



Program Outcomes:

Program outcomes are statements conveying the intent of a program of study. Specifically, program outcomes refer to what a student should know or be able to do at the end of a program. They are often seen as the knowledge and skills students will have obtained by the time they have received their intended degree.

Program Outcomes for Doctor of Pharmacy (Pharm.D) Program

- PO1 Clinical and pharmacy knowledge:** Demonstrate a proficient comprehension of pharmacy practice and exhibiting competence in obtaining, organizing, and utilizing up-to-date data to address issues related to individual patient and population-specific care, while prioritizing evidence-based practices that promote the safest and most effective pharmacotherapy outcomes.
- PO2 Evidence based practice and patient centered care:** Provide personalized healthcare to diverse patients by using current evidence and considering individual circumstances. Develop, modify, implement, document, and monitor pharmacotherapy care plans independently or as part of a healthcare team, with a patient-centered approach.
- PO3 Social and cultural awareness:** Valuing cultural, social, and religious perspectives of patients and acknowledging social determinants of health are crucial for safe and appropriate medication use. Healthcare professionals should strive for self-awareness and lifelong learning, and tailor their approach to medication use to individual patients.
- PO4 Professional ethics:** Demonstrate professional behaviour, ethical behaviour, integrity and values while interacting with patients, healthcare providers and society.
- PO5 Problem Solving & Decision Making:** Illustrate competence in utilizing observational, analytical, and critical thinking proficiencies to construct, apply, and assess remedies that address pharmacotherapy dilemmas. Additionally, foster the capacity to make decisions grounded in evidence-based practice.
- PO6 Innovation and Entrepreneurship:** Innovate by employing imaginative thinking to conceive improved methods of achieving professional objectives. Apply scientific inquiry and critical thinking principles to resolve problems and make decisions in everyday practice. Acquire the essential aptitude for establishing a community pharmacy or a series of community pharmacies with patient care amenities.

- PO7 Leadership Skills and Abilities:** The student acquires proficiency in leadership qualities and competencies via both curricular and co-curricular undertakings, utilizing such abilities to spearhead or play an active role in advancing affirmative transformation.
- PO8 Communication Skills:** Display skilled interpersonal communication, adapt to different socioeconomic and cultural factors, and provide competent education to families, patients, caregivers, and healthcare professionals. Function proficiently within a team and offer consultation to healthcare team members, regulatory agencies, and policymakers.
- PO9 Environment and sustainability:** To understand, protect and cooperate environmental concerns for sustaining biodiversity.
- PO10 Lifelong learning:** Cultivate the practice of regularly augmenting knowledge to satisfy clinical demands and societal necessities, thereby facilitating a successful career trajectory.

Course Outcomes:

Course Outcomes are narrower statements that describe what students are expected to know, and be able to do at the end of each course. These relate to the skills, knowledge, and behaviour that students acquire in their enrolment through the course.

Name of the Course	Course Code	Course Outcome Code	Course Outcome Statements
HUMAN ANATOMY AND PHYSIOLOGY	T1101	T1101.1	Describe the structure (gross and histology) and functions of various organs of the human body
		T1101.2	Discuss the various homeostatic mechanisms and their imbalances of various systems and associated disorders
		T1101.3	Identify the various tissues and organs of the different systems of the human body
		T1101.4	Recognize coordinated working pattern of different organs of each system.
		T1101.5	Recognize the interlinked mechanisms in the maintenance of normal functioning of human body.
		T1101.6	Learn the interlinked mechanisms in the maintenance in normal and physical exercise conditions.
PHARMACEUTICS	T1102	T1102.1	Describe the evolution of Pharmacy and Pharmacopoeias
		T1102.2	Discuss the need and identification of different dosage forms
		T1102.3	Design a suitable formulation/dosage form with the use of appropriate ingredients
		T1102.4	Discuss the different techniques involved in formulation of a dosage form
		T1102.5	Analyze the instabilities observed in formulations and suggest suitable remedial measures to overcome the instabilities of dosage form
		T1102.6	Prepare appropriate labels and recommend storage conditions for dosage forms
MEDICINAL BIOCHEMISTRY	T1103	T1103.1	learn the catalytic activities of enzymes and importance of isoenzymes in diagnosis of disease
		T1103.2	Understand the metabolic process of biomolecules in health and illness
		T1103.3	Illustrate the genetic organization of mammalian genome
		T1103.4	learn about protein synthesis, replication, mutation
		T1103.5	Apply the biochemical principles of organ function tests
		T1103.6	Perform qualitative analysis and determination of biomolecules in body fluids

PHARMACEUTICAL ORGANIC CHEMISTRY	T1104	T1104.1	Derive IUPAC Name from structure and vice-versa of simple organic compounds belonging to different classes.
		T1104.2	Understand the important physical properties, reactivity, stability and chemical properties of organic Compounds.
		T1104.3	Knowledge on different organic reactions(Elimination, substitution, addition, oxidation, reduction,.....) and their applications in synthesis of drugs
		T1104.4	Account for various reaction intermediates, their stabilities and reactivity.
		T1104.5	Learn some named reactions, reaction mechanism and their applications.
		T1104.6	Describe the preparation, test for purity medicinal uses and assay of some official organic compounds.
PHARMACEUTICAL INORGANIC CHEMISTRY	T1105	T1105.1	Understand the errors in pharmaceutical analysis and principles of volumetric analysis
		T1105.2	Acquires the knowledge about acid-base titrations and limit tests for inorganic compounds
		T1105.3	Select the appropriate titrimetric method for analysis of drugs
		T1105.4	Know the classify and study the method of preparation and assay of selected inorganic compounds
		T1105.5	Appreciate the importance of inorganic pharmaceuticals in preventing and curing the disease
		T1105.6	Discuss about radioisotopes and applications of radiopharmaceuticals
REMEDIAL MATHEMATICS	T1106	T1106.1	Apply mathematical concepts and principles to perform computation for pharmaceutical sciences
		T1106.2	Create, use and analyze mathematical representation and mathematical relationships
		T1106.3	Communicate mathematical knowledge and understanding to help in the field of pharmacy
		T1106.4	Apply knowledge to solve different problems in various mathematical concepts
REMEDIAL BIOLOGY	T1107	T1107.1	Understand the organization and nomenclature of living things
		T1107.2	Summarize the functions of various types of tissues in plants and animals
		T1107.3	Acquire knowledge on structural modifications in plants and importance of pollination in plants
		T1107.4	Analyze various physiological processes in plants and animals
		T1107.5	Describe the various taxonomical characters of different families and micro-organisms
		T1107.6	Elaborate the study of different kinds of phylum's includes Pisces, Reptiles, Amphibians, Aves& Mammals
HUMAN ANATOMY AND PHYSIOLOGY LAB	T1108	T1108.1	Illustrate different types of Tissues and explain various Anatomical models
		T1108.2	Identify the bones of Skeletal system
		T1108.3	Determine Blood cell count, Hemoglobin, Blood grouping, ESR, Bleeding time and Clotting time
		T1108.4	Record Blood Pressure, Pulse rate, Body temperature
		T1108.5	Identify family planning devices and conduct Pregnancy diagnosis test
		T1108.6	Collaborate effectively in a team environment to conduct laboratory experiments

PHARMACEUTICS LAB	T1109	T1109.1	Understand the principles used in the preparation of liquid, semisolid and solid dosage forms.
		T1109.2	Demonstrate the structure and features of homogeneous liquid medications, both internal and external.
		T1109.3	Investigate the properties and characteristics of biphasic liquid medications.
		T1109.4	Devise the composition and structure of powder medications.
		T1109.5	Evaluate the design and composition of suppositories.
		T1109.6	Resolve incompatibility issues present in prescriptions.
MEDICINAL BIOCHEMISTRY LAB	T110A	T110A.1	Identify and discriminate between proteins, amino acids, and carbohydrates by conducting various qualitative and quantitative analyses.
		T110A.2	Appraise the quantities of blood creatinine, sugar, and serum total cholesterol.
		T110A.3	Organize the buffer solution and gauge pH.
		T110A.4	Demonstrate the impact of salivary amylase on starch.
		T110A.5	Quantify serum sodium and calcium levels.
		T110A.6	Perform examinations of lipid profiles.
PHARMACEUTIC AL ORGANIC CHEMISTRY LAB	T110B	T110B.1	Apply the process of systematic analysis to examine organic compounds of varying functional groups.
		T110B.2	Evaluate the melting and boiling points of organic compounds through experimentation.
		T110B.3	Create derivatives of organic compounds and distinguish their identities.
		T110B.4	Utilize the organic reactions studied in theory to synthesize specific organic compounds.
		T110B.5	Devise a plan and document the yield of compounds created in the laboratory.
		T110B.6	Construct, identify, and elucidate the chemical properties of stereo models.
PHARMACEUTIC AL INORGANIC CHEMISTRY LAB	T110C	T110C.1	Understand the glassware and equipment utilized for volumetric analysis.
		T110C.2	Identify the threshold test to detect impurities in inorganic compounds.
		T110C.3	Execute the titrimetric method to quantitatively analyze organic constituents in pharmaceuticals.
		T110C.4	Predict the composition of a sample mixture by estimating the present components.
		T110C.5	Analyze the characteristics of inorganic substances through qualitative analysis.
		T110C.6	Create and ensure the purity of inorganic components through preparation

REMEDIAL BIOLOGY LAB	T110D	T110D.1	Understand the basic experiments in Biology and to list out the parts in cell
		T110D.2	Demonstrate the preparation of permanent slides, section cutting techniques & different staining methods.
		T110D.3	Identify various animal and plant specimens
		T110D.4	Distinguish the various plant by microscopically examination of roots, stems, fruits, leaf and seeds
		T110D.5	Assess the plant taxonomy based on macroscopic and microscopy findings
		T110D.6	Conduct investigations into the physiology of plants using experimentation.
PATHOPHYSIOLOGY	T2101	T2101.1	Explain the pathogenesis and morphology of reversible and irreversible cell injury; wound healing enumerate various lipoproteins and describe lipoprotein disorders
		T2101.2	Illustrate events involved in acute and chronic inflammation
		T2101.3	Recognize the biological significance of various hypersensitivity disorders
		T2101.4	Discuss the mechanisms involved in autoimmune diseases and allograft rejection
		T2101.5	Explain the etiopathogenesis of selected diseases
		T2101.6	Describe the general biology of cancer, mechanism of shock and effects of radiation exposure
PHARMACEUTICAL MICROBIOLOGY	T2102	T2102.1	Understand diversity of microorganisms with relevance to their nutritional and physical growth requirements for culturing
		T2102.2	Identify bacteria by staining and biochemical reactions and apply controlling methods
		T2102.3	Categorize disinfecting agents and analyze concentration of disinfectants, antibiotics, vitamins etc., using microorganisms
		T2102.4	Classify types of immunity, immunological reactions and different immunological products
		T2102.5	Apply different diagnostic tests for identification of diseases
		T2102.6	Understand the pathogenicity and treatment of various microbial infections
PHARMACOGNOSY & PHYTOPHARMACEUTICALS	T2103	T2103.1	Under stand the basic principles of cultivation, collection and storage of crude drugs
		T2103.2	Describe the source, active constituents, method of preparation and uses of crude drugs
		T2103.3	Enlist the applications of primary and secondary metabolites of the plant
		T2103.4	Discuss substitutes, adulterants and identification tests of various crude drugs

PHARMACOLOGY -I	T2104	T2104.1	Define the fundamental concepts of pharmacology, pharmacokinetics and to understand the basics of drugs interactions, drug discovery and toxicity studies.
		T2104.2	Classify the role of neurotransmitter in autonomic nervous system and summarize the drugs action on it.
		T2104.3	Organize the pharmacology of the drugs acting on cardiovascular system
		T2104.4	Analyze the role of neurotransmitter in central nervous system and summarize the drugs action on CNS and respiratory system.
		T2104.5	Appraise the physiological role of hormones and assess the therapeutic effects of its replacement therapy
		T2104.6	Predict the role of autocoids in pathological conditions and their importance in treating various diseases.
COMMUNITY PHARMACY	T2105	T2105.1	Discuss the roles and responsibilities of community pharmacist
		T2105.2	Outline the layout and infrastructure requirements for community pharmacy
		T2105.3	Recognise the need of inventory control and discuss the various methods
		T2105.4	Explain the different factors that influence a patient's compliance with medication and evaluate their impact on treatment outcomes.
		T2105.5	Apply the skill of communication to provide comprehensive guidance to patients.
		T2105.6	Apply health screening services in community pharmacy and respond to minor ailments and Apply health screening services in community pharmacy
PHARMACOTHER APEUTICS-I	T2106	T2106.1	Describe the pathophysiology and management of cardiovascular, respiratory and endocrine diseases
		T2106.2	Develop the patient case-based assessment Skills
		T2106.3	Describe the quality use of medicines issues surrounding the therapeutic agents in the treatment of these diseases
		T2106.4	Develop clinical skills in the therapeutic management of cardiovascular, respiratory and endocrine diseases
		T2106.5	Implement strategies to improve communication skills in interactions between pharmacists and patients, as well as pharmacists and physicians.
		T2106.6	Provide patient – centred care to diverse patients using the evidence-based medicine
PHARMACEUTIC AL MICROBIOLOGY LAB	T2107	T2107.1	Explain about apparatus used in experimental microbiology
		T2107.2	Describe the different methods of sterilizations
		T2107.3	Summarize the Staining techniques, motility characters, Enumeration of micro-organisms
		T2107.4	Demonstrate the isolation of pure culture and Bio chemical testing for the identification of micro-organisms
		T2107.5	Analyze the antibiotics, enzymes and Vitamins by using microbiological assay
		T2107.6	Emphasize the Diagnostic tests for some common diseases

PHARMACOGNOSY & PHYTOPHARMACEUTICALS LAB	T2108	T2108.1	Identify crude drugs with the help of organoleptic and microscopical features
		T2108.2	Identify crude drugs with the help of Chemical tests
		T2108.3	Conduct analysis of lipids
		T2108.4	Determine Powder characteristics of various crude drugs
PHARMACOTHERAPEUTICS-I LAB	T2109	T2109.1	Apply pharmacotherapeutic principles to identify drug-related problems and develop patient-specific treatment plans.
		T2109.2	Demonstrate the ability to collect and interpret patient information to evaluate the effectiveness and safety of drug therapy
		T2109.3	Select appropriate drug therapy options based on patient characteristics, disease state, and pharmacological properties of drugs.
		T2109.4	Evaluate the efficacy and safety of drug therapy through monitoring patient responses and adverse effects.
		T2109.5	Apply critical thinking and problem-solving skills to analyze and resolve drug-related issues in patient care.
		T2109.6	Demonstrate ethical and professional conduct in all aspects of pharmacotherapeutic practice.
PHARMACOLOGY -II	T3101	T3101.1	Demonstrate comprehension of the pharmacological effects of drugs on the renal system, blood, and immune system.
		T3101.2	Evaluate and analyze the pharmacological features of chemotherapeutic drugs.
		T3101.3	Illustrate the fundamental principles of molecular biology.
		T3101.4	Recognize and value the significance of pharmacology in therapeutics.
		T3101.5	Empower students to utilize theoretical knowledge in clinical settings.
		T3101.6	Formulate and implement animal experiments to discover the pharmacological characteristics of both known and unknown substances.
PHARMACEUTICAL ANALYSIS	T3102	T3102.1	Understand the principle and theory of instrumental analytical techniques
		T3102.2	Outline the instrumentation of spectroscopic, chromatographic and thermal techniques
		T3102.3	Apply the knowledge of spectroscopic, chromatographic and thermal methods in analysis of drugs
		T3102.4	Analyse API's and formulation by using advance instrumental analysis
		T3102.5	Explain theory, instrumentation and applications of electrometric methods of analysis
		T3102.6	Discuss the concepts of validation, calibration, ICH, GLP, ISO9000, TQM and quality variation concepts

PHARMACOTHERAPEUTICS-II	T3103	T3103.1	Explain the etiopathogenesis of selected infectious diseases, musculoskeletal and renal disorders
		T3103.2	Discuss the principles of cancer therapy and dermatological disorders
		T3103.3	Identify the patient-specific parameters relevant in initiating and monitoring drug therapy and adverse effects
		T3103.4	Discuss the therapeutic approach in the management of selected diseases and controversies in drug therapy
		T3103.5	Prepare individualized therapeutic plans based on diagnosis
		T3103.6	Recognise the role of pharmacist in essential and rational drug use
PHARMACEUTICAL JURISPRUDENCE	T3104	T3104.1	Understand the evolution of various pharmaceutical legislation in India
		T3104.2	Explain various laws and professional ethics as prescribed by the Pharmacy Council of India from time to time including International Laws.
		T3104.3	Describe the labelling requirements and packaging guidelines for drugs and cosmetics
		T3104.4	Discuss the concepts of drugs & Cosmetic act, Drug policy, DPCO, Patent and design act, Dangerous Drugs Act, Pharmacy Act and Excise duties Act
MEDICINAL CHEMISTRY	T3105	T3105.1	Remember the significance of drug design and the different approaches utilized for it.
		T3105.2	Discuss the chemistry of diverse drugs concerning their biological impacts.
		T3105.3	Employ knowledge of the mechanism of action and potential adverse reactions of different drugs.
		T3105.4	Examine the synthesis of different drug compounds and the structure-activity relationship (SAR) of key drug classes.
		T3105.5	Evaluate: Assess various marketed products, considering their effectiveness and potential side effects.
		T3105.6	Generate new drug designs based on an understanding of the principles of drug chemistry and design.
PHARMACEUTICAL FORMULATIONS	T3106	T3106.1	Recognize the importance of formulating, preparing, and evaluating diverse pharmaceutical dosage forms.
		T3106.2	Comprehend the different formulation additives applicable to various dosage forms
		T3106.3	Determine appropriate measures to ensure stability of pharmaceutical dosage forms.
		T3106.4	Examine the manufacturing techniques employed for producing solid, semisolid, parenteral, and ophthalmic products.
		T3106.5	Assess various dosage forms using appropriate quality control tests for a particular drug.
		T3106.6	Develop an understanding of suitable packaging materials for a given drug's dosage form.

PHARMACOLOGY -II LAB	T3107	T3107.1	Demonstrate various routes of administration of drugs in animals, maintenance of animals and describe different anaesthetics used in laboratory animals
		T3107.2	Comprehend the function and purpose of laboratory appliances employed in experimental pharmacology
		T3107.3	Explain about the significance of various physiological salt solution used for different isolated tissue
		T3107.4	Perform various bioassay procedure and creates Dose Response Curve for various agonist and antagonists
		T3107.5	Demonstrate the screening methods for different drugs acting on various systems of the body
		T3107.6	Create and apply investigative methods to carry out empirical trials, then organize and present findings in a conventional structure.
PHARMACEUTICAL ANALYSIS LAB	T3108	T3108.1	Apply the principles of chromatographic techniques to separate and identify compounds.
		T3108.2	Evaluate drugs using spectroscopic techniques for both qualitative and quantitative analysis.
		T3108.3	Analyze the active pharmaceutical ingredient (API) in accordance with the Indian Pharmacopoeia (IP).
		T3108.4	Differentiate between the UV spectra of a compound and its derivatives through comparison.
		T3108.5	Calculate the concentration of electrolyte ions using electrometric analysis.
		T3108.6	Analyze and interpret data from IR and NMR spectra.
PHARMACOTHERAPEUTICS-II LAB	T3109	T3109.1	Analyze potential drug interactions and justify the prescription choice.
		T3109.2	Evaluate the therapeutic strategy for managing specific illnesses.
		T3109.3	Construct customized treatment plans according to the diagnosis.
		T3109.4	Communicate with patients and provide counseling.
		T3109.5	Execute planned laboratory experiments and create standardized reports.
		T3109.6	Develop proficiency in a patient-centered approach to boost treatment satisfaction and provide patient counseling
MEDICINAL CHEMISTRY LAB	T3110	T3110.1	Describe the importance of laboratory reagents, their quality and biohazardous nature, green chemicals for the protection of environment
		T3110.2	Categorize the type of assays and apparatus used
		T3110.3	Establish the use of chemicals in different quantities for a synthetic reaction with safety precautions and eco friendly nature
		T3110.4	Demonstrate the synthetic protocol and purification techniques with good laboratory skills and analyse the yield, results.
		T3110.5	Classify different drugs and determine the physicochemical properties of various drugs
		T3110.6	Draw structures using chemistry software

PHARMACEUTICAL FORMULATIONS LAB	T3111	T3111.1	Prepare formulations of different dosage forms as per the batch formula
		T3111.2	Demonstrate proficiency in manipulating various apparatus and tools utilized in formulating medicinal doses.
		T3111.3	Analyze the properties of various packaging containers to determine suitability for a dosage form
		T3111.4	Evaluate different dosage forms by performing quality control tests
		T3111.5	Prepare and evaluate cosmetics such as lipstick, cold cream and shampoo
		T3111.6	Conduct planned experiments and prepare laboratory report in a standard format
PHARMACOTHERAPEUTICS-III	T4101	T4101.1	Explain the etiopathogenesis of selected gastrointestinal, haematological, neurological and psychiatric diseases
		T4101.2	Discuss the principles of evidence-based therapy and pain management
		T4101.3	Identify the patient-specific parameters relevant in initiating and monitoring drug therapy and adverse effects
		T4101.4	Discuss the therapeutic approach in the management of selected diseases and controversies in drug therapy
		T4101.5	Prepare individualized therapeutic plans based on diagnosis
		T4101.6	Develop skills on evidence-based practice in diseases management to become a competent pharmacist.
HOSPITAL PHARMACY	T4102	T4102.1	Explain the Hospital and Hospital Pharmacy Organization
		T4102.2	Understand Budget Preparation and its Implementation
		T4102.3	Describe the Hospital drug policy and functions of various committees
		T4102.4	Illustrate the procedure for Procurement, inventory control, drug distribution ,dispensing of Narcotics
		T4102.5	Discuss Manufacturing of Various Pharmaceutical Dosage forms and handling ,packaging of Radiopharmaceuticals.
		T4102.6	Understand Various Continuous Professional development Programmes, Practices of Hospital Pharmacist .
CLINICAL PHARMACY	T4103	T4103.1	Understand and explain the daily activities of clinical pharmacist and to monitor the patient drug therapy through medication chart review and clinical review
		T4103.2	Obtain medication history interview and counsel the patients on various diseases and lifestyle modifications and by applying communication skills.
		T4103.3	Provide response to a drug and poison information queries using modified systemic approach and to gain ability to establish a drug and poison information centre.
		T4103.4	Interpret selected laboratory results of specific disease states mentioned and to report ADRs and understand the process of pharmacovigilance.
		T4103.5	Identify and resolve drug related problems and medication errors.
		T4103.6	Evaluate biomedical literature in order to get unbiased clinical evidence to develop individualized pharmaceutical care plan.

BIOSTATISTICS & RESEARCH METHODOLOGY	T4104	T4104.1	Choose the appropriate research design and develop appropriate research hypothesis for a project
		T4104.2	Prepare a project proposal
		T4104.3	Formulate and present effective research reports
		T4104.4	Operate various statistical software packages
		T4104.5	Identify and analyze investigation and diagnosis problems using statistical analysis
		T4104.6	Appreciate the importance of Computer in hospital and Community Pharmacy
BIOPHARMACEUTICS & PHARMACOKINETICS	T4105	T4105.1	Analyze basic concepts of absorption, distribution, metabolism and excretion of drugs.
		T4105.2	Understand the mechanisms, interpret various factors affecting drug absorption, distribution, metabolism and excretion of drugs.
		T4105.3	Apply the pharmacokinetic models for the determination of pharmacokinetic parameters.
		T4105.4	Examine multiple dosage regimens based on pharmacokinetic parameters for maximizing therapeutic effectiveness and patient compliance.
		T4105.5	Evaluate various pharmacokinetic parameters for the drugs exhibiting saturation kinetics.
		T4105.6	Design the bioavailability testing protocol of a drug and compare the bioequivalence between marketed products.
CLINICAL TOXICOLOGY	T4106	T4106.1	Describe the mechanism of action of common poisons and antidotes
		T4106.2	Detect and differentiate acute and chronic poisoning by clinical symptoms
		T4106.3	Select appropriate laboratory tests to identify and determine the severity of poisoning
		T4106.4	Detect signs and symptoms of drug abuse and suggest suitable remedial measures
		T4106.5	Recommend the standard procedures to deal with cases of poisoning
		T4106.6	Compare the characteristics and specific standard treatment guideline for the treatment of various toxins
PHARMACOTHERAPEUTICS-III LAB	T4107	T4107.1	Identify drug interactions and rationalize the prescription
		T4107.2	Discuss the therapeutic approach to management of selected diseases
		T4107.3	Prepare individualized therapeutic plans based on diagnosis
		T4107.4	Demonstrate patient counseling skills.
		T4107.5	Conduct planned experiments and prepare laboratory report in a standard format
		T4107.6	Develop skills on drug of choice and patient education in management of diseases.

HOSPITAL PHARMACY LAB	T4108	T4108.1	Assess drug interactions in the given prescription and find out the suitable management
		T4108.2	Interpret drug information queries for a given case by modified systemic approach
		T4108.3	Determine various methods of inventory control
		T4108.4	Enumerate manufacturing of various pharmaceutical formulations
		T4108.5	Categorize the drugs by implementing ABC Analysis
		T4108.6	Develop hospital formulary for a bedded hospital
CLINICAL PHARMACY LAB	T4109	T4109.1	Create awareness in patients by counselling them on various diseases and drugs using clinical knowledge and communication skills.
		T4109.2	Conduct comprehensive and meticulous medication history interview for the preparation of individualized pharmaceutical care plan.
		T4109.3	Interpret laboratory results of specific disease states mentioned and correlating with patient drug therapy while monitoring disease progression.
		T4109.4	Provide response to a drug and poison information queries using modified systemic approach by critically appraising the biomedical literature.
		T4109.5	Report and assess causality of adverse drug reactions to establish a causal relation between an ADR and a drug.
		T4109.6	Perform patient counseling on medication and conduct medication history interview
BIOPHARMACEU TICS & PHARMACOKINE TICS LAB	T4110	T4110.1	Recall the concepts in biopharmaceutics, basic pharmacokinetic parameters and their significance
		T4110.2	Interpret the effect of surfactant, diluents, lubricant and polymorphism on rate of drug dissolution
		T4110.3	Solve bioavailability parameters of drugs by using plasma data and methods to improve bioavailability
		T4110.4	Analyze absorption rate constant, KE, biological half-life, mean residence time and mean absorption time for the given data.
		T4110.5	Estimate the extent of protein binding by equilibrium dialysis or dynamic dialysis methods
		T4110.6	Predict the pharmacokinetic parameters for the given data as per one compartment and two compartment models
CLINICAL RESEARCH	T5101	T5101.1	Illustrate various approaches to drug discovery
		T5101.2	Describe various methods of Post marketing surveillance
		T5101.3	Discuss various ICH- GCP guidelines, CDSCO guidelines
		T5101.4	Explain twelve principles of ethical guidelines of biomedical research and the challenges in implementation of guidelines
		T5101.5	Understand the roles and responsibilities of various clinical trial personnel
		T5101.6	Illustrate the designing of various essential documents

PHARMACOEPIDE MIOLOGY AND PHARMACOECON OMICS	T5102	T5102.1	Remember and recall the origin and need; measurement of outcomes in pharmacoepidemiology and Pharmacoeconomics.
		T5102.2	Understand the various concepts of risks in pharmacoepidemiology
		T5102.3	Apply the concepts of pharmacoepidemiologic methods in conducting various research studies with the help of case studies and available software's.
		T5102.4	Distinguish the selected special applications of pharmacoepidemiology.
		T5102.5	Evaluate the outcome by using various Pharmacoeconomic methods.
		T5102.6	Solve various case studies by applying the concepts of pharmacoepidemiology and Pharmacoeconomics in designing a good outcome.
CLINICAL PHARMACOKINE TICS & PHARMACOTHER APEUTIC DRUG MONITORING	T5103	T5103.1	Discuss the pharmacokinetic principles to individualize drug therapy in patient care situations
		T5103.2	Determine dose, dosing intervals and dosage adjustments of a drug for a given patient
		T5103.3	Apply the principles of pharmacokinetics to analyse and predict drug interactions
		T5103.4	Prepare protocol for TDM of drugs for selected diseases
		T5103.5	Discuss the concept of genetic polymorphism in metabolism, transport and target of a drug
		T5103.6	Develop the skills on individualization of drug dosage regimen in special population by considering TDM indications.
CLERKSHIP	T5104	T5104.1	Discuss the role of Pharmacist in clinical pharmacy services
		T5104.2	Demonstrate the skills of a clinical Pharmacist
		T5104.3	Discuss the available therapeutic options in the management of diseases
		T5104.4	Prepare a pharmaceutical care plan for a given case
		T5104.5	Detect, Interpret and report medication errors and drug interactions
		T5104.6	Apply effective and empathetic communication skills to counsel patients on their medications and lifestyle modifications.
PROJECT WORK	T5105	T5105.1	Analyze patient histories to develop appropriate care plans for a range of medical conditions.
		T5105.2	Evaluate the effectiveness of diagnostic tools and procedures to accurately diagnose patients and recommend appropriate treatment plans.
		T5105.3	Synthesize information from various sources to develop evidence-based recommendations for patient management and care.
		T5105.4	Apply critical thinking skills to identify and resolve complex medical cases and situations.
		T5105.5	Create effective communication strategies to convey complex medical information to patients, families, and other healthcare professionals.
		T5105.6	Demonstrate proficiency in clinical skills, including history-taking, physical examination, and medical record documentation, in a simulated or real-world setting