



Ref: No.

Date.....

PROGRAMME OUTCOMES (PO's)

PO1- Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social and administrative pharmacy sciences; and manufacturing practices.

PO2- Planning Abilities: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.

PO3- Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.

PO4- Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.

PO5- Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.

PO6- Professional Identity: Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).

PO7- Pharmaceutical Ethics: Honor personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical





principles while making decisions and take responsibility for the outcomes associated with the decisions.

PO8- Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.

PO9- The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.

PO10- Environment and sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO11- Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.





Ref. No.

Date.....

B.PHARM

PEO's	Attributes	PO's	PSO's
Graduates will be able to discharge the responsibilities of pharmacist with adequate understanding of supportive area as needed in this multidisciplinary area of health care system.	A	Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences pharmaceutical sciences, behavior, social and administrative pharmacy sciences and manufacturing practices	Knowledge: Enable graduates to understand the core and basic knowledge in different subjects of pharmaceutical sciences as per the requirement of pharmaceutical sectors
Pharmacists should be able to plan, design, execute, stimulate experiments and provide solutions related to drugs and dosage forms.	B	Planning Abilities: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines	Employment & Entrepreneur: Enable graduate to succeed in technical or professional careers in various pharmaceutical industry/institute or health care system
Integrate the knowledge base of pharmaceuticals for better design of drugs	C	Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and	Professional Practice: Enable graduate to practice profession and adapt in a globe of constantly





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and dosage regimen.		making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decision	developing trends
Pharmacists will be able to a part of the team to communicate well with other professionals in providing medicines needed to society with standards, professional ethics and social responsibilities.	D	Modern tool usage: Learn, select, and apply appropriate methods and procedure, resources, and modern pharmacy-related computing tools with an understanding of the limitations.	Lifelong Learning & Professional Ethics: Enable graduate to streams a lifelong career of personal and practicing professional growth with ethical codes and self esteem
Pharmacists will be able to become a lifelong learner to absorb new technologies and thus offer leadership role in the society.	E	Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.	
	F	Professional Identity: Understand, analyze and communicate the value of	





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		their professional roles in society (e.g. health care professionals, promoters of health educators, managers, employer's employees.	
	G	Pharmaceutical Ethics: Honor personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.	
	H	Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation and give and receive clear instructions	
	I	The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to	





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		the professional Pharmacy practice.	
	J	Environment and sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.	
	K	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an online basis	





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Ref. No.

Date.....

M.PHARMA

PEO's	Attributes	PO's	PSO's
To empower graduates with knowledge principles and practice of Pharmaceutical care across the discipline through ambience of motivation that could impel excellence and career growth.	A	Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences pharmaceutical sciences, behavioral, social and administrative pharmacy sciences and manufacturing narcotics	Knowledge: Enable graduates to understand the core and basic knowledge in different subjects of pharmaceutical sciences as per the requirement of pharmaceutical sectors.
To train graduates in practice based skills to meet professional challenges in the delivery of health care.	B	Planning Abilities: Demonstrate effective planning abilities including time management, resource management. Delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.	Employment & Entrepreneur: Enable graduate to succeed in technical or professional careers in various pharmaceutical industry/institute or health care system
To spur graduates in interpersonal skills, to value professional integrity and ethics	C	Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving	Professional Practice: Enable graduate to practice profession and adapt in a globe of constantly developing trends





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and accustomed to lifelong learning		problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions	
To foster and imbibe graduates to leadership and entrepreneurship qualities to serve health care system.	D	Modern tool usage: Learn, selection and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations	Lifelong Learning & Professional Ethics: Enable graduate to streams a lifelong career of personal and practicing professional growth with ethical codes and self esteem
To appreciate local and global needs of health care and health promotion with concern towards environment sustainability and protection.	E	Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.	
	F	Professional Identity: Understand, analyze and	





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		communicate the value of their professional roles in society (e.g. health care professionals, promoters of health educator's managers, employer's employees.	
	G	Pharmaceutical Ethics: Honor personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions	
	H	Communication: Communicate effectively with the Pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation and receive clear instructions.	





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	I	<p>The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and, the consequent responsibilities relevant to the professional Pharmacy Practice</p>	
	J	<p>Environment and sustainability: Understand the impact of the professional Pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.</p>	
	K	<p>Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an urgent basis.</p>	
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COURSE OUTCOMES - B PHARM

Name of the Program:	B PHARM
Year:	1st SEM
Course wise COs	

Program)	Course name	Course Code	Year	Course Outcomes(COs) Students should be able to -	
B PHARM	HUMAN ANATOMY AND PHYSIOLOGY I	BP10IT	1st SEM	CO1	Describe the anatomy of CVS peripheral & Sense organs.
				CO2	Explain the formation of blood cells, lymph and their circulation.
				CO3	Recognize various tissues and bones
				CO4	Explain the physiology of Skeletal muscles, blood and sense organs.
				CO5	Define the disorders and diseases associated with related skeletal systems, blood and sense organs.





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				CO6	Write the disorders of Skeletal muscles, Lymphatic system & Cell tissues
B PHARM	PHARMACEUTICAL ANALYSIS I	BP102T	1st SEM	CO1	Understand the Methods of expressing concentration, Preparation and standardization of molar and normal solutions Understand various sources of impurities and errors arise during the process
				CO2	Understand the various principles involved in volumetric and gravimetric analysis.
				CO3	Understand the principle and concept of electrochemical methods of analysis.
				CO4	Familiarity with regulatory guidelines and standards of pharmaceutical analysis
				CO5	Role of analytical techniques in ensuring the safety and efficacy
B PHARM	PHARMACEUTICS I	BP103T	1st SEM	CO1	Know the history of profession of pharmacy
				CO2	Understand the Basics of different dosage forms, parts,

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					and handling of Prescription
				CO3	Understand the Basics of Pharmaceutical incompatibilities, pharmaceutical calculations
				CO4	Understand the professional way of handling the Prescription.
				CO5	Preparation of various conventional dosage forms
B PHARM	PHARMACEUTICAL INORGANIC CHEMISTRY	BP104T	1st SEM	CO1	Grasp fundamental inorganic chemistry principles
				CO2	Use master analytical technique
				CO3	Describe the method of preparation, storage, assay and uses of certain inorganic pharmaceuticals
				CO4	understand the medicinal and pharmaceutical importance of inorganic compounds
				CO5	To have been introduced to a variety of inorganic drug classes
B PHARM	COMMUNICATION SKILLS	BP105T	1st SEM	CO1	Understand the behavioral needs for a Pharmacist to function effectively in the areas of pharmaceutical operation

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				CO2	Effectively manage the team as a team player
				CO3	To Develop Leadership qualities and essentials
				CO4	To Develop interview skills





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Name of the Program:	B PHARM
Year:	2 nd SEM
Course wise Cos	

Program	Course name	Course Code	Year	Course Outcomes(Cos) Students should be able to -	
B PHAR M	HUMAN ANATOMY AND PHYSIOLOGY 2	BP201T	2 nd SEM	CO1	Students would have studied about the gross morphology, structure and functions of nervous, respiratory, urinary and reproductive systems in the human body
				CO2	They would have studied in detailed about energy and metabolism
				CO3	Students would able to identify the various organs of different systems of human body.
				CO4	They would have performed and learnt about the experiments like neurological reflex, body temperature measurement
				CO5	They would have studied elaborate on interlinked mechanisms in the maintenance of normal functioning of human body
				CO6	They would have learnt and performed the experiments like Olfaction, gustation reflex and eyesight

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B PHAR M	PHARMACEUTIC AL ORGANIC CHEMISTRY I	BP202T	2 nd SEM	CO1	Write the structure, name of the organic compound
				CO2	Knowledge about the type of isomerism
				CO3	Write the reaction, name the reaction and orientation of reactions
				CO4	Account for reactivity/stability of compounds
				CO5	Identify/confirm the unknown organic compound
				CO6	Knowledge about the naming reactions of carbonyl compounds
B PHAR M	BIOCHEMISTR Y	BP203T	2 nd SEM	CO1	To understand the importance of metabolism of substrates.
				CO2	Acquire chemistry and biological importance of biological macromolecules
				CO3	To acquire knowledge in qualitative and quantitative estimation of the biological macromolecules
				CO4	To know the interpretation of determination from a Clinical Test Lab.
				CO5	To know how physiological conditions influence the structures. And re-activities of biomolecules.
				CO6	To understand the basic principles of protein and polysaccharide structure.

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B PHAR M	PATHO PHYSIOLOGY	BP204T	2 nd SEM	CO1	Knowledge of the structure and function of the major organ systems, including the molecular, biochemical and cellular mechanisms for maintaining homeostasis
				CO2	To describe the path physiological responses to infection, necrosis, stress, carcinogenesis
				CO3	To analyses the processes that lead to cell injury and describe its types and responses for healing, including inflammation.
				CO4	To analyze the concept of inflammation, Repair of wound and factors influencing Healing
				CO5	To study the immune response and evaluate some diseases that affect immunity
				CO6	To, recognize, define, and classify diseases based on pathogenic or morphological characteristics





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Name of the Program:	B PHARM
Year:	3 rd SEM
Course wise Cos	

Program)	Course name	Course Code	Year	Course Outcomes(Cos Students should be able to -	
B PHARM	PHARMACEUTICAL ORGANIC CHEMISTRY 2	BP301T	3 rd SEM	CO1	To write the structure, name and the type of isomerism of the organic compound
				CO2	To explain the reaction, name the reaction and orientation of reactions
				CO3	To discuss the reactivity and stability of organic reactions
				CO4	To describe the chemistry of fats and oils
				CO5	To explain the preparation, reactions and stability of Poly nuclear and Alicyclic compounds
B PHARM	PHYSICAL PHARMACEUTICS 1	BP302T	3 rd SEM	CO1	State the physicochemical properties of drug molecules, pH, and solubility
				CO2	Explain the role of surfactants, interfacial phenomenon and thermodynamics

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				<p>CO3 Describe the flow behavior of fluids and concept of complexation</p> <p>CO4 Analyze the chemical stability tests of various drug products</p> <p>CO5 Understand the physical properties of solutions, buffers, isotonicity, disperse systems and rheology</p> <p>CO6 Understand of physicochemical properties of drugs including solubility, distribution, adsorption, and stability</p>
B PHARM	PHARMACEUTICAL MICROBIOLOGY	BP303T	3 rd SEM	<p>CO1 Recognize the different groups of microorganisms like bacteria, fungi and viruses and describe different physical and chemical requirements for growth of microorganism, their identification by staining and biochemical tests and preservation by different methods</p> <p>CO2 Name the different sterilization procedures useful in microbiology and manufacture of pharmaceuticals and explain the sterility testing of pharmaceuticals</p> <p>CO3 List the disinfectants used to maintain cleanliness in microbiology and manufacture of pharmaceuticals and discuss evaluation of disinfectants by</p>





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					different method
				CO4	Outline the cell culture technology and point out its role in pharmaceutical industries and research.
				CO5	Understand the physical properties of solutions, buffers, isotonicity, disperse systems and rheology
B PHARM	PHARMACEUTICAL ENGINEERING	BP304T	3 rd SEM	CO1	To know various unit operations used in Pharmaceutical industries
				CO2	To understand the material handling techniques
				CO3	To perform various processes involved in pharmaceutical manufacturing process
				CO4	To carry out various test to prevent environmental pollution
				CO5	To appreciate and comprehend significance of plant lay out design





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Name of the Program:	B PHARM
Year:	4 TH SEM
Course wise Cos	

Program)	Course name	Course Code	Year	Course Outcomes(Cos Students should be able to -	
B PHARM	PHARMACEUTICAL ORGANIC CHEMISTRY 3	BP401T	4 TH SEM	CO1	Write the isomerism involved for organic compound and synthesis of isomers
				CO2	Write the nomenclature, reaction, synthesis and medicinal uses of organic compounds
				CO3	Discuss the orientation and reactivity of organic compounds
				CO4	Explain the name of the reactions and understanding mechanism of reactions
B PHARM	Medicinal chemistry 1	BP402T	4 TH SEM	CO1	To know the structural activity relationship of different class of drugs
				CO2	Knowledge about the mechanism pathways of

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					different class of medicinal compounds
				CO3	To understand the chemistry of drugs with respect to their pharmacological activity
				CO4	To write the chemical synthesis of some drugs
B PHARM	PHYSICAL PHARMACEUTICS 2	BP403T	4 TH SEM	CO1	State the physicochemical properties of drug molecules, pH, and solubility
				CO2	Explain the role of surfactants, interfacial phenomenon and thermodynamics
				CO3	Describe the flow behavior of fluids and concept of complexation
				CO4	Analyze the chemical stability tests of various drug products
				CO5	Understand the physical properties of solutions, buffers, isotonicity, disperse systems and rheology
				CO6	Have basic knowledge of pharmaceutical suspensions and colloids





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				CO7	Have basic understanding of the pharma' applications of various physical
B PHARM	PHARMACOLOGY I	BP404T	4 TH SEM	CO1	Understand the pharmacological actions of different categories of drugs
				CO2	Explain the mechanism of drug action at organ system/sub cellular/macromolecular levels
				CO3	Apply the basic pharmacological knowledge in the prevention and treatment of various diseases
				CO4	Appreciate correlation of pharmacology with other bio medical sciences
B PHARM	PHARMACOGNOSY I	BP405T	4 TH SEM	CO1	To understand the basic concepts of Pharmacognosy like the history of Pharmacognosy, Current status, and classification of crude drugs
				CO2	To describe the awareness of detecting adulteration of drugs using morphological, microscopically, chemical,





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					and physical Evaluation methods
				CO3	Generalized the knowledge concerning medicinal plants for cultivation, collection, processing, and storage of crude drugs
				CO4	To understand the concept of tissue culture and application in Pharmacognosy
				CO5	To learn the various systems of medicines, secondary metabolites, and their application in the pharmacy field





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Name of the Program:	B PHARM
Year:	5 TH SEM
Course wise Cos	

Program)	Course name	Course Code	Year	Course Outcomes(Cos Students should be able to -
B PHARM	MEDICINAL CHEMISTRY 2	BP501T	5 TH SEM	CO1 Helps in correlating between pharmacology of a disease and its mitigation or cure
				CO2 To write the chemical synthesis of some drugs.
				CO3 To know the structural activity relationship of different class of drugs
				CO4 Knowledge about the mechanism pathways of different class of medicinal compounds
				CO5 To acquire knowledge about the chemotherapy for cancer
				CO6 Have basic knowledge of pharmaceutical suspensions and colloids





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				CO7	To understand the chemistry of drugs with respect to their pharmacological activity
B PHARM	INDUSTRIAL PHARMACY	BP502T	5 TH SEM	CO1	To recall the knowledge of preformulation studies for dosage form development and its applications
				CO2	To prepare and coat tablets, capsules and pellets by various equipment's and further they can evaluate in process and final product quality control.
				CO3	Summarize the preparation of parenteral and ophthalmic preparations and also can plan the selection of packing materials with their official requirements
				CO4	Design formulations and manufacturing of liquid orals like suspensions and emulsions
B PHARM	PHARMACOLOGY 2	BP503T	5 TH SEM	CO1	Students would have understood the mechanism of drug action and its relevance in the treatment of different





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					diseases
				CO2	They would be trained with isolation of different organs/tissues from the laboratory animals by simulated experiments
				CO3	They would have observed the various receptor actions using isolated tissue preparation
				CO4	Students would appreciate the correlation of pharmacology with related medical sciences
				CO5	They would have understood the cell communication mechanism
				CO6	They would appreciate the newer targets of several diseases
B PHARM	PHARMACOGNOSY- 2	BP504T	5 TH SEM	CO1	Illustrate the deferent methods to enhance production of secondary plant metabolites by using deferent precursors in biogenetic pathways.





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				CO2	Outline the chemical and biological efficacy of drugs containing alkaloids, glycosides, essential oils, resins and tannins.
				CO3	Apply the different techniques to identify and estimate the phytoconstituents present in the herbal drugs
				CO4	Industrial production, estimation and utilization of phyto constituents
B PHARM	PHARMACEUTICAL JURISPRUDENCE	BP505T	5 TH SEM	CO1	About Professional ethics
				CO2	They understood the various concepts of the Pharmaceutical Legislation in India.
				CO3	They understood the various parameters in the Drug and Cosmetic Act and rules
				CO4	They understood the various concepts of Drug policy, DPCO, Patent and Designing act
				CO5	They came to know about

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					the labelling requirements and packaging guidelines for Drugs and Cosmetics.
				CO6	They came to know about the salient features of different laws which have been prescribed by the Pharmacy Council of India from time to time including International Laws





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Name of the Program:	B PHARM
Year:	6 TH SEM
Course wise Cos	

Program)	Course name	Course Code	Year	Course Outcomes(Cos Students should be able to -	
B PHARM	MEDICINAL CHEMISTRY 3	BP601T	6 th SEM	CO1	To develop an understanding of the physico-chemical properties of drugs
				CO2	To understand how current drugs were developed by using pharmacophore modeling and docking technique
				CO3	To acquire knowledge in the chemotherapy for cancer and microbial diseases and different anti-viral agents
				CO4	To acquire knowledge about the mechanism pathways of different class of medicinal compounds.
				CO5	To have been introduced to

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					a variety of drug classes and some pharmacological properties
B PHARM	PHARMACOLOGY 3	BP602T	6 th SEM	CO1	To study the pharmacology of various drugs acting on respiratory system and gastrointestinal tract
				CO2	To understand the chemotherapy of various infectious diseases and cancer
				CO3	To understand the basic knowledge of immune pharmacology, toxicology, biosimilar and Chrono pharmacology
				CO4	To understand the general principles of management and treatment of poisoning.
B PHARM	BIOPHARMACEUTICS AND PHARMACOKINETICS	BP604T	6 th SEM	CO1	Explain the principles and its applications
				CO2	Define methodology of various unit operation processes and its application in pharmaceutical industry
				CO3	Describe various mechanisms and equipment





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				CO4	Describe various mechanisms and equipment
				CO5	Discuss preventive measures of hazards
B PHARM	PHARMACEUTICAL BIOTECHNOLOGY	BP605T	6 th SEM	CO1	State the importance of enzymes in the field of pharmacy and describe the different methods of enzyme immobilization and applications of immobilized enzymes
				CO2	List the salient features of rDNA technology and describe the use of rDNA technology in the production of biopharmaceuticals
				CO3	Identify the different types of immunity and explain the production of monoclonal antibodies, vaccines and blood products.
				CO4	State the different microbial gene transfer methods including mutation and explain the importance of blotting techniques in the detection of biomolecules





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B PHARM	QUALITY ASSURANCE	BP606T	6 th SEM	CO1	Acquire knowledge on various quality assurance systems, processes and current regulatory guidelines related to manufacturing and distribution
				CO2	Address the quality issues and provide solutions needed to attain quality leadership in an environment of continual improvement
					Understand the importance of effective documentation
					To prepare professionally competent individuals with quality concept being engrained to achieve global quality standards in pharmaceutical industries





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Name of the Program:	B PHARM
Year:	7 TH SEM
Course wise Cos	

Program)	Course name	Course Code	Year	Course Outcomes(COs Students should be able to -
B PHARM	INSTRUMENTAL METHODS OF ANALYSIS	BP701T	7 th SEM	CO1 The basic theoretical knowledge of the instrumentation techniques available
				CO2 Theoretically understand the aspects of separation for multi components
				CO3 Practical skills for the analysis of drugs and excipients using various instrumentation techniques
				CO4 To make accurate analysis and report the results in defined formats.
				CO5 To learn documentation and express the observations with clarity
B PHARM	INDUSTRIAL PHARMACY II	BP702T	7 th SEM	CO1 Know the various pharmaceutical dosage forms and their manufacturing

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					techniques
				CO2	Know various considerations in development of pharmaceutical dosage forms
				CO3	Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality
B PHARM	PHARMAC PRACTICE	Y	BP703T	7 th SEM	CO1 Students will demonstrate knowledge of and ability to use principles of therapeutics, quality improvement, communication, economics, health behavior, social and administrative aspects, health policy and legal issues in the practice of pharmacy
				CO2	Students will use knowledge of drug distribution methods in hospital and apply it in the practice of pharmacy.
				CO3	Students will effectively apply principles of drug store management and inventory control to medication use.
				CO4	Students will engage in innovative activities by making use of the knowledge of





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					clinical trials
B PHARM	NOVEL DRUG DELIVERY SYSTEM	BP704T	7 th SEM	CO1	The various approaches for development of novel drug delivery systems
				CO2	The criteria for selection of drugs and polymers for the development of NTDS
				CO3	The formulation and evaluation of novel drug delivery systems





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Name of the Program:	B PHARM
Year:	8 th SEM
Course wise Cos	

Program)	Course name	Course Code	Year	Course Outcomes(Cos Students should be able to -	
B PHARM	BIostatistics AND RESEARCH METHODOLOGY	BP801T	8 th SEM	CO1	Learn general research methodology
				CO2	Understand the basic concepts of biostatistics
				CO3	Learn different parametric and nonparametric tests
				CO4	Understand the functions of ethics committees in medical research
				CO5	Learn the guidelines for developing animal facilities
				CO6	Learn the guidelines for developing animal facilities
				CO7	Understand the genesis of bioethics with special reference to Helsinki declaration
B PHARM	SOCIAL AND	BP802T	8 th SEM	CO1	Recognize the concepts and





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	PREVENTIV PHARMACY	E			evaluation of public health
				CO2	Relate food to nutrition health, balanced diet, deficiencies and its prevention
				CO3	Illustrate sociocultural factors and its relation with health
				CO4	Identify avoidable habits for personal hygiene and health
				CO5	Explain the principles on the prevention and control of communicable and non-communicable diseases.
				CO6	Identify National health programs its objectives functioning and outcomes
B PHARM	QUALITY CONTROLAND STANDARDIZATIONS OF HERBALS	BP803T	8 th SEM	CO1	Explain basic tests for drugs to obtain dosage form for pharmaceutical substances and medicinal plants
				CO2	Explain methods for evaluation of pharmaceutical substances, medicinal plants and commercial crude drugs along with WHO guidelines for quality control for herbal

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					drugs
				CO3	Describe guidelines for cGMP, GAP, GMP and GLP for quality assurance of herbal drugs in industry
				CO4	Describe guidelines for quality control of herbal drugs and evaluation of safety and efficacy of herbal medicines.
B PHARM	PHARMACEUTICAL REGULATORY SCIENCE	BP804T	8 th SEM	CO1	Know about the process of drug discovery and development
				CO2	Know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals
				CO3	Know the regulatory approval process and their registration in Indian and international markets





COURSE OUTCOMES – M. PHARM (PHARMACEUTICS)

Name of the Program:	M.PHARM
Year:	1 st SEM
Course wise COs	

Program)	Course name	Course Code	Year	Course Outcomes(COs Students should be able to -
M. PHARM	MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES	MPH101T	1 st SEM	CO1 Apply fundamentals of pharmaceutical chemistry, Pharmaceutics, Pharmaceutical technology, Pharmacy practice, Pharmacology, Pharmacognosy and Quality assurance to elucidate and regulate drug discovery, drug development care practice
				CO2 An ability to design and conduct experiments, as well as to analyze and interpret data of appropriate pharmaceutical system or process
				CO3 An ability to design, synthesis, isolate a drug and drug formulation system, component, or drug use process to meet desired needs within realistic constraints such as economic,





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					environmental, social, political, ethical, health and safety, manufacturability, and sustainability
				CO4	An ability to function on multidisciplinary teams, at different organizational levels of academic, industry, research and health care
				CO5	An ability to identify, formulate and solve pharmaceutical problems meeting professional challenges
				CO6	An understanding of pharmacy professional values and ethical responsibility in discharging professional obligations at society, national and global perspectives
				CO7	An ability to communicate effectively both verbal and written to gain recognition at professional circle and societal level
M. PHARM	DRUG DELIVERY SYSTEM	MPH102T		CO1	Vaccine delivery and different mode of application approach for clinical use.





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				<p>CO2 Drug delivery system give a detailed information transporting a pharmaceutical compound in the body as needed to safely achieve its desired therapeutic effect</p> <p>CO3 They know the different types of Drug carrier used in the process of drug delivery which serves to improve the selectivity, effectiveness, and/or safety of drug administration</p> <p>CO4 Recent developments in protein and peptide for parenteral delivery approaches will give new dimension of drug deliver for antibiotics, insulin, etc.</p>
M. PHARM	MODERN PHARMACEUTIC S	MPH103T		<p>CO1 To apply the knowledge og preformulation studies for the dosage form development</p> <p>CO2 To apply the knowledge of optimization techniques to formulation processing and development.</p> <p>CO3 To use the knowledge of validation techniques as per internationally accepted</p>





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					guidelines
				CO4	To demonstrate the principles of cGMP and industrial management during planning of industrial Quality management
M. PHARM	PHARMACEUTICS REGULATORY AFFAIR	MPH104T		CO1	The Concepts of innovator and generic drugs, drug development process
				CO2	The Regulatory guidance's and guidelines for filing and approval process
				CO3	Preparation of Dossiers and their submission to regulatory agencies in different countries
				CO4	Post approval regulatory requirements for actives and drug products
				CO5	Submission of global documents in CTD/ eCTD formats





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Name of the Program:	M.PHARM
Year:	2 ND SEM
Course wise Cos	

Program)	Course name	Course Code	Year	Course Outcomes(COs Students should be able to -	
M. PHARM	MOLECULAR PHARMACEUTICS (NANO TECH AND TARGETED DDS)	MPH201T	2 ND SEM	CO1	Molecular Pharmaceutics (Nano Tech and Targeted DDS
				CO2	Advanced Biopharmaceutics & Pharmacokinetics
				CO3	Computer Aided Drug Delivery System
				CO4	Cosmetic and Cosmeceuticals
M. PHARM	ADVANCED BIOPHARMACEUTICS & PHARMACOKINETIC S	MPH202T	2 ND SEM	CO1	The basic concepts in biopharmaceutics and pharmacokinetics
				CO2	The use raw data and derive the pharmacokinetic models and parameters the best describe the process of drug absorption, distribution, metabolism and elimination
				CO3	The critical evaluation of biopharmaceutics studies involving drug product equivalency

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				CO4	The potential clinical pharmacokinetic problems and application of basics of pharmacokinetic
M. PHARM	COMPUTER AIDED DRUG DELIVERY SYSTEM	MPH203T	2 ND SEM	CO1	To Overview the concepts of computers in pharmaceutical research and development and QBD
				CO2	To study the basic concepts of computational modeling of drug disposition and introduction to modeling techniques including drug absorption, solubility, permeation, ADME, Active transport
				CO3	To gain the knowledge of computer aided formulation development and to know the optimization parameters and factorial design
				CO4	To understand the aspects of biopharmaceutical characterization through computer aided techniques.
				CO5	To go through the advantages and disadvantages of artificial





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					intelligence and robotics and to understand the basics of fluid dynamics and the challenges and opportunities.
M. PHARM	COSMETIC AND COSMECEUTICALS	MPH204T	2 ND SEM	CO1	Know regulatory requirements relating to manufacture of cosmetics, import of cosmetics and misbranded. And spurious cosmetics.
				CO2	Understand the biological aspects of structure of skin relating problems and structure of hair and hair growth cycle and common problems associated with oral cavity
				CO3	Explain and understand building blocks for different product formulations of cosmetics and cosmeceuticals
				CO4	Understand and design the different cosmetically products addressing skin, hair and oral cavity





COURSE OUTCOMES – M. PHARM (PHARMACOLOGY)

Name of the Program:	M.PHARM
Year:	1 st SEM
Course wise COs	

Program)	Course name	Course Code	Year	Course Outcomes(COs)
				Students should be able to -
M. PHARM	MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES	MPL101T	1 ST SEM	<p>CO1 Apply fundamentals of pharmaceutical chemistry, Pharmaceutics, Pharmaceutical technology, Pharmacy practice, Pharmacology, Pharmacognosy and Quality assurance to elucidate and regulate drug discovery, drug development care practice</p> <p>CO2 An ability to design and conduct experiments, as well as to analyze and interpret data of appropriate pharmaceutical system or process</p> <p>CO3 An ability to design, synthesis, isolate a drug and drug formulation system, component, or drug use process to meet desired needs within realistic constraints such as economic, environmental, social, political.</p>





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					ethical, health and safety, manufacturability, and sustainability
				CO4	An ability to function on multidisciplinary teams, at different organizational levels of academic, industry, research and health care
				CO5	An ability to identify, formulate and solve pharmaceutical problems meeting professional challenges
				CO6	An understanding of pharmacy professional values and ethical responsibility in discharging professional obligations at society, national and global perspectives
M. PHARM	ADVANCED PHARMACOLOGY-1	MPL102T	1 ST SEM	CO1	Discuss the pathophysiology and pharmacotherapy of certain diseases
				CO2	Explain the mechanism of drug actions at cellular and molecular level
				CO3	Understand the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases
M. PHARM	PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS-I	MPL103T	1 ST SEM	CO1	Appraise the regulations and ethical requirement for the usage of experimental animals
				CO2	Describe the various animals used in the drug discovery process and good laboratory practices in





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					maintenance and handling of experimental animals
				CO3	Describe the various newer screening methods involved in the drug discovery process
				CO4	Appreciate and correlate the preclinical data to humans
M. PHARM	CELLULAR AND MOLECULAR	MPL104T	1 ST SEM	CO1	Explain the receptor signal transduction processes.
				CO2	Explain the molecular pathways affected by drugs
				CO3	Appreciate the applicability of molecular pharmacology and biomarkers in drug discovery process.
				CO4	Demonstrate molecular biology techniques as applicable for pharmacology





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Name of the Program:	M.PHARM
Year:	2 ND SEM
Course wise COs	

Program)	Course name	Course Code	Year	Course Outcomes(COs Students should be able to -	
M. PHARM	Advanced Pharmacology-II	MPL201T	2 ND SEM	CO1	Explain the mechanism of drug actions at cellular and molecular level.
				CO2	Discuss the Pathophysiology and pharmacotherapy of certain diseases
				CO3	Understand the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases
M. PHARM	Pharmacological and Toxicological Screening Methods-II	MPL202T	2 ND SEM	CO1	Explain the various types of toxicity studies
				CO2	Appreciate the importance of ethical and regulatory requirements for toxicity studies
				CO3	Demonstrate the practical skills required to conduct the pre-clinical toxicity studies.
M.	Principles of Drug	MPL203T	2 ND	CO1	Explain the various stages of drug

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PHARM	Discovery		SEM		discovery
				CO2	Appreciate the importance of the role of genomics, proteomics and bioinformatics in drug discovery
				CO3	Explain various targets for drug discovery
				CO4	Explain various lead seeking method and lead optimizations
M. PHARM	CLINICAL RESEARCH AND PHARMACOVIGILANCE	MPL204T	2 ND SEM	CO1	Understanding of clinical research process
				CO2	Regulatory and Ethical Knowledge
				CO3	Communication and Reporting

