

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 (Pharmaceutical Chemistry)

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:
6602AA	Advanced Organic Chemistry – I (Professional Core – I)	CO 1: know the Stereochemistry of organic compounds and Asymmetric synthesis and stereo – selective synthesis.
		CO 2: understand the reaction Intermediates and concepts of aromaticity and anti-aromaticity
		CO 3: learn the mechanisms of organic reactions
		CO 4: understands the concepts of Elimination Reactions
		CO 5: gain knowledge of Electrocyclic, pericyclic and sigmatropic reactions
6602AB	Advanced Medicinal Chemistry – I (Professional Core – II)	CO 1: know the methods of Drug discovery in detail with the knowledge of Target and its Validation.
		CO 2: gain knowledge about QSAR parameters, quantitative models and their applications.
		CO 3: learn different methods of CADD. They will be able to explain different virtual screening methods of drugs and molecular modeling techniques.
		CO 4: learn the role of Natural products in Drug discovery mainly, CNS, Anti-cancer and CVS drugs.
		CO 5: gain knowledge on Structure based drug design of different classes of drugs like Thrombin inhibitors, HIV-1 inhibitors etc.,
6602AE	Modern Pharmaceutical Analytical Techniques (Professional Elective – I)	CO 1: gain the knowledge in the Modern Analytical Techniques like chromatography w.r.t analysis of various bulk drugs and their formulations.
		CO 2: gain the knowledge in the GC, HPLC and HPTLC Analytical Techniques like chromatography w.r.t analysis of various bulk drugs and their formulations.

		CO 3: gain the knowledge in the UV-Visible and IR spectroscopic Analytical Techniques like chromatography w.r.t analysis of various bulk drugs and their formulations.
		CO 4: gain the knowledge in the NMR Analytical Techniques like chromatography w.r.t analysis of various bulk drugs and their formulations.
		CO 5: gain the knowledge in the Mass Spectroscopic Analytical Techniques like chromatography w.r.t analysis of various bulk drugs and their formulations.
6602AG	Pharmaceuticals and Food Analysis (Professional Elective – II)	CO 1: understand various analytical techniques in the determination of Food constituents
		CO 2: understand various analytical techniques in the determination of Food additives
		CO 3: understand various analytical techniques in the determination of Finished food products
		CO 4: understand various analytical techniques in the determination of Pesticides in food
		CO 5: have the knowledge on food regulations and legislations
6602AJ	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 emphasize 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.
660201	Advanced Organic Chemistry-I LAB	CO 1: synthesize various organic compounds
		Co 2: characterize the synthesized compound
660202	Advanced Medicinal Chemistry-I LAB	CO 1: synthesize Analgesics, NSAIDS, antipyretics, CNS and CVS drugs
		CO 2: perform QSAR Studies by using softwares

		CO 3: do Docking studies of drugs by using free online softwares
6602AK	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:
6602AV	Advanced Organic Chemistry – II (Professional Core – III)	CO 1: know the Synthetic Reagents & Applications and concepts of Green Chemistry
		CO 2: understand the different catalytic reactions
		CO 3: learn the Molecular Rearrangements & their applications:
		CO 4: understands the concepts of Coupling reactions in peptide synthesis b. Principles of solid phase peptide synthesis,
		CO 5: gain knowledge of Combinatorial Chemistry:
6602AW	Advanced Medicinal Chemistry – II (Professional Core – IV)	CO 1: know the chemistry of Enzyme Inhibitors like Prostaglandin Synthase, PDE, Carbonic Anhydrase Inhibitors and B- Secretase
		CO 2: gain knowledge about the chemistry of Enzyme Inhibitors like ACE, Ach E, HMG-CoA and Protease
		CO 3: learn different Antipsychotic Agents
		CO 4: learn the Peptidmimetic agents & Prodrugs
		CO 5: Biotechnologically produced drugs and Recombinant drug products
6602AX	Pharmaceutical Process Chemistry (Professional Elective – III)	CO 1: gain the knowledge in the synthetic strategy Stages of scale up process: Bench, pilot and largescale process
		Co 2: to learn the Unit operations like extraction, filtration, distillation, evaporation and crystallisation of APIs and
		Co 3: gain the knowledge of unit processes like nitration, halogenation and oxidation

		Co 4: gain the knowledge of unit processes like reduction and fermentation
		Co 5: expertise in industrial safety
6602BA	Screening Methods in Pharmacology (Professional Elective – IV)	CO 1: how to handle animals
		CO 2: know about various techniques for screening of drugs for different pharmacological activities
		CO 3: understand various guidelines and regulations for screening new drug molecules on animals.
		CO 4: expertise in Toxicity tests
660203	Advanced Organic Chemistry-II LAB	CO 1: analyse the Pharmacopoeial compounds and their formulations by instrumental techniques
		Co 2: perform the following reactions of synthetic importance Purification of organic solvents, column chromatography
		CO 3: learn the synthesis of medicinally important compounds involving more than one step along with purification and Characterization
		CO 4: know the typical degradation reactions on selected plant constituent
660204	Advanced Medicinal Chemistry-II LAB	CO 1: synthesize and characterize the drugs
		CO 2: determine the partition coefficient
6602AQ	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:
6602BD	Biostatistics (Professional Elective – V)	CO 1: understand the Biostatistics arrangement
		CO 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
6602BJ	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.