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: M. Pharm (Pharmacology) **Duration: 2 years**

COURSE OUTCOMES

I YEAR I Semester

COURSE CODE	COURSE NAME	COURSE OUTCOMES Upon completion of this course it is expected that students shall be able to:
6601AA	Advanced Pharmacology- I (Professional Core - I)	CO 1: discuss pathophysiology and pharmacology of specific disorders
		CO 2: understand how drugs function at the cellular and molecular level
		CO 3: recognise the Adverse effects, contraindications, and clinical applications of medications used to treat disorders.
6601AB	Clinical Pharmacology and Pharmacotherapeutics (Professional Core - II)	CO 1: understand the pathophysiology of selected disease states and the rationale for drug therapy
		CO 2: understand the controversies in drug therapy
		CO 3: understand the importance of preparation of individualized therapeutic plans based on diagnosis
		CO 4: understand the needs to identify the patient-specific parameters relevant in initiating drug therapy
		CO 5: understand the monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects
		CO 6: summarize the therapeutic approach to management of these diseases including reference to the latest available evidence
		CO 7: know the therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects
		CO 8: understand the pathophysiology and applied Pharmacotherapeutics of diseases associated with following system/diseases with of special reference to the drug of choice

6601AC	Pharmacokinetics and Drug Metabolism (Professional Elective – I)	CO 1: understand various pharmacokinetic parameter like absorption, distribution, metabolism, and elimination
		CO 2: know the influence of these pharmacokinetic parameters on efficacy of drugs
		CO 3: identify and resolve drug related problems
		CO 4: understand the concept of pharmacogenetics
6601AF	Animal Cell Cultures and Applications (Professional Elective – II)	CO 1: describe the various types of cell cultures, their requirements and advantages
		CO 2: understand the importance of the bioreactor, cell lines and their applications
		CO 3: explain various culture, preservation and maintenance techniques
		CO 4: understand and explain the various IVF techniques, embryo cultures and gene transfer
		CO 5: appreciate the importance of the role embryo culture in and its applications
6601AJ	Research Methodology and IPR	CO 1: understand research problem formulation.
		CO 2: analyze research related information
		CO 3: follow research ethics
		CO 4: understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.
		CO 5: understanding that when IPR would take such important place in growth of individuals & nation, it is needless to emphasis the need of information about Intellectual Property Right to be promoted among students in general & engineering in particular.
		CO 6: understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits.
660101	Advanced pharmacology- I Lab	CO 1: know arious routes of drug administration.
		CO 2: study techniques of blood sampling, anesthesia and euthanasia of experimental animals.
		CO 3: plot CRC of agonists
		CO 4: interpolat bioassay, three and four point bioassay. Calculate of PA_2 value.

660102	Clinical Pharmacology and Pharmacotherapeutics Lab	CO 1: prepare SOAPs and Case presentation..
		CO 2: know rational use of medicines in special population
		CO 3: calculate Bioavailability and Bioequivalence from the given data
		CO 4: interpret Therapeutic Drug Monitoring reports of a given patient
6601AK	English for Research Paper Writing Audit Course – I	CO 1: understand that how to improve your writing skills and level of readability
		CO 2: learn about what to write in each section
		CO 3: understand the skills needed when writing a Title Ensure the good quality of paper at very first-time submission

I YEAR II Semester

COURSE CODE	COURSE NAME	COURSE OUTCOMES Upon completion of this course it is expected that students shall be able to:
6601AV	Advanced Pharmacology- II (Professional Core – III)	CO 1: understand the mechanism of drug actions at cellular and molecular level
		CO 2: discuss the Pathophysiology and pharmacotherapy of different diseases
		CO 3: understand the adverse effects, contraindications and clinical uses of drugs used in treatment of various diseases
6601AW	Pharmacological Screening Methods and Toxicology (Professional Core – IV)	CO 1: appraise the regulations and ethical requirement for the usage of experimental animals.
		CO 2: describe the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals
		CO 3: discuss various newer screening methods involved in the drug discovery process
		CO 4: correlate the preclinical data to humans
6601AX	Quality Use of Medicines (Professional Elective – III)	CO 1: understand the principles of quality use of medicines
		CO 2: know the benefits and risks associated with use of medicines
		CO 3: understand regulatory aspects of quality use of medicines
		CO 4: identify and resolve medication related problems

		CO 5: practice evidence-based medicines
6601BC	Pharmacokinetic and Therapeutic Drug Monitoring (Professional Elective – IV)	CO 1: design the drug dosage regimen for individual patients
		CO 2: interpret and correlate the plasma drug concentrations with patients' therapeutic outcomes
		CO 3: recommend dosage adjustment for patients IV Infusion to Oral dosing
		CO 4: recommend dosage adjustment depending on patient's response
		CO 5: know application of pharmacokinetic parameters in analytical determination
660103	Advanced Pharmacology- II Lab	CO 1: Record CRC of agonist
		CO 2: Effect of agonist and antagonist on CRC
		CO 3: Bioassay – Interpolation three and four point
		CO 4: Effect of drugs on Frog heart
660104	Pharmacological Screening Methods and Toxicology Lab	CO 1: screen various pharmacological activities
		CO 2: learn guidelines of CPCSEA, OECD
		CO 3: screen psychopharmacological, anti-inflammatory and analgesic activities
6601AQ	Constitution of India Audit Course – II	CO 1: understand the premises informing the twin themes of liberty and freedom from a civil rights perspective.
		CO 2: address the growth of Indian opinion regarding modern Indian intellectuals' constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early years of Indian nationalism.
		CO 3: address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution.

II YEAR I Semester

COURSE CODE	COURSE NAME	COURSE OUTCOMES Upon completion of this course it is expected that students shall be able to:
6601BD	Biostatistics (Professional Elective – V)	CO 1: understand the Biostatistics arrangement
		C0 2: know the presentation and formation of tables and charts
		Co 3: learn the correlation and regression

		Co 4: gain the knowledge of analysis of data
		Co 5: learn the Hypothesis testing
6601BM	Audits and Regulatory Compliance (Open Elective)	CO 1: explain the importance of auditing in the pharmaceutical industry.
		CO 2: discuss the different types of audits that are conducted in the pharmaceutical industry.
		CO 3: identify the key steps involved in the audit process.
		CO 4: gather evidence to support audit findings.
		CO 5: prepare an objective and comprehensive audit report.
		CO 6: develop a checklist to use during the audit process.