SULTAN-UL-ULOOM COLLEGE OF PHARMACY

(Estd. by Sultan-ul-Uloom Education Society)
Approved by AICTE & Pharmacy Council of India
Affiliated to Jawaharlal Nehru Technological University, Hyderabad
B.Pharm Program Accredited by NBA
Recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Program: Doctor of Phamacy -PB (Post Baccalaureate) **Duration: 3 years**

COURSE OUTCOMES

First Year Pharm D (PB)

COURSE CODE	COURSE NAME	COURSE OUTCOME STATEMENT
PH401	Pharmacotherapeutics III (Theory)	CO.1 To understand the etiopathogenesis of selected disease states CO.2 To understand the rationale for drugtherapy of the selected disease. CO.3 To understand the importance ofindividualized therapeutic plans based on diagnosis and controversies in drug therapy CO.4 To learn the general prescribing guidelines for special population
PH407	Pharmacotherapeutics III (Practical)	CO.1 To take part in hospital ward round and clinical discussion CO.2 To assess and justify the changes made indrug therapy in allotted patients. CO.3 To identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy CO.4 To discuss the case presentation of the allotted case after discharge
PH402	Hospital Pharmacy (Theory)	CO.1 Able to know various drug distribution methods. CO.2 To know the professional practice management skills in hospital pharmacies & appreciate the stores management and inventory control. CO.3 To provide unbiased drug information to the doctors & appreciate the practice-based research methods. CO.4 To know the manufacturing practices of various formulations in hospital set up.
PH408	Hospital Pharmacy (Practical)	CO.1 To analyse prescriptions for drug interaction CO.2 Formulate and prepare parenteral formulations and powders CO.3 Perform inventory analysis CO.4 Answer drug information queries through literature search CO.5 Conduct planned experiments and prepare laboratory report in a standard format

PH403	Clinical Pharmacy (Theory)	CO.1 Describe general principles involved in the management of poisoning CO.2 Differentiate the clinical symptoms and management of various acute poisonings CO.3 Distinguish the clinical symptoms and management of chronic poisoning by heavy metals CO.4 Devise public and health careprofessionals in the management of emergency cases CO.5 Evaluate, minimize and prevent the substance abuse cases in local population
PH409	Clinical Pharmacy (Practical)	CO.1 Assess prescriptions for drug interaction and answer drug information query CO.2 Perform patient counselling on medication and conduct medication history interview CO.3 Analyse and interpret the data obtained through laboratory tests CO.4 Conduct planned experiments and prepare laboratory report in a standard format
PH404	Biostatistics & Research Methodology (Theory)	CO.1 Recognise the importance of biostatistics in pharmacy CO.2 Understand the research methodology inthe design of pharmacoepidemiological study CO.3 Discuss the methods of collection ofdata and its analysis and Interpretation CO.4 Discuss and evaluate various softwaresfor statistical analysis of data
PH405	Biopharmaceutics & Pharmacokinetics (Theory)	CO.1 To Know the Cause, Etiopathogenesis, Risk factors, Clinical presentation and diagnosticmethods of the selected disease states. CO.2 Knowledge about the pathophysiology ofthe selected disease states and the rationale for the drug therapy and approaches to manage the disease. CO.3 To Identify the patient specific parameters relevant in initiating drug therapy, and monitoring therapy (Including alternatives, Time course of clinical and laboratory indices of therapeutic responses and adverse effects) CO.4 To know the importance of preparation of individualized therapeutic plan based on
PH410	Biopharmaceutics & Pharmacokinetics (Practical)	CO.1 Enhance dissolution characteristics of slightly soluble drugs by co-solvency, soliddispersion and use of surfactant CO.2 Compare dissolution studies of two different marketed products of same drug. CO.3 Perform Protein binding studies of a drug and Calculation of bioavailability CO.4 Calculate the Pharmacokinetic parameters like Ka, Ke, t1/2, Cmax, AUC, AUMC, MRT etc. from blood profile data. CO.5 Calculate bioavailability from urinary excretion data for two

		drugs. CO.6 Determine metabolic pathways for different drugs based on elimination kinetics data CO.7 Perform absorption studies in animal inverted intestine using various drugs.
PH406	Clinical Toxicology (Theory)	CO.1 Able to Answer drug informationquestions. CO.2 Able to perform patient medicationcounselling. CO.3 Able to solve case studies related tolaboratory investigations. CO.4 Able to conduct patient medicationhistory interview.
PH411	Pharmacotherapeutics I & II (Theory)	CO.1 The Pathophysiology of selected disease states and the rationale for drug therapy. And therapeutic approach to management of these diseases. CO.2 The controversies in drug therapy; The importance of preparation of individualized therapeutic plans based ondiagnosis; Needs to identify the 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 effects). CO.3 Describe the Pathophysiology of selected disease states and explain the ra-tionale for drug therapy. CO.4 Summarise the therapeutic approach to management of these diseases including reference to the latest available evidence; dis-cuss the controversies in drug therapy. CO.5 To know the pathophysiology of selected disease states and the rationale for drug therapy CO.6 To understand the therapeutic approach for management of different diseases CO.7 To know the importance of preparation of individualized therapeutic plans based on diagnosis & controversies in drug therapy CO.8 To understand & identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy.
PH412	Pharmacotherapeutics I & II (Practical)	CO.1 Discuss the controversies in drug therapy. CO.2 Discuss the preparation of individualized therapeutic plans based on diagnosis. CO.3 Identify the patient-specific parameters relevant in initiatingdrug therapy. CO.4 Monitoring of drug therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverseeffects). CO.5 To understand therapeutic goals of thedrugs used in different diseases. CO.6 To check & analyze drug interactions,adverse drug reactions CO.7 To understand dose and frequency of themedications CO.8 To understand the time-course of clinical and laboratory indices of therapeutic response and adverse effects.

Second Year Pharm D (PB)

COURSE CODE	COURSE NAME	COURSE OUTCOME STATEMENT
PH501	Clinical research (Theory)	CO.1 To Understand new drug development process CO.2 To Understand clinical studies scenario in Indian and other countries CO.3 To Understand the regulatory and ethical requirement in clinical trails CO.4 To Know the role and responsibilities of clinical trial personnel CO.5 To Know the designing of clinical trial documents CO.6 To Manage the clinical trial coordination process CO.7 To Know safety monitoring and reporting in clinical trails
PH502	Pharmacoepidemiology &Pharmacoeconomics (Theory)	CO.1 To Compare and contrasts different study designs. CO.2 To Distinguish methods of data collection and recording. CO.3 To Understand issues involved in selecting sample and recruiting participants. CO.4 To Discuss threats to validity and issues of interpretations CO.5 To Discuss applications of pharmacoepidemiological concepts and methods to pharmacypractice. CO.6 To Explain measures of disease occurrence and association. CO.7 To Demonstrate knowledge and understanding of statistical theory. CO.8 To Select and apply appropriate statistical techniques for managing common types of medicaldata. CO.9 To Interpret correctly the results of statistical analyses.
PH503	Clinical harmacokinetics & Pharmacotherapeutic drugmonitoring (Theory)	CO.1 To Apply PK-PD principles in cases using patient data to optimize pharmacotherapy and drug dosing for maximal efficacy and minimal toxicity. CO.2 To recognise, document and manage drug dosing in cases involving significant patient pharmacokinetic variability due to physiology or disease (eg age, obesity, pregnancy, malabsorption, organ dysfunction, critical illness, therapeutic target site). CO.3 To recognize, characterize and manage cases with clinically significant PK-PD drug interactions. CO.4 To demonstrate appropriate therapeutic drug management (TDM) in cases with medications for which concentrations can be measured or predicted from available PK research data.

PH504	Clerkship	CO.1 To discuss the role of Pharmacist in clinical pharmacy services CO.2 To demonstrate the skills of a clinical Pharmacist CO.3 To discuss the available therapeutic options in the management of diseases CO.4 To Prepare a pharmaceutical care plan for a given case CO.5 To detect, Interpret and report medication errors and drug interactions
PH505	Project Work	CO.1 To address a problem related to Pharmacy practice in hospital, community service or clinicalset up with a wider perspective and generality CO.2 To address a problem related to Pharmacy practice in hospital, community service or clinicalset up with a wider perspective and generality CO.3 To define the problem to be addressed and translate it into a statement of aim, objectives, scopeand plan for the project CO.4 To carry out and report an information survey and take account of findings in executing project CO.5 To evaluate, select and apply relevant theories and techniques from the full range of courses studied using conceptual models and frameworks to enhance depth of understanding CO.6 To select appropriate methodology for investigative work, taking into account the pros and cons of the alternatives available and develop solution proposals based on reasoned judgement CO.7 To present a coherent, logically argued, fully referenced report and engage in a professional manner in a viva-voce discussion about the project drug

Third year Pharm D (PB)

COURSE NAME	COURSE OUTCOME STATEMENT
Internship	To provide patient care in cooperation with patients, prescribers and other members of an inter-professional health care team-based health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social cultural, economic and professional issues, emerging technologies and evolving biomedical, pharmaceutical, social or behavioral or administrative and clinical sciences that may impact therapeutic outcomes. To manage and use resources of the health care system in cooperation with patients, prescribers, other health care providers, administrative and supportive personnel to promotehealth, to provide, assess and coordinate safe, accurate and time sensitive medication distribution and to improve therapeutic outcome of medication use. To promote health improvement, wellness and prevention in co-operation with patients, communities, at risk population, and other members of inter professional team of health careproviders. To demonstrate skills in monitoring of the national health programs and schemes oriented to provide preventive and promotive health care services to the community. To develop leadership qualities to function effectively as a member of the health care team organized to deliver the health and family welfare services in existing socio- economic, political and cultural environment. To communicate effectively with patients and the community.

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