

M. Pharmacy 1st Year 1st Semester (Pharmaceutical Analysis): University Regulation –R22

Subject code	Name of the subject	Course outcomes
6412AA	ADVANCED PHARMACEUTICAL ANALYSIS (Professional Elective –I)	CO1-The quantitative determination of various organic compounds is clearly understood. The spectral analysis, dissolution parameters and microbial assays are also learned.
6412AB	PHARMACEUTICAL FOOD ANALYSIS (Professional core–II)	CO1-At completion of this course student shall be able to understand various analytical techniques in the determination of food constituents, food additives, finished food products, Pesticides in food and also student shall have the knowledge on food regulations and legislations. ³
6412AC	MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES (Professional core -1)	CO1- Appreciable knowledge will be gained by the students in the Modern Analytical Techniques and can apply the theories in the Analysis of various bulk drugs and their formulations. The students will also be in a position to apply their knowledge in developing the new methods for the determination and validate the procedures.
6412AE	Drug Regulatory Affairs (Core Elective – I)	CO1- The clear information about the patent laws, intellectual property rights and drug regulation in India and abroad is gained by the students.
	PHYTO CHEMISTRY	CO1: - Students will be able to know knowledge on various types of Phytoconstituents present in the plants. CO2: - Students will be able to know knowledge on various types of Phytoconstituents evaluation in the plants

	QUALITY CONTROL AND QUALITY ASSURANCE	<p>CO1: - Students will be able understand the CGMP accepts in a pharmaceutical industry.</p> <p>CO2: - Students will be able appreciate the importance of documentation.</p> <p>CO3 :- Students will be able to understand the scope of quality certifications applicable to Pharmaceutical Industries.</p>
	COSMETICS AND COSMECEUTICALS	<p>CO1: - Students shall be able to know Regulatory biological aspects of cosmetics, excipients.</p> <p>CO2: - Students shall be able to know the designing of cosmeceuticals and herbal products.</p>
	STABILITY OF DRUGS AND DOSAGE FORMS	<p>CO1: - Students shall be able to describe the evaluation of stability of solutions, solids and formulations against adverse conditions.</p> <p>CO2: - Students shall be able to suggest the measure to retain stability and storage conditions for retaining the efficacy of the products.</p>
	RESEARCH METHODOLOGY & IPR	<p>CO1: - Upon completion of the subject student shall be able to Understand the research problem.</p> <p>CO2: - Upon completion of the subject student shall be able to know the literature studies, Plagiarism and ethics.</p> <p>CO3: - Upon completion of the subject student shall be able to get the knowledge about technical writing.</p> <p>CO4: - Upon completion of the subject student shall be able to know the Patient rights.</p>

	PHARAMACEUTIC AL FOOD ANALYSIS LAB	CO1:- Students will be able to analyze drugs by using instruments like UV/VIS, IR, & NMR spectroscopy, Mass spectrometry, Gas chromatography, and HPLC. CO2: - Students will be able to handle instruments.
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<u>M.Pharmacy 1st Year 2 nd semester (Pharmaceutical Analysis): University Regulation-R22.</u>		
	ADVANCED INSTRUMENTAL ANALYSIS -I	CO1-By the completion of topics the students will come out with the thorough knowledge of various spectral aspects of X-Ray, IR, SEM, ORD etc which help them in further projects works and also industrial opportunities.
	MODERN_BIO- ANALYTICAL TECHNIQUES	Upon completion of the course, the student shall be able to understand CO1-Extraction of drugs from biological samples. CO2- Separation of drugs from biological samples using different

		techniques. CO4- Guidelines for BA/BE studies
6412AD	PHARMACEUTICAL VALIDATION (Core Elective – I)	Upon completion of the subject student shall be able to CO1-Explain the aspect of validation. CO2- Carryout validation of manufacturing processes. CO3- Apply the knowledge of validation to instruments and equipment's. CO4-Validate the manufacturing facilities.
6412AF	DRUG REGULATORY AFFAIRS (Open Elective - I)	CO1-Students will come to know the different competent regulatory authorities globally. CO2-Students be aware of technical aspects pertaining to the marketing authorization application (MAA). CO3-The regulatory guidelines and directions framed by the regulatory authorities will be helpful to place the drug products in market for marketing approvals.
6412AG	PHARMACOEPIDEMOLOGY & PHARMACOECONOMICS (Open Elective - I)	CO1- Understand the various epidemiological methods and their applications. CO2- Understand the fundamental principles of Pharmacoeconomics. CO3- Identify and determine relevant cost and consequences associated with pharmacy products and services. CO4-Perform the key Pharmacoeconomics analysis methods. CO5-Understand the Pharmacoeconomic decision analysis methods and its applications. CO6 - Describe current Pharmacoeconomic methods and issues.

		C07 - Understand the applications of Pharmacoeconomics to various pharmacy settings.
6412AJ	HERBAL COSMETICS	C01 -Students will learn about the raw materials used in herbal cosmetics and get exposed to various preparations herbal cosmetics.