



2.6.1 Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the Institution are Stated and displayed on website and attainment of Pos and Cos are evaluated

PO 1 Pharmacy Knowledge: Provide high quality, evidence-based, patient-centered care in cooperation with patients, prescribers and members of the inter professional health care team

PO 2 Practical Skill: Demonstrate mastery and application of core knowledge and skills in relation to the evolving biomedical, clinical, epidemiological and social-behavioral sciences.

PO 3 Professional Identity: Evaluate practice and care, and promote continuous improvement in one's own patient care and pharmacy services

PO 4 Problem Solving: Demonstrate self-calibration skills and a commitment to the lifelong learning needed to provide high quality care

PO 5 Communication: Effectively utilize information, informatics and technology to optimize learning and patient care

PO 6 Planning Ability: Demonstrate effective interpersonal written and verbal skills, adapt to socioeconomic and cultural factors as well as situational applications

PO 7 Leadership Skills & Team Work : Demonstrate exemplary professional, ethical and legal behaviors, complying with all federal, state and local laws and regulations related to pharmacy practice

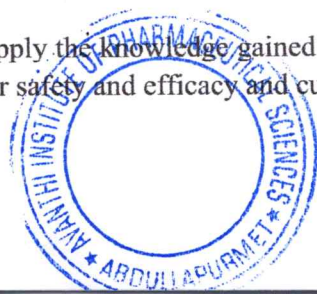
PO 8 Life Long Learning: Demonstrate awareness and responsiveness to the system of health care, effectively utilizing systems of care to provide cost-effective, optimal care

PO9 Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social context. Demonstrate behavior that recognizes cultural and personal variability in values, communication and life styles.

PO10 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 profession.

PO11 Environment and Society: Understand the impact of professional pharmacy solutions in societal and environmental context and demonstrate the knowledge of, and need for sustainable development.

PSO1: Able to apply the knowledge gained during the course of the program in drug discovery and development, their safety and efficacy and current technologies in Pharmaceutical industry



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PSO 2: Able to apply the knowledge of ethical and management principles required to work in a team as well as to lead a team.

PSO3: Able to do multidisciplinary jobs in the pharmaceutical industries and would be able to write effective project reports in multidisciplinary environment in the context of changing technologies.

PHARM D COURSE OUTCOMES FOR THE ACADEMIC YEAR 2022-23

S.NO	YEAR/SEM	COURSE NAME	COURSE OUTCOMES	
1	I	HUMAN ANATOMY AND PHYSIOLOGY	CO1: They would have learnt the gross anatomy, histology and physiology of various organs of the human body.	
			CO2: They would identify the various tissues and organs associated with the different organ systems with help of charts and specimens.	
			CO3: They would have studied the coordination in functioning of different organs of each system.	
			CO4: They would have understood the several physiological homeostatic mechanisms and their imbalances in human body.	
2	I	PHARMACEUTICS	CO1: Upon completion of this program the student will know the formulation aspects of different dosage forms do different pharmaceutical calculation involved in formulation and appreciate the importance of good formulation for effectiveness.	
3			MEDICINAL BIOCHEMISTRY	CO1: To understand the importance of metabolism of substrates.
				CO2: Will acquire chemistry and biological importance of biological macromolecules.
4	I	PHARMACEUTICAL	CO3: To acquire knowledge in qualitative and quantitative estimation of the biological macromolecules.	
			CO4: To know the interpretation of data emanating from a Clinical Test Lab.	
4	I	PHARMACEUTICAL	CO1: To be able to give systematic names to	




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		ORGANIC CHEMISTRY	<p>simple organic compounds and poly functional group.</p> <p>CO2: To achieve an understanding of the behavior of organic compounds and to establish a foundation for studies into natural and synthetic products of pharmaceutical interest.</p> <p>CO3: To acquire the knowledge and understanding of the basic experimental principles of pharmaceutical organic chemistry.</p> <p>CO4: To draw the structures and synthesize simple pharmaceutically active organic compounds.</p>
5		PHARMACEUTICAL INORGANIC CHEMISTRY	<p>CO1: Well acquainted with the principles of limit tests</p> <p>CO2: Understand the principles and procedures of analysis of drugs and also regarding the application of inorganic pharmaceutical</p> <p>CO3: Knowledge about the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals</p> <p>CO4: Appreciate the importance of inorganic pharmaceuticals in preventing and curing the disease.</p>
6		REMEDIAL MATHEMATICS	<p>CO1: Apply mathematical concepts and principles to perform computations for Pharmaceutical Sciences.</p> <p>CO2: Create, use and analyze mathematical representations and mathematical relationships</p> <p>CO3: Communicate mathematical knowledge and understanding to help in the field of Clinical Pharmacy</p> <p>CO4: Perform abstract mathematical reasoning</p>




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S.NO	YEAR/SEM	COURSE NAME	COURSE OUTCOMES
1.		PATHOPHYSIOLOGY	CO1: Describe the etiology of the selected disease states.
			CO2: Describe the Pathogenesis of the selected diseased states
			CO3: Name the signs and symptoms of the diseases.
			CO4: Mention the complications of the diseases
2.	II	MICROBIOLOGY	CO1: To study the apparatus used in microbiology & preparation, sterilization of glassware's and media
			CO2: To study different staining techniques, motility characters, enumeration of microorganism, method of isolation of pure culture and biochemical testing for identification of microorganism
			CO3: To perform culture sensitivity testing, sterility testing for powder & liquid and determination of MIC
			CO4: To perform microbiological assay of antibiotics, vitamins and determination of RWC, Widal, Malaria parasite
3.		PHARMACOLOGY-I	CO1: Understand the pharmacological aspects of drugs falling under the above mentioned chapters.
			CO2: Handle and carry out the animal experiments. Correlate and apply the knowledge therapeutically.
			CO3: Appreciate the importance of pharmacology subject as basis of therapeutics.
4.		PHARMACOTHERAPEUTICS-I	CO1: The Pathophysiology of selected disease states and the rationale for drug therapy. And therapeutic approach to management of these diseases
			CO2: Describe the Pathophysiology of selected disease states and explain the rationale for drug therapy
			CO3: The controversies in drug therapy; The



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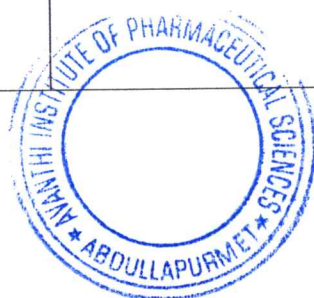
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			importance of preparation of individualised therapeutic plans based on diagnosis; Needs to identify the patient-specific parameters relevant in initiating drug therapy and monitoring therapy
			CO4: Summarise the therapeutic approach to management of these diseases including reference to the latest available evidence; discuss the controversies in drug therapy.
5.		PHARMACOGNOSY	CO1: To understand cell wall constituents and cell inclusion
			CO2: To understand morphology, microscopy and powder characteristics of crude drugs.
			CO3: To be able to determine the quality of lipids
			CO4: To be able to identify unorganized drugs by chemical methods
6.		COMMUNITY PHARMACY	CO1: To be able to understand the disease status.
			CO2: Able to dispense the medication.
			CO3: Able to understand the drug therapy
			CO4: Able to give patient counseling.

S.NO	YEAR/SEM	COURSE NAME	COURSE OUTCOMES
1.		PHARMACOLOGY-II	CO1: To study various routes of drug administration, use of anesthetics in laboratory animals and their handling
			CO2: To learn the composition of physiological salt solutions and basic instruments used in experimental pharmacology



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			<p>CO3: To perform isolated experiments using various isolated preparation and the effect of different drugs on the concentration response curves</p> <p>CO4: To study the preclinical screening of various drugs</p>	
2.	III	PHARMACEUTICAL ANALYSIS	<p>CO1: To understand validation of analytical instruments & methods as per ICH/ USP guidelines, concept of quality assurance and quality control techniques.</p>	
			<p>CO2: To understand principles, instrumentation and application of various chromatographic techniques employed for the analysis of APIs and formulation.</p>	
			<p>CO3: To understand principle, instrumentation and application of various Electrometric methods</p>	
			<p>CO4: To Understand principle, instrumentation and application of UV-Vis, Atomic Absorption and Emission Spectroscopy, Flame Photometry, NMR, Massspectroscopy, Flourimetry, Thermal, X ray diffraction techniques.</p>	
3.	PHARMACOTHERAPEUTICS- II		<p>CO1: To understand therapeutic goals of the drugs used in different diseases</p> <p>CO2: To check & analyze drug interactions, adverse drug reactions</p> <p>CO3: To understand dose and frequency of the medications</p>	
4.		PHARMACEUTICAL JURISPRUDENCE		<p>CO1:To appreciate study Pharmaceutical Legislation, relevance and significance of jurisprudence to Pharmaceutical Sciences.</p> <p>CO2: To know fundamentals of legislation to regulate import manufacture, distribution and sales of drug and cosmetics.</p>



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			<p>CO3: To know the various parameters in the Drug and Cosmetic Act and rules, Drug policy, Drug Price Control Order, Patent and Design act.</p> <p>CO4: To understand the concepts of Narcotic Drugs and Psychotropic substances, Pharmacy Act and Excise duties Act</p>
5.		MEDICINAL CHEMISTRY	<p>CO1: Understand modern concept of rational drug design.</p> <p>CO2: Learn development of the anti-infective drugs including structure activity relationship, mechanism of action, synthesis, chemical nomenclature, brand names and side effects of important compounds.</p> <p>CO3: Understand classification, mechanism of action, structure activity relationship, synthesis, nomenclature and side effects of the drugs acting as antineoplastic agents</p> <p>CO4: Understand classification, mechanism of action, structure activity relationship, synthesis, nomenclature and side effects of the drugs acting as Cardiovascular agents, Hypoglycemic agents, Diuretics, Steroidal Hormones and Adrenocorticoids etc</p>
6.		PHARMACEUTICAL FORMULATIONS	<p>CO1: To understand the principle involved in formulation of various pharmaceutical dosage forms</p> <p>CO2: To prepare various pharmaceutical formulation</p> <p>CO3: To perform evaluation of pharmaceutical dosage forms</p> <p>CO4: To understand and appreciate the concept of bioavailability and bioequivalence, their role in clinical</p>



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S.NO	YEAR/SEM	COURSE NAME	COURSE OUTCOMES
1.		PHARMACOTHERAPEUTICS -III	CO1: Initiate drug therapy and the anticipated therapeutic goals by therapeutic intervention
			CO2: Know the effective use of non-pharmacological therapeutic interventions in the treatment of specific diseases, conditions and symptoms.
			CO3: Demonstrate the ability to effectively communicate and work collaboratively together with others in the small group setting
			CO4: Have moral reasoning, ethical judgement and professionalism
2.	IV	HOSPITAL PHARMACY	CO1: To know various drug distribution methods
			CO2: Know the professional practice management skills ion hospital pharmacies
			CO3: Provide unbiased drug information to the doctors
			CO4: Know The Manufacturing Practices Of Various Formulations In Hospital Set up.
3.		CLINICAL PHARMACY	CO1: Monitor drug therapy of patient through medication chart review and clinical review
			CO2: Obtain medication history interview and counsel the patients.
			CO3: Identify and resolve drug related problems
			CO4: Detect, assess and monitor adverse drug reaction.



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4.	BIOSTATISTICS & RESEARCH METHODOLOGY	CO1: Know the various statistical Methodology 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
5.	BIOPHARMACEUTICS & PHARMACOKINETICS	CO1: Broader understanding about the Pharmacokinetics concepts of biopharmaceutics pharmacokinetics.
		CO2: Ability to calculate various pharmacokinetic parameters by using various mathematical models
		CO3: Ability to design a basic protocol for the conduct of BA/BE study and the interpretation of the BA/BE data
		CO4: Preparedness to use the concepts of pharmacokinetic principles in the clinical contexts.
6.	CLINICAL TOXICOLOGY	CO1: Developing general working knowledge of the principles and practice of clinical toxicology
		CO2: Demonstrating an understanding the health implications of toxic exposures and commonly involved chemicals for toxicity
		CO3: Demonstrating and applying and understanding of general toxicology principles and clinical management practice
		CO4: Demonstrating and applying an understanding of the history, assessment, and therapy considerations associated with



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			the management of a toxic exposure
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1.	V	CLINICAL RESEARCH	CO1: Know the new drug development process.	
			CO2: Understand the regulatory and ethical requirements.	
			CO3: Appreciate and conduct the clinical trials activities	
			CO4: Know safety monitoring and reporting in clinical trials	
2.		PHARMACOEPIDEMIOLOG Y & PHARMACOECONOMICS	CO1: Describe the methods used in Pharmacoepidemiology	
			CO2: Demonstrate competency in the design, conduct and evaluation of Pharmacoepidemiology studies.	
			CO3: Describe the methods used in Pharmaco-economic analysis.	
			CO4: Demonstrate competency in the design, conduct and evaluation of Pharmaco-economic studies.	
3.			CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC DRUG MONITORING	CO1: Ability to design a dosage regimen of a drug based on its route of administration
				CO2: Ability to adjust the dosage regimen for patients with renal / hepatic impairments
				CO3: Ability to assess the drug interaction issues in the clinical settings



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