in depilatories.
THIRD SEMESTER		
MRM 301T	**Research Methodology and Biostatistics**	
	CO1	Able to evaluate the values, scope, objectives and requirements of research work
	CO2	Able to understand and discuss the basic concepts of statistical analysis
	CO3	Able to apply the basic principles involved in the medical research and ethics
	CO4	Understand and know the guidelines for the maintenance of laboratory animals
	CO5	Understand to design research work. Create efficiency in solving practical difficulties

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	CO1	To understand the basic knowledge on assay of single and multiple component pharmaceuticals by using various analytical instruments.
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	CO3	To develop basic practical skills using instrumentation techniques
	CO4	To develop the skills in selecting suitable techniques for analysis of drugs and pharmaceuticals
	CO5	To execute the theoretical knowledge on various instrumental techniques available for analysis of organic substances
MPH 102T	**MPH 102T Drug Delivery Systems**	
	CO1	The various approaches for development of novel drug delivery systems.
	CO2	The criteria for selection of drugs for the development of delivering system
	CO3	The criteria for selection of polymers for the development of delivering system
	CO4	Understand the formulation of Novel drug delivery systems.
	CO5	Understand the evaluation of Novel drug delivery systems.
MPH 103T	**Modern Pharmaceutics**	
	CO1	Understand drug-excipient interactions, stability testing, dispersion theories, and optimization methods in pharmaceutical formulation.
	CO2	Learn validation processes, equipment calibration, and regulatory compliance following ICH & WHO guidelines.
	CO3	Comprehend cGMP objectives, facility layout, production management, inventory control, and Total Quality Management.
	CO4	Study the physics of compression, force distribution, and compaction profiles relevant to tablet formulation.
	CO5	Analyse key parameters apply statistical tests in pharmaceutical formulation development studies.
MPH 104T	**Regulatory Affairs**	
	CO1	To understand the Concepts of innovator and generic drugs, drug development process and Regulatory guidance's and guidelines for filing and approval process
	CO2	To understand the Preparation of Dossiers and their submission to regulatory agencies in different countries.
	CO3	To understand the Post approval regulatory requirements for actives and drug products Submission of global documents in CTD/ eCTD formats

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	CO4	To understand the Clinical trials requirements for approvals for conducting clinical trials
	CO5	To understand the Pharmacovigilence and process of monitoring in clinical trials.
MPH105P	**Pharmaceutics Practical I**	
	CO1	Pharmacopoeial compound analysis by UV-Vis spectrophotometer, various chromatography methods, and know about the drug estimation using Fluorimetry and Flame photometry
	CO2	To understand about different formulations using different drug delivery systems.
	CO3	Get the knowledge about the preformulation considerations necessary for the development of stable and effective tablet dosage forms
	CO4	To know about tablet compression parameters and understand the effect of binders on dissolution of a tablet
	CO5	Analyze dissolution data and determine the mathematical models that best describe drug release kinetics of tablets.
SECOND SEMESTER		
MPH 201T	**Molecular Pharmaceutics (Nano Tech and Targeted DDS)**	
	CO1	To understand the concepts of targeted drug delivery system
	CO2	To understand the various approaches for development of novel drug delivery systems
	CO3	To understand the criteria for selection of drugs for the development of NTDS
	CO4	To understand the criteria for selection of polymers for the development of NTDS
	CO5	To understand the formulation and evaluation of novel drug delivery systems.
MPH 202T	**Advanced Biopharmaceutics &Pharmacokinetics**	
	CO1	Understand the mechanisms and factors affecting drug absorption and enhancing their ability to predict and optimize drug absorption in the gastrointestinal tract
	CO2	Evaluate biopharmaceutical factors influencing drug product performance and bioavailability and drug product stability considerations, which are critical for designing effective drug products.
	CO3	Apply pharmacokinetic models to understand drug distribution and elimination which help in predicting drug behavior and interactions in the body.
	CO4	Design and evaluate bioavailability studies for drug products and understand BCS, also learn about regulatory aspects of bioequivalence and generic substitution.
	CO5	Apply pharmacokinetic principles to the development of advanced drug delivery systems and biotechnological products with advanced therapeutic modalities.
MPH 203T	**Computer Aided Drug Development**	

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	CO1	Understand historical development and application of computers in pharmaceutical research and development, gain knowledge in various statistical modeling including QbD principles.
	CO2	Utilize computational modeling techniques to understand drug disposition.
	CO3	Apply optimization techniques and develop pharmaceutical formulations using computer aided techniques and learn market analysis.
	CO4	Simulate gastrointestinal absorption for biopharmaceutical characterization including pharmacodynamic processes at various biological levels and manage clinical data.
	CO5	Understand applications and implications of AI and robotics in pharmaceutical research including computational fluid dynamics in the pharma industry.
MPH 204T	**Cosmetics and Cosmeceuticals**	
	CO1	To understand the key ingredients used in cosmetics and cosmeceuticals.
	CO2	To understand the Key building blocks for various formulations
	CO3	To understand the Current technologies in the market
	CO4	To understand the Various key ingredients and basic science to develop cosmetics and cosmeceuticals
	CO5	Scientific knowledge to develop cosmetics and cosmeceuticals with desired Safety, stability, and efficacy
MPH205P	**Pharmaceutics Practical II**	
	CO1	To evaluate the impact of temperature changes, non-solvent addition, and incompatible polymer addition on microcapsule preparation, enhancing their understanding of formulation stability.
	CO2	Develop skills to enhance the dissolution characteristics of poorly soluble drugs by solid dispersion technique and comparison of dissolution profiles of different marketed drug products.
	CO3	Conduct protein binding studies to understand the pharmacokinetic behavior of drugs and perform bioavailability studies in animals and analyze pharmacokinetic data using software tools.
	CO4	Apply Design of Experiments (DoE) and Quality-by-Design (QbD) principles in pharmaceutical development. using Design Expert Software
	CO5	Formulate and evaluate cosmetic, personal care products such as creams, shampoo, toothpaste also address dry skin, acne, blemishes, wrinkles, bleeding gums and dandruff in developing targeted cosmetic.
THIRD SEMESTER		
MRM 301T	**Research Methodology and Biostatistics**	
	CO1	Able to evaluate the values, scope, objectives and requirements of research work
	CO2	Able to understand and discuss the basic concepts of statistical analysis
	CO3	Able to apply the basic principles involved in the medical research and ethics

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	CO4	Understand and know the guidelines for the maintenance of laboratory animals
	CO5	Understand to design research work. Create efficiency in solving practical difficulties

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FIRST SEMESTER		
MPT 101T	**Modern Pharmaceutical Analytical Techniques**	
	CO1	To understand the basic knowledge on assay of single and multiple component pharmaceuticals by using various analytical instruments.
	CO2	To develop skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals.
	CO3	To develop basic practical skills using instrumentation techniques
	CO4	To develop the skills in selecting suitable techniques for analysis of drugs and pharmaceuticals
	CO5	To execute the theoretical knowledge on various instrumental techniques available for analysis of organic substances
MPC 102T	**Advanced Organic Chemistry –I**	
	CO1	Understand the principles and applications of retrosynthesis
	CO2	Understand and apply the mechanism and applications of named reactions
	CO3	The concept of disconnection to develop synthetic routes for small target molecule
	CO4	Understand the various catalysts used in organic reactions
	CO5	Understand and apply the chemistry of heterocyclic compounds
MPC 103T	**Advanced Medicinal Chemistry**	
	CO1	Different stages of drug discovery
	CO2	Various strategies to design and develop new drug molecules for biological targets
	CO3	Role of medicinal chemistry in drug research
	CO4	Different techniques for drug discovery
	CO5	peptidomimetics
MPC 104T	**Chemistry of Natural Products**	
	CO1	To provide students with a comprehensive understanding and practical skills in the study of natural products for pharmaceutical development, preparing them for advanced research and professional careers in medicinal chemistry and drug discovery.
	CO2	To provide students with a comprehensive understanding and practical skills related to the chemistry, extraction, purification, structural determination, and biological activity of alkaloids and flavonoids preparing them for advanced study and practical applications in medicinal chemistry and drug discovery.
	CO3	To provide students with a comprehensive understanding and practical skills related to the chemistry, extraction, purification, structural determination, and biological activity of steroids and terpenoids preparing them for advanced study and practical applications in medicinal chemistry and drug discovery.

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	CO4	To provide students with a comprehensive understanding and practical skills related to recombinant DNA technology and its applications in drug discovery, preparing them for advanced study and professional careers in biotechnology, pharmaceutical sciences, and related fields.
	CO5	To equip students with a comprehensive understanding of the principles, techniques, and applications of structural characterization in natural compound chemistry, preparing them for careers in pharmaceutical research, biotechnology, and related fields.
MPC 105P	**Pharmaceutical Chemistry Practical – I**	
	CO1	Analyze and evaluate interpretation of the NMR, Mass and IR spectra of various organic compounds.
	CO2	Apply the theoretical and practical skills of the hyphenated instruments
	CO3	To analyze and evaluate organic compounds
	CO4	To execute the reactions of synthetic importance of organic compounds
	CO5	To analyze and evaluate drugs by using fluorimetry
SECOND SEMESTER		
MPC 201T	**Advanced Spectral Analysis**	
	CO1	To understand the various hyphenated analytical instrumental techniques for identification, characterization and quantification of drugs
	CO2	To understand Interpretation of the NMR, Mass and IR spectra of various organic compounds
	CO3	To understand theoretical and practical skills of the hyphenated instruments
	CO4	To understand the basic concepts of identification of organic compounds
	CO5	Introduction, principle, instrumentation and application of DSC, DTA and TGA, Raman Spectroscopy, Radio immuno assay
MPC 202T	**Advanced Organic Chemistry –II**	
	CO1	Remember and understand the principles and applications of green chemistry.
	CO2	To analyze and evaluate the concept of peptide chemistry.
	CO3	To analyze and evaluate the various catalysts used in organic reactions
	CO4	To understand the concept of stereochemistry and asymmetric synthesis.
	CO5	To understand the basic concepts in stereochemistry and methods of asymmetric synthesis
MPC 203T	**Computer Aided Drug Design**	
	CO1	To understand the basic concepts of history, different techniques and role of CADD in drug discovery
	CO2	To understand the different CADD techniques and their applications
	CO3	To understand the various strategies to design and develop new drug like molecules.

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	CO4	Apply the theoretical and practical skills of molecular modeling software to design new drug molecules
	CO5	To understand the basic concepts in silico virtual screening protocols
MPC 204T	**Pharmaceutical Process Chemistry**	
	CO1	Students will be equipped with the theoretical knowledge and practical skills required to design, scale up, control, and validate synthetic processes for pharmaceutical compounds, ensuring the production of high-quality APIs while adhering to regulatory and ethical standards.
	CO2	Students will have developed the knowledge and practical skills needed to effectively perform and optimize extraction, filtration, distillation, evaporation, and crystallization processes in the pharmaceutical industry, ensuring high-quality outcomes and regulatory compliance.
	CO3	Students will have developed a comprehensive understanding of nitration, halogenation, and oxidation processes, gaining the theoretical knowledge and practical skills needed to perform and optimize these reactions in the pharmaceutical industry, ensuring high-quality outcomes and regulatory compliance.
	CO4	Students will have developed a comprehensive understanding of reduction, fermentation, and reaction progress kinetic analysis processes, gaining the theoretical knowledge and practical skills needed to perform and optimize these reactions in the pharmaceutical industry, ensuring high-quality outcomes and regulatory compliance.
	CO5	Students will have developed a comprehensive understanding of safety data sheets, hazard labels, PPE, fire safety, and health and environmental management systems, gaining the theoretical knowledge and practical skills needed to ensure safety and compliance in the pharmaceutical industry.
MPC 205P	**Pharmaceutical Chemistry Practical II**	
	CO1	Create organic compounds by adapting different approaches involving reduction/ hydrolysis/ nitration
	CO2	Understand the regulatory requirements in API
	CO3	Apply and analyze the interpretation of organic compounds by FT IR /NMR/ MASS
	CO4	Execute the preparation of organic compounds
	CO5	Apply and analyze the 2D-QSAR based experiments and 3D-QSAR based experiments by using software
THIRD SEMESTER		
MRM 301T	**Research Methodology and Biostatistics**	
	CO1	Able to evaluate the values, scope, objectives and requirements of research work
	CO2	Able to understand and discuss the basic concepts of statistical analysis

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	CO3	Able to apply the basic principles involved in the medical research and ethics
	CO4	Understand and know the guidelines for the maintenance of laboratory animals
	CO5	Understand to design research work. Create efficiency in solving practical difficulties

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FIRST SEMESTER		
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	CO2	To develop skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals.
	CO3	To develop basic practical skills using instrumentation techniques
	CO4	To develop the skills in selecting suitable techniques for analysis of drugs and pharmaceuticals
	CO5	To execute the theoretical knowledge on various instrumental techniques available for analysis of organic substances
MPL 102T	**Advanced Pharmacology-I**	
	CO1	Understand the pharmacological aspects of drugs. To remember the basics of general pharmacology (Pharmacokinetic and Pharmacodynamic).
	CO2	Students will understand the Steps involved in neurotransmission in autonomic and central nervous system.
	CO3	Explain the mechanism of drug actions at cellular and molecular level central nervous system and to Understand the adverse effects, contraindications and clinical uses of drugs used in treatment.
	CO4	Explain the mechanism of drug actions at cellular and molecular level cardio vascular system and to Understand the adverse effects, contraindications and clinical uses of drugs used in treatment.
	CO5	Information about Physiological and pathological role of histamine, serotonin, prostaglandin and kinins
MPL 103T	**Pharmacological and Toxicological Screening Methods-I**	
	CO1	Appraise the regulations and ethical requirement for the usage of experimental animals. Limitations of animal experimentation and alternate animal experiments.
	CO2	Describe the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals, Bioassay: principle, scope and limitations and methods
	CO3	Describe the various newer screening methods involved in the drug discovery process under CNS Pharmacology, Respiratory Pharmacology and Cardiovascular Pharmacology
	CO4	Appreciate and correlate the preclinical data to clinical data. Analgesics, anti-inflammatory and antipyretic agent, antidiabetic, antidyslipidemic agents. Anti-cancer agents. Hepatoprotective screening methods.
	CO5	Student shall be able to Describe the various animals used in the drug discovery process and good laboratory practices, Immunomodulators,

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MPL 104T	**Cellular and Molecular Pharmacology**	
	CO1	Able to elucidate the diverse cellular processes, functions, signalling pathways, and transduction mechanisms, as well as the process by which a gene is expressed.
	CO2	Explain the cell signaling pathways based on receptors and second messengers in the cell
	CO3	Explain the Principles and applications of genomic, proteomic tools, gene therapy and rDNA technology
	CO4	To learn the applicability of molecular pharmacology and biomarkers in drug discovery process
	CO5	To learn and to demonstrate molecular biology techniques as applicable for pharmacology
MPL 105P	**Pharmacology Practical -I**	
	CO1	Appraise the regulations and ethical requirement for the usage of experimental animals, Various routes of drug administration, Techniques of blood sampling, anaesthesia and euthanasia of experimental animals.
	CO2	Describe the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals, Evaluation of CNS stimulant, depressant, anxiogenics and anxiolytic, anticonvulsant activity, Evaluation of analgesic, anti-inflammatory, local anaesthetic, mydriatic and miotic activity.
	CO3	Describe the various newer screening methods involved in the drug discovery process, UV, HPLC, Gas Chromatography, fluorimetry and flame photometry
	CO4	Describe the various newer screening methods involved in the drug discovery process, Evaluation of diuretic activity, Evaluation of antiulcer activity by pylorus ligation method, Oral glucose tolerance test, Isolation and identification of DNA from various sources, Isolation of RNA from yeast, DNA fragmentation assay by agarose gel electrophoresis. DNA damage study by Comet assay
	CO5	Appreciate and correlate the preclinical data to clinical data.
SECOND SEMESTER		
MPL 201T	**Advanced Pharmacology II**	
	CO1	To understand the mechanism of drug actions at cellular and molecular level of hormones.
	CO2	Student shall be able to Learn about pharmacological aspects of drugs falling under Drugs acting on Chemotherapy.
	CO3	Student shall be able to Learn about pharmacological aspects of drugs falling under Drugs acting on Immunopharmacology.
	CO4	Explain the mechanism of drug actions at cellular and molecular level of gastro intestinal drugs and to Understand the adverse effects, contraindications and clinical uses of drugs used in treatment.
	CO5	Students would appreciate the importance of free radical pharmacology.

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MPL 202T	**Pharmacological and Toxicological Screening**	
	CO1	Student shall be able to gain knowledge on the preclinical safety and toxicological evaluation of drug & new chemical entity
	CO2	students shall be able to explain the various types of toxicity studies.
	CO3	student shall be able to appreciate the importance of ethical and regulatory requirements for toxicity studies
	CO4	Student shall be able to explain and demonstrate the practical skills required to conduct the preclinical toxicity studies.
	CO5	The gained knowledge is helpful in drug development process
MPL 203T	**Principles of Drug Discovery**	
	CO1	Able to explain Drug discovery process and stages in the Drug discovery program.
	CO2	Able to explain the basics of Targets, its identification, validation, protein structures & its modification in drug discovery approach.
	CO3	Able to develop leads and protocol to identify leads, its optimization procedures and its sources and able to differentiate lead and hits.
	CO4	Drug designing protocols, application of QSAR in drug discovery and lead developments, its statistical methodology to validate QSAR equations.
	CO5	Appreciate the importance of the role of computer aided drug design in drug discovery.
MPL 204T	**Clinical research and Pharmacovigilance**	
	CO1	Student shall be able to Explain the regulatory requirements for conducting clinical trials, Demonstrate the types of clinical trial designs.
	CO2	Student shall be able to Explain the responsibilities of key players involved in clinical trials
	CO3	Student shall be able to Execute safety monitoring, reporting and close-out activities
	CO4	Student shall be able to Explain the principles of Pharmacovigilance, Detect new adverse drug reactions and their assessment
	CO5	Student shall be able to Perform the adverse drug reaction reporting systems and communication in Pharmacovigilance
MPL 205P	**Pharmacology Practical -II**	
	CO1	To understand the DRC of agonist using suitable isolated tissues preparation
	CO2	To understand the concept for determination of the strength of unknown sample by interpolation bioassay, matching bioassay, bracketing bioassay, multiple point bioassay by using suitable tissue preparation
	CO3	To study the effects of various drugs on isolated heart preparations
	CO4	To study the acute oral toxicity and dermal toxicity studies as per OECD guidelines

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	CO5	To understand the concept of *In-silico* docking studies, *In-silico* pharmacophore-based screening, *In-silico* QSAR studies and ADR reporting
THIRD SEMESTER		
MRM 301T	**Research Methodology and Biostatistics**	
	CO1	Able to evaluate the values, scope, objectives and requirements of research work
	CO2	Able to understand and discuss the basic concepts of statistical analysis
	CO3	Able to apply the basic principles involved in the medical research and ethics
	CO4	Understand and know the guidelines for the maintenance of laboratory animals
	CO5	Understand to design research work. Create efficiency in solving practical difficulties

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CO PO MAPPING - B PHARM

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FIRST SEMESTER											
BP 101T	**HUMAN ANATOMY AND PHYSIOLOGY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	1	2	2	2	2	2	2	3
CO2	3	2	3	3	3	3	3	2	2	3	3
CO3	3	3	3	2	3	3	2	3	3	2	3
CO4	3	2	3	3	3	2	2	2	3	3	3
CO5	3	3	2	3	3	3	3	3	3	3	3
AVERAGE	3	2.6	2.6	2.4	2.8	2.6	2.4	2.4	2.6	2.6	3
BP102T	**PHARMACEUTICAL ANALYSIS I T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	1	-	-	1	-	-	1	-	-
CO2	3	2	-	-	-	1	-	-	-	-	-
CO3	3	1	2	-	-	1	-	-	-	-	-
CO4	3	3	3	3	-	2	-	-	1	-	1
CO5	3	2	-	3	-	1	-	-	1	-	1
AVERAGE	2.8	2	2	3	-	1.2	-	-	1	-	1
BP103T	**PHARMACEUTICS I – T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	1	2	3	3	2	3	1	3
CO2	3	2	2	3	2	3	3	2	3	1	3
CO3	3	2	2	3	2	3	3	2	3	1	3
CO4	3	2	2	3	2	3	3	2	3	1	3
CO5	3	2	2	3	2	3	3	2	3	1	3
AVERAGE	3.0	2	2	2.6	2.0	3	3	2.0	3	1.0	3
BP104T	**PHARMACEUTICAL INORGANIC CHEMISTRY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	2	2	3	3	3	2	3	3
CO2	2	3	3	2	2	3	3	3	3	3	3
CO3	3	3	2	3	2	3	3	3	3	2	3
CO4	3	3	3	2	2	3	3	3	3	2	3
CO5	3	2	3	2	2	3	3	3	3	2	3
AVERAGE	2.8	2.8	2.8	2.2	2.0	3.0	3.0	3.0	2.8	2.4	3.0
BP107P	**HUMAN ANATOMY AND PHYSIOLOGY P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**

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CO1	3	3	2	3	2	2	2	2	2	2	3
CO2	3	3	3	3	2	3	3	3	3	2	3
CO3	3	3	3	3	2	3	3	3	3	2	3
CO4	3	2	3	3	2	3	2	2	2	2	3
CO5	3	2	2	2	2	3	3	2	3	2	3
AVERAGE	3	2.6	2.6	2.8	2	2.8	2.6	2.4	2.6	2	3
BP108P	**PHARMACEUTICAL ANALYSIS I P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	1	1	-	-	1	-	1
CO2	2	2	2	2	1	1	-	-	1	-	1
CO3	2	2	1	1	1	1	-	-	1	-	1
CO4	1	2	1	3	1	1	-	-	1	-	1
CO5	1	1	1	1	1	1	-	-	1	-	1
AVERAGE	1.83	2.00	1.50	2.00	1.00	1.00	-	-	1.00	-	1.00
BP109P	**PHARMACEUTICS I P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	3	2	3	3	2	3	1	3
CO2	3	2	2	3	2	3	3	2	3	1	3
CO3	3	2	2	3	2	3	3	2	3	1	3
CO4	3	2	2	3	2	3	3	2	3	1	3
CO5	3	2	2	3	2	3	3	2	3	1	3
AVERAGE	3	2	2	3	2	3	3	2	3	1	3
BP110P	**PHARMACEUTICAL INORGANIC CHEMISTRY P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	2	2	2	3	3	2	3	3
CO2	3	3	3	2	2	2	3	3	3	3	3
CO3	3	3	3	2	2	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	2	3
CO5	3	3	3	2	3	3	3	3	3	3	3
AVERAGE	3.0	3.0	2.8	2.0	2.4	2.4	3.0	3.0	2.8	2.8	3.0
SECOND SEMESTER											
BP201T	**HUMAN ANATOMY AND PHYSIOLOGY II T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	1	2	2	1	2	1	1	1	2	1	1
CO2	3	1	2	2	1	2	1	1	2	1	1
CO3	3	1	1	2	1	1	1	1	2	1	1
CO4	3	1	1	2	1	1	1	1	2	1	1
CO5	3	1	1	2	1	1	1	1	2	1	1

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AVERAGE	2.6	1.2	1.4	1.8	1.2	1.2	2	1	2	1	1
BP202T	**PHARMACEUTICAL ORGANIC CHEMISTRY I T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	2	2	3	3	3	2	3	3
CO2	2	2	3	2	3	3	3	3	3	3	3
CO3	3	3	2	2	2	3	3	3	3	2	3
CO4	3	3	3	2	2	3	2	3	3	2	3
CO5	3	2	3	2	2	2	3	3	3	2	3
AVERAGE	2.8	2.4	2.8	2.0	2.2	2.8	2.8	3.0	2.8	2.4	3.0
BP203T	**BIOCHEMISTRY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	2	1	2	3	2	1	2	2	1
CO2	3	2	1	1	2	2	3	2	2	1	1
CO3	3	2	3	1	3	3	2	2	2	1	2
CO4	3	2	3	1	2	2	2	1	2	2	1
CO5	3	2	2	2	1	3	1	2	1	1	1
AVERAGE	2.8	2	2.2	1.2	2	2	2	1.6	1.8	1.4	1.2
BP204T	**PATHOPHYSIOLOGY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	1	2	3	2	3	3	3	2
CO2	3	2	3	1	2	3	2	3	1	2	2
CO3	3	2	3	1	1	2	2	3	1	2	2
CO4	3	2	3	1	2	3	2	3	3	2	2
CO5	3	1	3	1	1	2	2	3	3	2	2
AVERAGE	3	1.8	3	1	1.6	2.6	2	3	2.2	2.2	2
BP206T	**ENVIRONMENTAL SCIENCES T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	3	3	3	3	3	3	3	3	3	3
CO2	2	3	3	3	3	3	3	3	2	3	3
CO3	3	3	2	2	2	3	3	3	2	3	3
CO4	2	3	3	3	3	3	3	3	3	3	3
CO5	2	3	3	3	3	3	3	3	3	3	3
AVERAGE	2.2	3	2.8	2.8	2.8	3	3	3	2.6	3	3
BP207P	**HUMAN ANATOMY AND PHYSIOLOGY II P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	1	2	1	2	2	2	2	3
CO2	3	2	1	1	2	1	2	2	3	3	2

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CO3	3	2	1	1	2	1	2	2	2	3	3
CO4	3	2	1	1	2	1	2	2	1	3	3
CO5	3	2	1	1	2	1	2	2	2	2	2
AVERAGE	3	2	1	1	2	1	2	2	2	2.6	2.6
BP208P	**PHARMACEUTICAL ORGANIC CHEMISTRY I P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	3	2	2	3	2	3	3	3
CO2	3	2	3	3	2	3	3	3	2	3	3
CO3	3	3	2	2	3	3	3	2	3	3	3
CO4	3	2	3	2	3	3	3	3	3	2	3
CO5	3	3	2	2	3	3	3	3	3	3	3
AVERAGE	3.0	2.4	2.4	2.4	2.6	2.8	3.0	2.6	2.8	2.8	3.0
BP209P		**BIOCHEMISTRY P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	1	1	2	1	1	2	1	2
CO2	2	2	1	1	2	1	1	1	2	1	1
CO3	2	2	1	1	2	2	1	1	2	1	2
CO4	3	2	1	1	2	2	2	1	2	2	3
CO5	2	1	1	2	1	3	1	2	1	1	1
AVERAGE	2.4	1.8	1	1.6	1.6	2	1.2	1.2	1.8	1.2	1.8
THIRD SEMESTER											
BP301T	**PHARMACEUTICAL ORGANIC CHEMISTRY II T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	3	1	2	3	2	3	2	3
CO2	2	2	2	2	1	2	3	3	2	3	2
CO3	3	2	3	-	1	2	3	2	2	3	2
CO4	3	2	3	-	1	3	2	3	2	3	2
CO5	3	2	2	-	-	3	2	2	3	2	2
AVERAGE	2.8	2	2.4	1	0.8	2.4	2.6	2.4	2.4	2.6	2.2
BP302T	**PHYSICAL PHARMACEUTICS I T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	2	2	2	1	2	1	2	3
CO2	3	3	3	2	2	2	1	2	2	2	3
CO3	3	3	3	3	2	3	2	2	1	2	3
CO4	3	3	3	3	2	3	2	2	1	1	1
CO5	3	2	2	1	2	2	2	2	3	1	2
AVERAGE	3.0	2.6	2.6	2.5	2.0	2.8	1.3	2.4	2.4	1.3	2.2

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BP303T	PHARMACEUTICAL MICROBIOLOGY T										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	3	2	3	2	3	3	2	3	2	3
CO2	2	3	2	2	2	2	2	2	2	2	2
CO3	3	3	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2
CO5	2	2	3	2	2	3	2	2	2	2	2
AVERAGE	2.2	2.6	2.2	2.2	2	2.4	2.2	2	2.2	2	2.2
BP304T	PHARMACEUTICAL ENGINEERING T										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	1	2	2	1	3	1	1	3
CO2	3	2	2	1	3	2	1	3	1	1	3
CO3	3	3	3	3	3	2	1	3	2	1	3
CO4	3	3	3	2	2	2	2	3	1	1	3
CO5	3	2	3	1	2	2	3	3	2	1	3
AVERAGE	3	2.6	2.8	1.6	2.4	2	1.6	3	1.4	1	3
BP305P	PHARMACEUTICAL ORGANIC CHEMISTRY II P										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	1	1	1	2	1	2	3	2	3
CO2	2	1	1	1	1	1	1	1	1	1	3
CO3	2	1	1	1	2	1	2	1	1	1	3
CO4	3	2	1	1	1	3	2	2	3	2	3
CO5	2	2	1	1	2	3	2	2	3	2	3
AVERAGE	2.4	1.6	1	1	1.4	1.6	1.6	1.6	2.2	1.6	3
BP306P	PHYSICAL PHARMACEUTICS I P										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	2	3	1	3	3	2	3	1	3
CO2	3	2	3	2	2	3	3	2	3	1	3
CO3	3	2	3	3	1	3	3	2	3	1	3
CO4	3	3	2	3	1	3	3	2	3	1	3
CO5	3	2	2	3	1	3	3	2	3	1	3
CO6	3	2	2	2	2	3	3	2	3	1	3
CO7	3	3	3	3	1	3	3	2	3	2	3
AVERAGE	3.0	2.0	2.0	3.0	1.0	3.0	3.0	2.0	3.0	1.0	3
BP307P	PHARMACEUTICAL MICROBIOLOGY P										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	2	3	1	3	3	2	3	1	3

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CO2	3	2	2	3	2	3	3	2	3	1	3
CO3	3	2	2	3	1	3	3	2	3	1	3
CO4	3	2	2	3	2	3	3	2	3	1	3
CO5	3	2	2	3	1	3	3	2	3	1	3
Average	3	2	2	3	1.1	3	3	2	3	1	3
BP 308P	**PHARMACEUTICAL ENGINEERING P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	3	1	3	3	2	3	1	3
CO2	3	2	2	3	2	3	3	2	3	1	3
CO3	3	2	2	3	1	3	3	2	3	1	3
CO4	3	2	2	3	2	3	3	2	3	1	3
CO5	3	2	2	2	1	3	3	2	3	1	3
AVERAGE	3	2	2	2.8	1.4	3	3	2	3	1	3
	FOURTH SEMESTER										
BP401T	**PHARMACEUTICAL ORGANIC CHEMISTRY III T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	2	2	-	1	1	1	1	2	1
CO2	3	1	2	2	-	1	1	1	1	2	1
CO3	3	2	2	2	1	2	1	2	2	2	1
CO4	3	2	2	2	1	2	1	2	2	2	1
CO5	3	2	2	2	1	2	1	2	2	2	1
AVERAGE	3	1.6	2	2	0.6	1.6	1	1.6	1.6	2	1
BP402T	**MEDICINAL CHEMISTRY I T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	2	1	2	1	2	1	1	1
CO2	3	2	3	3	1	1	1	2	2	-	-
CO3	3	3	2	2	2	2	-	2	1	1	1
CO4	3	2	2	2	1	2	-	2	1	-	-
CO5	3	2	3	2	1	2	1	2	2	-	-
AVERAGE	**2.4**	**2.2**	**2.6**	**2.2**	**1.2**	**1.8**	**1.0**	**2.0**	**1.4**	**1.0**	**1.0**
BP403T	**PHYSICAL PHARMACEUTICS II T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	2	2	2	3	2	3	2	3
CO2	1	2	3	3	2	2	2	1	1	1	3
CO3	1	2	2	1	2	1	2	1	2	1	2
CO4	2	2	2	2	2	1	2	1	2	1	2
CO5	2	3	3	1	2	1	1	1	1	2	3
AVERAGE	1.8	2.4	2.6	1.8	2	1.4	2	1.2	1.8	1.4	2.6

DEVAKI AMMA MEMORIAL COLLEGE OF PHARMACY

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BP404T		**PHARMACOLOGY I T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	2	3	3	3	3	2	3
CO2	2	1	1	3	1	1	1	1	1	3	2
CO3	3	3	2	3	1	3	2	1	2	3	3
CO4	3	3	2	3	1	3	2	1	2	3	3
CO5	3	2	2	1	3	3	2	2	3	2	2
AVERAGE	2.8	2.4	1.8	2.6	1.6	2.6	2	1.6	2.2	2.6	2.6
BP405T	**PHARMACOGNOSY AND PHYTOCHEMISTRY I T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	3	2	1	3	3	2	1	2
CO2	2	3	2	3	2	1	2	3	2	1	2
CO3	2	2	2	3	1	1	2	1	1	1	3
CO4	2	2	3	1	1	2	1	2	1	2	1
CO5	3	1	2	2	1	1	1	1	1	1	1
AVERAGE	2.4	2	2.4	2.4	1.4	1.2	1.8	2	1.4	1.2	1.8
BP406P		**MEDICINAL CHEMISTRY I P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	-	2	1	2	2	1	2	1	3
CO2	2	-	2	2	-	2	2	1	1	1	3
CO3	2	-	2	2	-	2	2	1	2	-	3
CO4	2	2	-	2	1	2	2	1	-	-	3
CO5	2	1	2	3	1	2	2	1	-	1	3
AVERAGE	**2.0**	**1.6**	**1.2**	**2.2**	**1.0**	**2.0**	**2.0**	**1.0**	**1.6**	**1.0**	**3.0**
BP407P		**PHYSICAL PHARMACEUTICS II P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	2	1	2	1	1	3	1	3
CO2	3	2	3	2	1	2	1	1	3	1	3
CO3	3	3	3	2	1	2	1	1	3	1	3
CO4	3	3	3	1	1	2	1	1	3	1	3
CO5	3	3	3	1	1	2	1	1	3	1	3
AVERAGE	3	2.8	3	1.6	1	2	1	1	3	1	3
BP408P		**PHARMACOLOGY I P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	2	1	3	1	3	2	3
CO2	2	1	1	3	2	1	1	1	1	3	2
CO3	3	3	2	3	2	1	2	1	2	3	3

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CO4	3	3	2	3	2	1	2	1	2	3	3
CO5	3	2	2	3	2	1	2	2	3	2	2
AVERAGE	2.8	2.4	1.8	3	2	1	2	1.2	2.2	2.6	2.6
BP409P		**PHARMACOGNOSY AND PHYTOCHEMISTRY I P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	1	2	2	-	-	-	-	-	-	-
CO2	1	-	-	3	-	-	-	-	-	-	1
CO3	2	3	-	2	-	-	-	-	-	-	2
CO4	-	1	1	1	-	-	-	-	-	-	-
CO5	1	2	1	2	-	-	-	-	-	-	1
AVERAGE	1.25	1.25	0.75	2.0	00	00	00	00	00	00	0.75
FIFTH SEMESTER											
BP501T		**MEDICINAL CHEMISTRY II T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	3	3	3	3	3	3	3	3	2
CO2	3	2	3	3	3	3	3	3	3	3	2
CO3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	1	3	3	3	2	3	2	2	2	2
CO5	3	1	3	3	3	3	3	3	3	3	2
AVERAGE	3	1.4	3	3	3	2.4	3	2.4	2.4	2.4	2.2
BP502T		**FORMULATIVE PHARMACY T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	3	1	3	3	2	3	1	3
CO2	3	2	3	2	2	3	3	2	3	1	3
CO3	3	2	3	1	2	3	3	2	3	1	3
CO4	3	1	2	1	2	2	1	1	2	1	3
CO5	3	2	2	2	2	1	2	1	3	1	3
AVERAGE	3	1.8	2.6	1.8	1.8	2.4	2.4	1.6	2.8	1	3
BP503T		**PHARMACOLOGY II T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	2	3	3	3	3	2	3
CO2	2	1	1	3	1	1	1	1	1	3	2
CO3	3	3	2	3	1	3	2	1	2	3	3
CO4	3	3	2	3	1	3	2	1	2	3	3
CO5	3	2	2	1	3	3	2	2	3	2	2
AVERAGE	2.8	2.4	1.8	2.6	1.6	2.6	2	1.6	2.2	2.6	2.6
BP504T		**PHARMACOGNOSY AND PHYTOCHEMISTRY II T**									

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COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	1	2	3	3	-	1	2	1	2	2	3
CO2	2	1	3	2	-	1	1	-	2	-	3
CO3	2	2	2	1	-	1	2	-	3	1	3
CO4	1	1	1	2	-	1	1	-	2	1	3
CO5	3	2	1	3	1	1	1	1	2	1	3
AVERAGE	1.8	1.6	2	2.2	0.2	1	1.4	0.2	2.2	1	3
BP505T		**PHARMACEUTICAL JURISPRUDENCE T**									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	2	2	3	2	3	3	2	3	2	3
CO2	3	2	2	2	2	3	2	2	2	2	2
CO3	2	2	3	3	2	2	2	2	2	2	2
CO4	3	2	2	2	3	2	3	2	2	2	2
CO5	2	2	2	2	3	2	2	2	3	2	2
AVERAGE	2.4	2	2.2	2	2.4	2.4	2.4	2	2.4	2	2.2
BP506P		**FORMULATIVE PHARMACY P**									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	2	3	2	2	2	2	2	1	3
CO2	3	3	2	3	2	2	2	2	2	1	3
CO3	3	1	2	1	2	1	2	2	2	1	3
CO4	3	1	2	1	2	1	2	2	1	1	3
C05	3	2	2	1	2	1	2	1	1	1	3
AVERAGE	3	2	2	1.8	2	1.4	2	1.8	1.6	1	3
BP507P		**PHARMACOLOGY II P**									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	2	3	2	1	3	1	3	2	3
CO2	2	1	1	3	2	1	1	1	1	3	2
CO3	3	3	2	3	2	1	2	1	2	3	3
CO4	3	3	2	3	2	1	2	1	2	3	3
CO5	3	2	2	3	2	1	2	2	3	2	2
AVERAGE	2.8	2.4	1.8	3	2	1	2	1.2	2.2	2.6	2.6
BP508P		**PHARMACOGNOSY AND PHYTOCHEMISTRY II P**									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	1	1	-	-	1	-	2	2	3
CO2	2	2	1	-	-	-	1	-	2	-	3
CO3	3	2	2	-	1	1	1	1	2	1	3
CO4	3	2	-	-	1	1	1	1	2	1	3
CO5	2	2	3	1	1	1	1	1	2	2	3

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AVERAGE	2.6	2	1.4	0.4	0.6	0.6	1	0.6	2	1.2	3
SIXTH SEMESTER											
BP601T		**MEDICINAL CHEMISTRY III T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	1	2	2	2	2	3	2	3
CO2	3	2	1	1	2	2	2	1	2	3	2
CO3	3	2	1	1	2	2	2	2	2	3	2
CO4	3	2	1	-	2	3	2	1	2	3	2
CO5	3	2	2	-	2	3	2	2	3	2	2
AVERAGE	3	2	1.2	0.6	2	2.2	2	1.6	2.4	2.6	2.2
BP602T		**PHARMACOLOGY III T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	1	1	2	1	3	3	1	3
CO2	3	2	2	2	1	2	1	3	3	1	3
CO3	3	2	3	3	1	2	1	3	3	1	3
CO4	3	3	3	3	2	2	1	3	3	1	3
CO5	3	3	2	3	2	2	1	3	3	1	3
AVARAGE	3	2.4	2.4	2.4	1.4	2	1	3	3	1	3
BP603T		**HERBAL DRUG TECHNOLOGY T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	1	2	2	2	1	1	1	2	1	3	2
CO2	3	3	-	3	-	2	2	-	3	-	3
CO3	3	1	2	3	-	1	1	-	1	-	3
CO4	3	1	1	1	2	1	1	1	3	1	2
CO5	3	2	1	1	2	2	1	1	1	1	1
AVARAGE	2.6	1.8	1.2	2	1	1.4	1.2	0.8	1.8	1	2.2
BP604T		**BIOPHARMACEUTICS AND PHARMACOKINETICS T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	1	1	2	2	1	3	1	3
CO2	3	1	1	2	1	2	1	1	3	1	3
CO3	3	1	1	1	1	2	1	2	3	1	3
CO4	3	1	1	1	1	2	1	2	3	1	3
CO5	3	1	1	1	1	2	1	1	3	1	3
AVERAGE	3	1.4	1.2	1.2	1	2	1.2	1.4	3	1	3
BP605T		**PHARMACEUTICAL BIOTECHNOLOGY T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	1	1	2	2	1	3	1	3
CO2	3	1	1	2	1	2	1	1	3	1	3

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CO3	3	1	1	1	1	2	1	2	3	1	3
CO4	3	1	1	1	1	2	1	2	3	1	3
CO5	3	1	1	1	1	2	1	1	3	1	3
AVERAGE	3	1.4	1.2	1.2	1	2	1.2	1.4	3	1	3
BP606T		**QUALITY ASSURANCE T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	1	3	3	3	3	3	3	3
CO2	3	2	2	1	2	3	2	2	2	2	3
CO3	3	3	3	-	1	2	3	1	3	2	3
CO4	3	2	3	1	1	2	2	1	2	1	3
CO5	3	3	-	1	2	2	2	3	-	1	2
AVERAGE	3	2.6	2.75	1.0	1.8	2.4	2.4	2.0	2.5	1.8	2.8
BP607P		**MEDICINAL CHEMISTRY III P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	1	2	1	1	2	1	3	2	3
CO2	3	2	1	2	1	1	1	2	2	2	2
CO3	3	2	1	2	1	1	2	2	1	2	1
CO4	3	2	2	3	1	1	1	1	2	1	3
CO5	3	2	2	2	1	1	2	2	3	2	3
AVERAGE	3	1.8	1.4	2.4	1	1	1.6	1.6	2.2	1.8	2.4
BP608P		**PHARMACOLOGY III P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	2	1	1	1	1	1	1	3
CO2	3	2	2	2	1	1	1	1	1	1	3
CO3	3	2	3	3	1	1	1	1	1	1	3
CO4	3	2	3	3	1	1	1	1	1	1	3
CO5	3	3	3	3	1	1	1	1	1	1	3
AVERAGE	3	2.2	2.6	2.6	1	1	1	1	1	1	3
BP609P		**HERBAL DRUG TECHNOLOGY P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	1	-	1	1	1	2	1	2
CO2	3	2	1	1	1	1	1	1	2	-	3
CO3	3	2	1	2	1	2	1	1	2	1	3
CO4	3	1	-	2	-	1	1	-	1	-	2
CO5	3	2	1	2	-	1	1	-	1	1	2
AVERAGE	3	1.8	0.8	1.6	0.4	1.2	1	0.6	1.6	0.6	2.4
SEVENTH SEMESTER											
BP701T		**INSTRUMENTAL METHODS OF ANALYSIS – THEORY**									

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COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3	1	2	1	1	-	-	3
CO2	3	1	2	3	1	2	1	1	-	-	3
CO3	3	3	3	3	2	3	1	1	-	-	3
CO4	3	3	3	3	2	3	-	2	-	-	3
CO5	3	2	2	3	3	2	-	1	1	1	2
AVERAGE	3	2.4	2.6	3	1.8	2.4	1	1.2	1	1	2.8
BP702T		INDUSTRIAL PHARMACY T									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	2	3	2	3	2	3	3	1	1	1
CO2	2	3	2	2	2	2	1	2	1	1	1
CO3	2	1	1	1	1	3	3	1	1	1	1
CO4	2	1	1	1	1	3	3	1	1	1	1
CO5	2	2	3	1	2	1	3	2	2	3	2
AVERAGE	2	1.8	2	1.4	1.8	2.2	2.6	1.8	1.2	1.4	1.2
BP703T		PHARMACY PRACTICE T									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	1	1	1	1	2	1	1	2	2	1
CO2	3	1	1	1	1	2	1	1	2	2	1
CO3	3	1	1	1	1	2	1	1	2	2	1
CO4	3	1	1	1	1	2	1	1	2	2	1
CO5	3	1	1	1	1	2	1	1	2	2	1
AVERAGE	3	1	1	1	1	2	1	1	2	2	1
BP704T		NOVEL DRUG DELIVERY SYSTEM T									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3	2	2	2	2	3	2	3
CO2	3	3	3	3	2	2	2	2	2	2	3
CO3	3	3	3	1	1	2	2	2	2	2	3
CO4	3	2	2	2	2	2	2	2	3	2	3
CO5	3	3	3	3	3	3	2	2	3	2	3
AVERAGE	3	2.8	2.8	2.4	2	2.2	2	2	2.6	2	3
BP705P		INSTRUMENTAL METHODS OF ANALYSIS P									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3	2	2	3	-	2	-	3
CO2	3	3	3	3	1	2	2	2	1	-	2
CO3	3	3	3	3	2	2	1	2	-	-	3
CO4	3	1	2	3	1	2	3	1	1	-	1

DEVAKI AMMA MEMORIAL COLLEGE OF PHARMACY

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CO5	3	3	3	3	-	2	-	2	-	-	3
AVERAGE	3	2.6	2.8	3	1.5	2	2.25	1.75	1.33	-	2.4
		EIGTH SEMESTER									
BP801T		**BIOSTATISTICS AND RESEARCH METHODOLOGY**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	1	2	1	1	1	3	1	2
CO2	2	1	3	1	1	1	1	1	1	1	1
CO3	2	1	3	1	2	1	2	1	2	1	1
CO4	2	1	2	2	1	2	1	1	1	1	1
CO5	3	1	1	3	1	1	2	2	2	1	2
AVERAGE	2.4	1.4	2.2	1.6	1.4	1.2	1.4	1.2	1.8	1	1.4
BP802T		**SOCIAL AND PREVENTIVE PHARMACY**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	2	3	3	2	3	2	3
CO2	2	3	2	2	2	3	3	3	2	3	2
CO3	3	3	2	1	3	2	3	2	2	3	2
CO4	3	2	3	1	2	3	2	3	2	3	2
CO5	3	2	2	1	3	3	2	2	3	2	2
AVERAGE	2.8	2.6	2.2	1.8	2.4	2.8	2.6	2.4	2.4	2.6	2.2
BP803ET		**PHARMACEUTICAL MARKETING**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	1	3	3	3	2	3	1	3
CO2	3	3	3	3	3	3	3	2	3	1	3
CO3	3	3	3	3	3	3	3	2	3	1	3
CO4	3	3	3	3	2	3	3	2	3	1	3
CO5	3	3	3	3	3	3	3	2	3	1	3
AVERAGE	3.0	3	2.8	2.6	2.8	3	3	2.0	3	1.0	3
BP804ET		**PHARMACEUTICAL REGULATORY SCIENCE**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	1	3	3	3	2	3	1	3
CO2	3	3	3	3	3	3	3	2	3	1	3
CO3	3	3	3	3	3	3	3	2	3	1	3
CO4	3	3	3	3	2	3	3	2	3	1	3
CO5	3	3	3	3	3	3	3	2	3	1	3
AVERAGE	3.0	3	2.8	2.6	2.8	3	3	2.0	3	1.0	3
BP805ET		**PHARMACOVIGILANCE**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**

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CO1	3	3	--	1	3	3	2	--	3	2	3
CO2	3	3	3	3	--	--	--	3	3	3	3
CO3	3	3	3	3	2	2	2	3	3	3	3
CO4	3	3	--	--	3	3	3	3	3	3	3
CO5	3	--	3	2	--	3	3	3	3	3	3
AVERAGE	3	3	3	2.25	2.67	2.75	2.5	3	3	2.8	3
BP806ET		**QUALITY CONTROL AND STANDARDIZATION OF HERBS**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	3	3	3	3	2	2
CO2	3	3	3	3	-	1	1	2	1	2	3
CO3	3	3	3	3	2	2	3	2	3	3	3
CO4	3	3	3	3	2	2	1	3	3	2	3
CO5	3	3	3	3	1	-	-	1	1	1	3
AVERAGE	**3**	**3**	**3**	**3**	**1.25**	**1.25**	**1.25**	**2**	**2**	**2**	**3**
BP807ET		**COMPUTER AIDED DRUG DESIGNING**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	1	1	1	1	1	-	2	1	2	1	-
CO2	3	2	1	1	1	2	1	2	-	-	-
CO3	2	2	1	1	2	2	-	2	-	-	1
CO4	3	2	1	2	2	2	-	2	-	1	-
CO5	2	2	2	2	1	2	-	1	1	-	-
AVERAGE	**2.2**	**1.8**	**1.2**	**1.4**	**1.4**	**1.2**	**1.5**	**1.6**	**1.5**	**1.0**	**1.0**
BP808ET		**CELL AND MOLECULAR BIOLOGY**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	1	1	1	1	2	2	1	3
CO2	3	2	2	2	1	1	2	2	2	1	3
CO3	3	2	3	3	1	2	2	2	2	1	3
CO4	3	3	3	3	2	2	2	2	2	1	3
CO5	3	3	2	3	2	2	2	2	2	1	3
AVARAGE	3	2.4	2.4	2.4	1.4	1.6	1.8	2	2	1	3
BP809ET		**COSMETIC SCIENCE**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	1	1	2	2	1	1	2	3
CO2	3	1	2	1	1	3	2	1	1	2	3
CO3	3	2	1	3	1	3	2	1	1	2	3
CO4	3	1	1	3	1	3	1	1	1	1	3
CO5	3	1	1	1	1	3	2	1	2	2	3
AVERAGE	3	1.4	1.6	1.8	1	2.8	1.8	1	1.2	1.8	3

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BP811ET		ADVANCED INSTRUMENTATION TECHNIQUES									
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	-	-	3	3	-	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3
AVERAGE	3	3	3	3	3	3	3	3	3	3	3

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CO PO MAPPING PHARM D

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CO PO MAPPING											
FIRST PHARM D											
1.1	HUMAN ANATOMY AND PHYSIOLOGY T										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	-	3	3	2	3	-	-	3	-	3
CO2	2	-	3	-	2	2	-	-	3	-	2
CO3	3	-	2	2	-	2	2	-	3	-	2
CO4	3	-	3	-	3	2	2	-	3	-	3
CO5	2	-	2	-	-	-	-	-	2.8	-	3
AVERAGE	2.6	-	2.6	1	1.4	1.8	0.8	-	2	-	2.6
HUMAN ANATOMY AND PHYSIOLOGY P											
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	-	3	2	1	2	3	3	3	2	2
CO2	3	1	3	3	1	2	3	3	3	2	2
CO3	3	1	3	2	2	2	2	3	3	2	2
CO4	3	1	2	2	1	2	2	2	3	1	1
CO5	3	2	2	3	1	1	2	3	3	1	1
AVERAGE	3	1	2.6	2.4	1.2	1.8	2.4	2.8	3	1.6	1.6
PHARMACEUTICS T											
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	1	1	1	1	2	2	1	1	1	1
CO2	3	2	2	1	2	3	3	3	3	2	3
CO3	3	3	3	3	2	3	3	2	3	2	3
CO4	3	3	2	1	2	3	3	2	3	1	3
CO5	3	2	2	3	2	3	3	2	2	2	1
AVERAGE	3	2.2	2	1.8	1.8	2.8	2.8	2	2.4	1.6	2.2
PHARMACEUTICS P											
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	3	1	1	3	3	3	3	1	3
CO2	3	2	2	2	1	1	3	1	1	1	2
CO3	3	1	1	1	2	3	3	3	3	1	3
CO4	3	3	3	3	2	3	3	2	3	2	3
CO5	3	1	3	2	1	3	3	1	3	2	2
AVERAGE	3	1.8	2.4	1.8	1.4	2.6	3	2	2.6	1.4	2.6
MEDICINAL BIOCHEMISTRY T											
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11

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CO1	3	-	3	1	3	3	3	3	3	2	3
CO2	3	2	2	-	1	2	3	2	3	2	3
CO3	2	-	1	2	-	-	1	1	1	-	1
CO4	3	2	2	2	1	2	2	3	2	2	2
CO5	3	1	1	1	-	1	1	1	1	1	2
AVERAGE	2.8	1	1.8	1.2	1	1.6	2	2	2	1.4	2.2
1.3	**MEDICINAL BIOCHEMISTRY P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	1	3	2	2	1	1	2	2	2	2
CO2	2	1	1	-	1	1	-	1	1	-	1
CO3	3	3	3	2	3	2	2	3	3	1	2
CO4	3	1	2	2	3	1	2	3	2	2	3
CO5	3	-	3	-	1	1	2	2	1	1	2
AVERAGE	2.6	1.2	2.4	1.2	2	1.2	1.4	2.2	1.8	1.2	2
1.4	**PHARMACEUTICAL ORGANIC CHEMISTRY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	3	3	1	-	-	-	-	1	3
CO2	3	3	3	3	-	-	-	-	3	3	3
CO3	3	3	2	3	2	3	3	3	3	3	3
CO4	3	3	2	-	-	-	-	2	2	-	-
CO5	3	2	2	3	2	3	3	2	2	2	3
AVERAGE	**3**	**2.4**	**2.6**	**2.4**	**1.0**	**1.2**	**1.2**	**1.4**	**2.0**	**1.8**	**2.4**
1.4	**PHARMACEUTICAL ORGANIC CHEMISTRY P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	2	3	2	1	1	1	1	2
CO2	3	2	3	1	2	2	-	2	2	-	1
CO3	3	3	3	3	2	3	2	2	2	-	-
CO4	2	2	3	3	2	3	-	1	1	-	-
CO5	3	3	3	3	3	3	2	2	2	-	-
AVERAGE	**2.8**	**2.6**	**2.8**	**2.4**	**2.4**	**2.6**	**1.0**	**1.6**	**1.6**	**1.0**	**1.5**
1.5	**PHARMACEUTICAL INORGANIC CHEMISTRY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	1	1	2	1	2	3	2	3
CO2	2	1	1	1	1	1	2	2	1	2	1
CO3	3	1	2	1	2	1	2	1	1	1	2
CO4	3	2	1	1	1	3	2	2	1	2	2
CO5	2	2	2	1	1	2	3	2	3	2	2

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AVERAGE	2.6	1.6	1.4	1	1.2	1.8	2	1.8	1.8	1.8	2
1.5	**PHARMACEUTICAL INORGANIC CHEMISTRY P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	1	1	2	1	2	3	2	3
CO2	2	1	1	1	1	1	2	2	1	2	1
CO3	3	1	2	1	2	1	2	1	1	1	2
CO4	3	2	1	1	1	3	2	2	1	2	2
CO5	2	2	2	1	1	2	3	2	3	2	2
AVERAGE	2.6	1.6	1.4	1	1.2	1.8	2	1.8	1.8	1.8	2
SECOND PHARM D											
2.1	**PATHOPHYSIOLOGY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	1	1	1	2	1	1	2	1	1
CO2	3	1	1	1	1	2	1	1	2	1	1
CO3	3	1	1	1	1	2	1	1	2	1	1
CO4	3	1	1	1	1	2	1	1	2	1	1
CO5	3	1	1	1	1	2	1	1	2	1	1
AVERAGE	3	1	1	1	1	2	1	1	2	1	1
2.2	**PHARMACEUTICAL MICROBIOLOGY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	3	2	3	2	3	3	2	3	2	3
CO2	2	3	2	2	2	2	2	2	2	2	2
CO3	3	3	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2
CO5	2	2	3	2	2	3	2	2	2	2	2
AVERAGE	2.2	2.6	2.2	2.2	2	2.4	2.2	2	2.2	2	2.2
2.2	**PHARMACEUTICAL MICROBIOLOGY P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	3	1	3	3	2	3	1	3
CO2	3	2	2	3	2	3	3	2	3	1	3
CO3	3	2	2	3	1	3	3	2	3	1	3
CO4	3	2	2	3	2	3	3	2	3	1	3
CO5	3	2	2	3	1	3	3	2	3	1	3
AVERAGE	3	2	2	3	1.4	3	3	2	3	1	3
2.3	**PHARMACOGNOSY AND PHYTOPHARMACEUTICALS T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**

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CO1	3	3	2	3	2	3	3	2	3	2	3
CO2	2	2	2	2	2	2	3	2	2	3	1
CO3	3	3	2	1	3	2	3	2	2	2	2
CO4	2	2	3	2	2	3	2	3	2	3	2
CO5	3	2	2	2	3	3	2	2	3	2	2
AVERAGE	2.6	2.4	2.2	2.0	2.4	2.6	2.6	2.2	2.4	2.4	2.0
2.3	**PHARMACOGNOSY AND PHYTOPHARMACEUTICALS P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	3	2	3	2	3	3	2	3	2	3
CO2	2	2	2	2	2	2	3	2	2	3	2
CO3	2	3	3	3	3	2	2	3	2	2	2
CO4	2	2	3	2	2	3	2	3	2	3	2
CO5	3	2	2	2	3	3	2	3	3	2	2
AVERAGE	2.2	2.4	2.4	2.4	2.4	2.6	2.4	2.6	2.4	2.4	2.2
2.4	**PHARMACOLOGY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	-	2	1	2	3	2	3	3	2	3
CO2	2	1	2	1	1	1	1	3	1	1	1
CO3	3	1	1	1	1	1	1	3	1	1	1
CO4	3	1	1	1	1	1	1	3	1	1	1
CO5	3	1	1	1	1	1	1	3	1	1	1
AVERAGE	2.8	0.8	1.4	1	1.2	1.4	1.2	3	1.4	1.2	1.4
2.5	**COMMUNITY PHARMACY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	1	3	3	3	3	3	2	2
CO2	3	2	2	1	3	3	3	3	3	2	2
CO3	2	3	2	1	2	2	3	2	2	3	3
CO4	2	3	2	2	1	2	3	2	3	2	2
CO5	3	2	3	2	3	2	2	2	3	2	3
AVERAGE	2.6	2.4	2.2	1.4	2.4	2.4	2.8	2.6	2.8	2.2	2.6
2.6	**PHARMACOTHERAPEUTICS T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	1	1	2	3	3	3	1	2
CO2	3	3	3	2	1	2	1	3	2	2	3
CO3	3	3	3	2	2	2	2	3	2	3	2
CO4	3	3	3	2	2	2	2	3	2	3	2
CO5	3	2	2	2	3	3	2	2	3	2	2
AVERAGE	3	2.8	2.8	1.8	1.8	2.2	2	2.8	2.4	2.2	2.2

DEVAKI AMMA MEMORIAL COLLEGE OF PHARMACY

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2.6	PHARMACOTHERAPEUTICS P										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	2	3	2	2	3	2	1	2
CO2	3	3	3	2	3	2	2	2	2	2	3
CO3	3	3	2	3	2	3	3	3	3	2	3
CO4	3	3	3	3	2	2	2	3	3	3	3
CO5	3	2	2	3	3	3	3	3	3	2	3
AVERAGE	3	2.8	2.6	2.6	2.6	2.4	2.4	2.4	2.6	2.2	2.8
THIRD PHARM D											
3.1	PHARMACOLOGY II T										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	1	2	2	1	3	3	2	3	2	3
CO2	3	1	2	2	1	3	3	2	3	2	3
CO3	3	-	2	3	1	3	3	2	1	-	3
CO4	3	-	2	2	1	3	3	2	3	2	3
CO5	3	1	2	2	1	3	3	2	3	2	3
AVERAGE	**3**	**0.6**	**2**	**2.2**	**1**	**3**	**3**	**2**	**2.6**	**1.6**	**3**
3.2	PHARMACEUTICAL ANALYSIS T										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	-	-	3	3	-	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3
AVERAGE	3	3	3	3	3	3	3	3	3	3	3
3.2	PHARMACEUTICAL ANALYSIS P										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3
AVERAGE	3	3	3	3	3	3	3	3	3	3	3
3.3	PHARMACOTHERAPEUTICS-II T										
COURSE OUTCOME	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	2	1	1	1	1	1	1	1	2
CO2	3	3	3	3	2	1	2	2	2	1	3

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CO3	3	3	3	2	2	2	2	2	2	1	3
CO4	3	3	3	2	2	2	3	3	2	1	3
CO5	3	3	3	3	2	3	3	3	3	1	3
AVERAGE	3	3	3	2.2	1.8	1.8	2.2	2.2	2	1	3
3.3	**PHARMACOTHERAPEUTICS-II P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	-	1	1	1	2	1	-	-
CO2	3	3	3	3	2	1	2	2	2	1	2
CO3	3	3	3	3	3	2	2	3	3	2	3
CO4	3	3	1	2	2	1	2	2	2	1	1
CO5	3	3	3	3	3	1	3	3	3	1	1
AVERAGE	3	2.8	2.4	2.2	2.2	1.2	2	2.4	2.2	1.25	1.75
3.4	**PHARMACEUTICAL JURISPRUDENCE**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	-	3	3	2	3	-	2	2	-	2
CO2	2	-	3	-	2	2	-	2	2	-	2
CO3	3	-	2	2	-	2	2	2	2	-	2
CO4	3	-	3	-	3	2	2	2	2	-	2
CO5	2	-	2	-	-	-	-	2	2	-	3
AVERAGE	2.6	-	2.6	1	1.4	1.8	0.8	2	2	-	2.2
3.5	**MEDICINAL CHEMISTRY T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	3	-	2	-	-	3	-	2
CO2	2	3	2	2	-	3	3	-	2	1	2
CO3	3	2	2	1	1	2	3	2	2	2	2
CO4	3	1	3	1	-	3	-	3	2	-	-
CO5	3	2	2	1	1	3	2	2	3	-	2
AVERAGE	3	2	2	1.8	1	2.8	2.6	2.3	2.4	1.5	2
3.5	**MEDICINAL CHEMISTRY P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	2	0	0	1	0	2	1	2
CO2	3	2	1	2	0	0	1	0	2	1	2
CO3	3	2	1	2	0	0	2	0	1	1	2
CO4	3	3	2	3	0	0	1	0	1	2	2
CO5	3	3	3	3	1	1	1	1	1	1	1
AVERAGE	3	2.4	1.6	2.4	1	1	1.2	1	1.4	1.2	1.8
3.6	**PHARMACEUTICAL FORMULATIONS T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**

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CO1	3	3	3	2	3	2	2	3	3	1	2
CO2	3	3	3	2	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	3	3	1	2
CO4	3	3	3	2	3	2	2	3	3	2	2
CO5	3	3	3	3	3	3	3	3	3	2	2
AVERAGE	3	3	3	2.4	3	2.4	2.4	3	3	1.6	2.2
3.6	**PHARMACEUTICAL FORMULATIONS P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	2	3	2	2	3	3	1	2
CO2	3	3	3	2	3	2	2	3	3	2	3
CO3	3	2	2	3	3	3	3	3	3	1	2
CO4	3	3	3	2	3	2	2	3	3	2	2
CO5	3	3	3	3	3	3	3	3	3	2	2
AVERAGE	3	2.8	2.8	2.4	3	2.4	2.4	3	3	1.6	2.2
FOURTH PHARM D											
4.1	**PHARMACOTHERAPEUTICS III T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	2	2	1	2	1	1	2	1	1
CO2	3	1	2	2	1	2	1	1	2	1	1
CO3	3	1	2	2	1	2	1	1	2	1	1
CO4	3	1	2	2	1	2	1	1	2	1	1
CO5	3	1	2	2	1	2	1	1	2	1	1
AVERAGE	3	1	2	2	1	2	1	1	2	1	1
4.1	**PHARMACOTHERAPEUTICS III P**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	3	2	1	2	1	1	2	1	1
CO2	3	1	3	2	1	2	1	1	2	1	1
CO3	3	1	3	2	1	2	1	1	2	1	1
CO4	3	1	3	2	1	2	1	1	2	1	1
CO5	3	1	3	2	1	2	1	1	2	1	1
AVERAGE	3	1	3	2	1	2	1	1	2	1	1
4.2		**HOSPITAL PHARMACY T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	2	3	2	2	2	3
CO2	3	3	3	3	3	3	3	2	2	2	2
CO3	3	3	3	3	2	3	3	3	3	3	2
CO4	3	3	3	3	3	2	2	3	2	3	2
CO5	3	2	2	2	3	3	2	2	3	2	2

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AVERAGE	3	2.8	2.8	2.8	2.8	2.6	2.6	2.4	2.4	2.4	2.2
4.2		**HOSPITAL PHARMACY P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	2	3	2	2	2	3
CO2	3	3	2	2	3	2	3	2	3	2	3
CO3	3	3	3	3	2	3	3	3	3	3	2
CO4	3	3	3	3	3	2	2	2	3	3	2
CO5	3	3	3	2	3	3	2	2	3	2	2
AVERAGE	3	3	2.8	2.6	2.8	2.4	2.6	2.4	2.8	2.4	2.4
4.3		**CLINICAL PHARMACY T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	2	3
CO4	3	3	3	2	1	3	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3
AVERAGE	3	3	3	2.8	2.6	3	3	3	2.8	2.8	3
4.3		**CLINICAL PHARMACY P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	2	3	3	3	2	3	3	3
AVERAGE	3	3	3	2.8	3	3	3	2.8	3	3	3
4.4		**BIOSTATISTICS & RESEARCH METHODOLOGY T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	3	2	3	3	3	2	2	2
CO2	2	3	2	3	2	2	2	3	2	1	2
CO3	2	2	2	3	2	3	2	1	1	1	3
CO4	2	2	3	1	2	2	1	2	1	3	1
CO5	3	1	2	2	1	1	1	1	1	2	1
AVERAGE	**2.4**	**2**	**2.4**	**2.4**	**1.8**	**2.2**	**1.8**	**2**	**1.4**	**1.8**	**1.8**
4.5		**BIOPHARMACEUTICS AND PHARMACOKINETICS T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	2	1	2	2	2	2	3	3

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CO2	3	2	2	2	1	2	2	2	2	3	3
CO3	3	1	3	1	1	1	1	1	1	1	2
CO4	3	1	3	1	1	1	1	1	1	1	2
CO5	3	1	2	2	1	3	2	2	3	3	3
AVERAGE	3	1.4	2.4	1.6	5	1.8	1.6	1.6	1.8	2.2	2.6
4.5		**BIOPHARMACEUTICS AND PHARMACOKINETICS P**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	3	2	3	3	2	3	1	3
CO2	3	2	2	3	2	3	3	2	3	1	3
CO3	3	2	2	3	2	3	3	2	3	1	3
CO4	3	2	2	3	2	3	3	2	3	1	3
CO5	3	2	2	3	2	3	3	2	3	1	3
AVERAGE	3	2	2	3	2	3	3	2	3	1	3
4.6		**CLINICAL TOXICOLOGY**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	1	2	3	3	3	3	2	3
CO2	3	2	2	1	3	2	3	2	3	3	2
CO3	2	3	2	1	2	3	2	2	2	2	2
CO4	3	2	2	1	3	2	2	3	2	3	2
CO5	3	2	3	1	2	3	2	3	3	2	2
AVERAGE	2.8	2.2	2.2	1	2.4	2.6	2.4	2.6	2.6	2.4	2.2
FIFTH PHARM D											
5.1		**CLINICAL RESEARCH T**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	2	3	2	3	3	3	2	3
CO2	3	3	3	--	3	3	3	3	3	3	3
CO3	3	3	3	--	3	3	3	3	3	3	3
CO4	3	3	3	--	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3
AVERAGE	3	2.8	2.8	2.5	3	2.8	3	3	3	2.8	3
5.2		**PHARMACOEPIDEMIOLOGY AND PHARMACOECONOMICST**									
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	3	2	1	2	1	1	2	1	1
CO2	3	1	3	2	1	2	1	1	2	1	1
CO3	3	1	3	2	1	2	1	1	2	1	1
CO4	3	1	3	2	1	2	1	1	2	1	1
CO5	3	1	3	2	1	2	1	1	2	1	1

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AVERAGE	3	1	3	2	1	2	1	1	2	1	1
5.3	**CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC DRUG MONITORING T**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	3	1	1	2	2	2	2	3
CO2	3	2	3	2	2	1	2	2	2	2	3
CO3	3	2	3	2	1	1	2	2	2	2	3
CO4	3	2	3	3	1	1	2	2	2	2	3
CO5	3	2	3	3	2	1	2	2	2	2	3
AVERAGE	**3**	**2**	**3**	**2.6**	**1.4**	**1**	**2**	**2**	**2**	**2**	**3**

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CO PO MAPPING - M PHARM

PHARMACEUTICAL ANALYSIS

PHARMACEUTICS

PHARMACEUTICAL CHEMISTRY

PHARMACOLOGY

DEVAKI AMMA MEMORIAL COLLEGE OF PHARMACY

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FIRST SEMESTER											
MPT 101T	**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	-	2	-	-	-	-	2
CO2	3	3	3	3	-	3	-	1	-	-	2
CO3	3	3	3	3	-	-	-	1	2	-	2
CO4	3	2	3	3	1	-	-	-	-	-	2
CO5	3	3	3	3	-	-	-	-	2	-	-
AVERAGE	**3**	**2.8**	**3**	**3**	**1**	**2.5**	**-**	**1**	**2**	**-**	**2**
MPA 102T	**ADVANCED PHARMACEUTICAL ANALYSIS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	1	-	1	2	1	3	-	3
CO2		2	2	1	3	-	1	3	1	2	1
CO3	3	1	1	3	1	1	1	2	2	2	2
CO4	3	1	-	3	-	1	-	1	2	2	2
CO5	3	1	1	2	1	2	2	2	3	1	2
AVERAGE	**3**	**2**	**1**	**1.8**	**1**	**1.2**	**1.6**	**1.4**	**2.4**	**1.4**	**2.2**
MPA 103T	**PHARMACEUTICAL VALIDATION**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	-	-	3	3	3	3	3	3
CO2	3	2	2	-	-	3	3	3	3	3	3
CO3	3	2	2	3	3	3	3	3	3	3	3
CO4	3	2	2	3	3	3	3	3	3	3	3
CO5	3	2	2	3	3	3	3	3	3	3	3
AVERAGE	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
MPA 104T	**FOOD ANALYSIS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	1	1	-	1	2	1	3	-	3
CO2		2	2	1	3	-	1	3	1	2	1
CO3	3	1	1	3	1	1	1	2	2	2	2
CO4	3	1	-	3	-	1	-	1	2	2	2
CO5	3	1	1	2	1	2	2	2	3	1	2
AVERAGE	**3**	**2**	**1**	**1.8**	**1**	**1.2**	**1.6**	**1.4**	**2.4**	**1.4**	**2.2**
MPA 105P	**PHARMACEUTICAL ANALYSIS PRACTICAL - I**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	-	3	3	-	-	-	2	2	-	2
CO2	3	-	3	3	-	-	-	2	3	-	2
CO3	3	-	3	3	-	-	-	2	-	-	2
CO4	3	-	3	3	-	-	-	1	-	-	2

DEVAKI AMMA MEMORIAL COLLEGE OF PHARMACY

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CO5	3	-	3	3	-	-	-	3	3	3	2
AVERAGE	**3**	**-**	**3**	**3**	**-**	**-**	**-**	**2**	**2.7**	**3**	**2**
SECOND SEMESTER											
MPA 201T	**ADVANCED INSTRUMENTAL ANALYSIS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	1	1	-	1	2	1	3	-	3
CO2		2	2	1	3	-	1	3	1	2	1
CO3	3	1	2	3	1	1	-	2	2	2	2
CO4	3	1	2	3	-	1	-	1	2	2	2
CO5	3	1	1	2	-	-	-	2	3	1	2
AVERAGE	**3**	**1.6**	**1.4**	**2.4**	**1**	**1**	**1**	**1.4**	**2.4**	**1.5**	**2.2**
MPA 202T	**MODERN BIO-ANALYTICAL TECHNIQUES**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	-	2	-	2	3	3	2
CO2	3	3	3	3	-	2	-	2	3	3	3
CO3	3	3	3	3	-	3	-	3	3	3	3
CO4	3	3	3	3	-	2	-	2	3	3	3
CO5	3	3	3	3	-	2	-	3	3	3	3
AVERAGE	**3**	**3**	**3**	**3**	**-**	**2.2**	**-**	**2.4**	**3**	**3**	**2.8**
MPA 203T	**QUALITY CONTROL AND QUALITY ASSURANCE**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3
AVERAGE	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
MPA 204T	**HERBAL AND COSMETIC ANALYSIS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	-	2	-	2	3	3	2
CO2	3	3	3	3	-	2	-	2	3	3	3
CO3	3	3	3	3	-	3	-	3	3	3	3
CO4	3	3	3	3	-	2	-	2	3	3	3
CO5	3	3	3	3	-	3	-	3	3	3	3
AVERAGE	**3**	**3**	**3**	**3**	**-**	**2.4**	**-**	**2.4**	**3**	**3**	**2.8**
MPA 205P	**PHARMACEUTICAL ANALYSIS PRACTICAL – II**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	1	3	3	3	2	3	3	3
CO2	3	2	3	1	3	3	3	2	3	3	3

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CO3	3	2	3	1	3	3	3	2	3	3	3
CO4	3	2	3	1	3	3	3	2	3	3	3
CO5	3	2	3	1	3	3	3	2	3	3	3
AVERAGE	**3**	**2**	**3**	**1**	**3**	**3**	**3**	**2**	**3**	**3**	**3**
THIRD SEMESTER											
MRM 301T	**RESEARCH METHODOLOGY AND BIOSTATISTICS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	**-**	**-**	2	3	**-**	**-**	3	2	3
CO2	3	2	**-**	**-**	3	2	**-**	**-**	2	3	3
CO3	2		3	3	2	**-**	**-**		2	1	2
CO4	2	1	2	3	**-**	**-**	**-**	**-**	2	1	1
CO5	3	3		2	**-**	3	**-**	**-**	2	3	3
AVERAGE	**2.4**	**1.6**	**1.0**	**1.6**	**1.4**	**1.6**	**-**	**-**	**2.2**	**2.0**	**2.4**

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FIRST SEMESTER											
MPT 101T	**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	-	2	-	-	-	-	2
CO2	3	3	3	3	-	3	-	1	-	-	2
CO3	3	3	3	3	-	-	-	1	2	-	2
CO4	3	2	3	3	1	-	-	-	-	-	2
CO5	3	3	3	3	-	-	-	-	2	-	-
AVERAGE	**3**	**2.8**	**3**	**3**	**1**	**2.5**	**-**	**1**	**2**	**-**	**2**
MPH 102T	**DRUG DELIVERY SYSTEMS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	1	2	1	3	1	1	2	1	2
CO2	3	1	1	2	1	3	1	1	2	1	2
CO3	3	1	1	2	1	3	1	1	2	1	2
CO4	3	1	1	2	1	3	1	1	2	1	2
CO5	3	1	1	2	1	3	1	1	2	1	2
AVERAGE	3	1	1	2	1	3	1	1	2	1	2
MPH 103T	**MODERN PHARMACEUTICS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	2	1	1	2	2	1	1	2	2
CO2	3	1	1	2	2	1	3	2	2	3	1
CO3	2	3	2	3	1	1	2	2	2	3	2
CO4	3	1	3	3	1	1	2	1	1	2	1
CO5	3	2	3	3	1	2	2	2	1	2	2
AVERAGE	**2.8**	**1.6**	**2.2**	**2.4**	**1.2**	**1.4**	**2.2**	**1.6**	**1.4**	**2.4**	**1.6**
MPH 104T	**REGULATORY AFFAIRS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	1	2	1	-	-	-	-	1	2
CO2	3	1	1	2	1	-	-	-	-	1	2
CO3	3	1	1	2	1	-	-	-	-	1	2
CO4	3	1	1	2	1	-	-	-	-	1	2
CO5	3	1	1	2	1	-	-	-	-	1	2
AVERAGE	3	1	1	2	1	-	-	-	-	1	2
MPH105P	**PHARMACEUTICS PRACTICAL I**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	3	3	1	1	3	1	2	3	3
CO2	2	2	2	3	2	2	2	2	2	3	3
CO3	3	2	3	2	2	2	3	2	2	2	3
CO4	3	2	3	2	2	2	3	2	2	2	3
CO5	3	2	3	2	2	2	3	2	2	2	3

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AVERAGE	**2.8**	**1.8**	**2.8**	**2.4**	**1.8**	**1.8**	**2.8**	**1.8**	**2.0**	**2.4**	**3.0**
SECOND SEMESTER											
MPH 201T	**MOLECULAR PHARMACEUTICS (NANO TECH AND TARGETED DDS)**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	1	2	-	2	-	-	1	1	2
CO2	3	1	1	2	-	2	-	-	1	1	2
CO3	3	1	1	2	-	2	-	-	1	1	2
CO4	3	1	1	2	-	2	-	-	1	1	2
CO5	3	1	1	2	-	2	-	-	1	1	2
AVERAGE	**3**	**1**	**1**	**2**	**-**	**2**	**-**	**-**	**1**	**1**	**2**
MPH 202T	**ADVANCED BIOPHARMACEUTICS &PHARMACOKINETICS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	3	2	1	1	1	1	2	2	2
CO2	3	1	3	2	1	1	2	2	3	2	2
CO3	3	2	3	3	1	1	2	2	2	2	2
CO4	3	1	3	2	1	2	2	2	2	2	2
CO5	3	2	3	3	1	1	2	2	2	2	3
AVERAGE	**3**	**1.4**	**3**	**2.2**	**1**	**1.2**	**1.8**	**1.8**	**2.2**	**2**	**2.2**
MPH 203T	**COMPUTER AIDED DRUG DEVELOPMENT**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	2	2	1	1	2	2	1	1	1
CO2	2	1	2	3	1	1	1	1	1	2	2
CO3	3	2	3	3	2	2	2	2	2	1	1
CO4	2	1	3	3	2	1	1	1	3	2	2
CO5	2	1	2	3	3	2	1	2	2	3	3
AVERAGE	**2.4**	**1.2**	**2.4**	**2.8**	**1.8**	**1.4**	**1.4**	**1.6**	**1.8**	**1.8**	**1.8**
MPH 204T	**COSMETICS AND COSMECEUTICALS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	1	3	1	1	2	2	2	1	2
CO2	2	2	1	3	1	1	2	2	2	1	2
CO3	2	2	1	3	1	1	2	2	2	1	2
CO4	2	2	1	3	1	1	2	2	2	1	2
CO5	2	2	1	3	1	1	2	2	2	1	2
AVERAGE	**2**	**2**	**1**	**3**	**1**	**1**	**2**	**2**	**2**	**1**	**2**
MPH205P	**PHARMACEUTICS PRACTICAL II**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	2	1	1	1	1	2	2	1
CO2	3	2	3	2	1	1	1	1	2	2	1
CO3	3	2	3	3	1	1	1	1	2	2	2
CO4	3	2	3	3	2	1	1	2	2	2	2

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CO5	3	3	3	3	2	2	2	2	2	3	2
AVERAGE	**3**	**2.2**	**3**	**2.6**	**1.4**	**1.2**	**1.2**	**1.4**	**2**	**2.2**	**1.6**
THIRD SEMESTER											
MRM 301T	**RESEARCH METHODOLOGY AND BIOSTATISTICS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	-	-	2	3	-	-	3	2	3
CO2	3	2	-	-	3	2	-	-	2	3	3
CO3	2		3	3	2	-	-		2	1	2
CO4	2	1	2	3	-	-	-	-	2	1	1
CO5	3	3		2	-	3	-	-	2	3	3
AVERAGE	**2.4**	**1.6**	**1.0**	**1.6**	**1.4**	**1.6**	**-**	**-**	**2.2**	**2.0**	**2.4**

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FIRST SEMESTER											
MPT 101T	**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	-	2	-	-	-	-	2
CO2	3	3	3	3	-	3	-	1	-	-	2
CO3	3	3	3	3	-	-	-	1	2	-	2
CO4	3	2	3	3	1	-	-	-	-	-	2
CO5	3	3	3	3	-	-	-	-	2	-	-
AVERAGE	**3**	**2.8**	**3**	**3**	**1**	**2.5**	**-**	**1**	**2**	**-**	**2**
MPC 102T	**ADVANCED ORGANIC CHEMISTRY –I**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	3	1	1	1	2	1	2	1
CO2	3	2	3	3	2	1	1	2	1	1	1
CO3	3	2	3	3	3	3	2	2	2	2	1
CO4	3	3	2	3	2	2	1	2	2	1	1
CO5	3	2	2	3	2	2	1	2	2	1	1
AVERAGE	**3**	**2.6**	**2.6**	**3**	**2**	**1.8**	**1.2**	**2**	**1.6**	**1.4**	**1**
MPC 103T	**ADVANCED MEDICINAL CHEMISTRY**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	3	3	3	3	3	3
CO2	3	2	2	3	2	3	3	3	2	2	3
CO3	3	2	2	2	2	1	3	2	2	2	3
CO4	3	3	3	3	3	2	3	3	3	2	3
CO5	3	2	2	3	2	3	2	3	2	2	3
AVERAGE	**3**	**2.4**	**2.4**	**2.8**	**2.4**	**2.4**	**2.8**	**2.8**	**2.4**	**2.2**	**3**
MPC 104T	**CHEMISTRY OF NATURAL PRODUCTS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	2	3	2	3	2	3	3
CO2	2	3	2	2	3	3	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	2	2	3
CO4	3	2	3	2	2	3	3	3	3	3	3
CO5	3	3	3	2	2	3	3	2	3	2	3
AVERAGE	**2.8**	**2.8**	**2.8**	**2.4**	**2.2**	**3.0**	**2.8**	**2.8**	**2.6**	**2.8**	**3.0**
MPC 105P	**PHARMACEUTICAL CHEMISTRY PRACTICAL – I**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	-	2	1	1	-	-	1	1	1
CO2	2	2	-	-	-	1	-	-	1	-	-
CO3	2	3	-	-	-	-	-	-	-	-	-
CO4	2	2	-	1	-	-	-	-	-	-	1

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CO5	3	2	-	1	-	-	-	-	-	-	1
AVERAGE	**2.4**	**2.2**	**0.0**	**1.0**	**1.0**	**1.0**	**0.0**	**0.0**	**1.0**	**1.0**	**1.0**
SECOND SEMESTER											
MPC 201T	**ADVANCED SPECTRAL ANALYSIS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	3	3	3	3	3	3
CO2	3	2	2	3	2	3	3	3	2	2	3
CO3	3	2	2	2	2	1	3	2	2	2	3
CO4	3	3	3	3	3	2	3	3	3	2	3
CO5	3	2	2	3	2	3	2	3	2	2	3
AVERAGE	**3**	**2.4**	**2.4**	**2.8**	**2.4**	**2.4**	**2.8**	**2.8**	**2.4**	**2.2**	**3**
MPC 202T	**ADVANCED ORGANIC CHEMISTRY –II**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	3	1	2	1	2	-	1	2	1
CO2	3	2	-	1	-	1	-	-	1		1
CO3	3	2	-	-	-	1	-	-	-	-	1
CO4	3	2	-	-	-	-	-	-	-	-	-
CO5	3	2	-	-	-	-	-	-	-	-	-
AVERAGE	**3.0**	**2.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**-**	**1.0**	**1.0**	**1.0**
MPC 203T	**COMPUTER AIDED DRUG DESIGN**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	3	3	3	3	3	3
CO2	3	2	2	3	2	3	3	3	2	2	3
CO3	3	2	2	2	2	1	3	2	2	2	3
CO4	3	3	3	3	3	2	3	3	3	2	3
CO5	3	2	2	3	2	3	2	3	2	2	3
AVERAGE	**3**	**2.4**	**2.4**	**2.8**	**2.4**	**2.4**	**2.8**	**2.8**	**2.4**	**2.2**	**3**
MPC 204T	**PHARMACEUTICAL PROCESS CHEMISTRY**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	3	3	2	2	3	2	2
CO2	3	3	2	2	3	3	3	3	2	3	3
CO3	3	2	3	3	3	3	3	3	3	2	2
CO4	3	2	3	2	2	3	3	3	3	3	3
CO5	3	2	3	3	3	3	3	2	3	2	2
AVERAGE	**3.0**	**2.4**	**2.8**	**2.6**	**2.8**	**3.0**	**2.8**	**2.6**	**2.8**	**2.4**	**2.4**
MPC 205P	**PHARMACEUTICAL CHEMISTRY PRACTICAL II**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	2	3	1	2	1	2	2
CO2	2	2	2	1	2	1	1	1	1	-	1
CO3	3	3	3	3	1	1	1	2	2	2	2

DEVAKI AMMA MEMORIAL COLLEGE OF PHARMACY

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CO4	3	3	3	3	2	1	1	1	-	2	1
CO5	3	3	3	3	2	3	1	2	1	2	2
AVERAGE											
THIRD SEMESTER											
MRM 301T	**RESEARCH METHODOLOGY AND BIOSTATISTICS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	**-**	**-**	2	3	**-**	**-**	3	2	3
CO2	3	2	**-**	**-**	3	2	**-**	**-**	2	3	3
CO3	2		3	3	2	**-**	**-**		2	1	2
CO4	2	1	2	3	**-**	**-**	**-**	**-**	2	1	1
CO5	3	3		2	**-**	3	**-**	**-**	2	3	3
AVERAGE	**2.4**	**1.6**	**1.0**	**1.6**	**1.4**	**1.6**	**-**	**-**	**2.2**	**2.0**	**2.4**

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FIRST SEMESTER											
MPT 101T	**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	3	-	2	-	-	-	-	2
CO2	3	3	3	3	-	3	-	1	-	-	2
CO3	3	3	3	3	-	-	-	1	2	-	2
CO4	3	2	3	3	1	-	-	-	-	-	2
CO5	3	3	3	3	-	-	-	-	2	-	-
AVERAGE	**3**	**2.8**	**3**	**3**	**1**	**2.5**	**-**	**1**	**2**	**-**	**2**
MPL 102T	**ADVANCED PHARMACOLOGY-I**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	-	2	1	2	3	2	3	3	2	3
CO2	2	1	2	1	1	1	1	3	1	1	1
CO3	3	1	1	1	1	1	1	3	1	1	1
CO4	3	1	1	1	1	1	1	3	1	1	1
CO5	3	1	1	1	1	1	1	3	1	1	1
AVERAGE	**2.8**	**0.8**	**1.4**	**1**	**1.2**	**1.4**	**1.2**	**3**	**1.4**	**1.2**	**1.4**
MPL 103T	**PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS-I**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	2	2	2	2	1	2	1	2
CO2	3	1	1	1	1	1	2	1	1	-	2
CO3	3	2	2	2	1	2	2	1	2	-	2
CO4	3	2	2	2	1	2	2	1	2	-	2
CO5	3	2	2	2	1	2	2	1	2	-	2
AVERAGE	**3**	**1.8**	**1.6**	**1.8**	**1**	**1.8**	**2**	**1**	**1.8**	**0.2**	**2**
MPL 104T	**CELLULAR AND MOLECULAR PHARMACOLOGY**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	1	1	1	1	2	2	1	3
CO2	3	2	2	2	1	1	2	2	2	1	3
CO3	3	2	3	3	1	2	2	2	2	1	3
CO4	3	3	3	3	2	2	2	2	2	1	3
CO5	3	3	2	3	2	2	2	2	2	1	3
AVERAGE	**3**	**2.4**	**2.4**	**2.4**	**1.4**	**1.6**	**1.8**	**2**	**2**	**1**	**3**
MPL 105P	**PHARMACOLOGY PRACTICAL -I**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	2	3	1	2	2	1	1	1	2
CO2	2	2	2	3	1	2	2	1	1	1	2
CO3	2	2	2	3	1	2	2	1	1	1	2
CO4	2	2	2	3	1	2	2	1	1	1	2
CO5	2	2	2	3	1	2	2	1	1	1	2

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AVERAGE	**2**	**2**	**2**	**3**	**1**	**2**	**2**	**1**	**1**	**1**	**2**
SECOND SEMESTER											
MPL 201T	**ADVANCED PHARMACOLOGY II**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	1	2	2	1	3	3	2	3	2	3
CO2	3	1	2	2	1	3	3	2	3	2	3
CO3	3	-	2	3	1	3	3	2	1	-	3
CO4	3	-	2	2	1	3	3	2	3	2	3
CO5	3	1	2	2	1	3	3	2	3	2	3
AVERAGE	**3**	**0.6**	**2**	**2.2**	**1**	**3**	**3**	**2**	**2.6**	**1.6**	**3**
MPL 202T	**PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS –II- THEORY**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	3	2	1	3	3	3	3	1	3
CO2	3	3	2	2	1	2	2	2	3	1	2
CO3	2	2	2	2	1	2	3	2	2	1	2
CO4	3	2	3	2	1	2	3	2	3	1	2
CO5	3	3	3	2	1	3	3	3	3	1	3
AVERAGE	**2.8**	**2.6**	**2.6**	**2.0**	**1.0**	**2.4**	**2.8**	**2.4**	**2.8**	**1.0**	**2.4**
MPL 203T	**PRINCIPLES OF DRUG DISCOVERY**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	1	1	1	1	2	1	1	3
CO2	3	2	2	2	1	1	2	2	2	1	3
CO3	3	3	3	3	2	2	2	2	1	1	3
CO4	3	3	3	3	2	2	2	2	1	1	3
CO5	3	3	2	3	2	2	2	2	2	1	3
AVERAGE	3	2.6	2.4	2.4	1.6	1.6	1.8	2	1.4	1	3
MPL 204T	**CLINICAL RESEARCH AND PHARMACOVIGILANCE- THEORY**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	2	1	2	3	3	2	3	1	2
CO2	2	1	2	1	1	1	2	2	1	1	2
CO3	2	3	3	2	2	3	3	2	3	1	2
CO4	3	2	3	2	2	3	3	3	3	2	3
CO5	3	1	3	2	1	3	3	2	2	1	3
AVERAGE	**2.6**	**1.8**	**2.6**	**1.6**	**1.6**	**2.6**	**2.8**	**2.2**	**2.4**	**1.2**	**2.4**
MPL 205P	**PHARMACOLOGY PRACTICAL -II**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	2	3	1	2	2	1	1	1	2
CO2	2	2	2	3	1	2	2	1	1	1	2

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CO3	2	2	2	3	1	2	2	1	1	1	2
CO4	2	2	2	3	1	2	2	1	1	1	2
CO5	2	2	2	3	1	2	2	1	1	1	2
AVERAGE	**2**	**2**	**2**	**3**	**1**	**2**	**2**	**1**	**1**	**1**	**2**
THIRD SEMESTER											
MRM 301T	**RESEARCH METHODOLOGY AND BIOSTATISTICS**										
COURSE OUTCOME	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	2	2	**-**	**-**	2	3	**-**	**-**	3	2	3
CO2	3	2	**-**	**-**	3	2	**-**	**-**	2	3	3
CO3	2		3	3	2	**-**	**-**		2	1	2
CO4	2	1	2	3	**-**	**-**	**-**	**-**	2	1	1
CO5	3	3		2	**-**	3	**-**	**-**	2	3	3