COURSE OUTCOMES – M.PHARMACY (PHARMACEUTICS)

M.Pharmacy (Pharmaceutics) I Year I Semester (R21) (I Semester)		
Subject Name & Code	**CO's Number**	**Course Outcomes (CO'S) Upon completion of the course student will be able to**
Modern Pharmaceutical Analytical Techniques 21S01101	C03111.1	Understand the principle and instrumentation, Applications of various spectroscopic techniques like UV-Visible, IR and spectroflourimetry and flame emission and atomic absorption spectroscopy.
	C03111.2	Learn and apply the knowledge of NMR-Spectroscopy instruments for effective practical handling and use.
	C03111.3	Gain knowledge on mass spectroscopic technique for the qualitative and quantitative evaluation of drug.
	C03111.4	Develop the Chromatographic techniques for identification, characterization and quantification of drugs.
	C03111.5	Explain Instrumentation and relate identification of compounds by electrophoresis technique and X-ray crystallography and Immunological assays.
Advanced Physical Pharmaceutics 21S03101	C03112.1	Understand the concept of polymers and its applications on pharmaceutical formulations.
	C03112.2	Learn the concept of tablet compression and consolidation.
	C03112.3	Analyze the chemical stability tests of various drug products.
	C03112.4	Describe the flow behavior of fluids and principles of DSC and XRD.
	C03112.5	Understand the concept of solubility and solubilization techniques.
Modern Pharmaceutics - I 21S03102	C03113.1	To recall the concepts of Preformulation and relate them to formulation development.
	C03113.2	Learn the fundamental concepts to develop and formulate the solid dosage forms.
	C03113.3	Learn the concepts of coating and microencapsulation.
	C03113.4	Learn the fundamental concepts to develop and formulate the soft and hard gelatin capsules.
	C03113.5	To illustrate the parameters of optimization and its applications in formulation development.

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Subject Name & Code	**CO's Number**	**Course Outcomes (CO'S) Upon completion of the course student will be able to**
Advanced Biopharmaceutics & Pharmacokinetics 21S03103	C03114.1	To determine the bioavailability testing protocol of a drug and compare the bioequivalence among marketed products.
	C03114.2	Understand the concepts of compartment models and non-compartment models.
	C03114.3	To apply the pharmacokinetic models for the determination of pharmacokinetic parameters.
	C03114.4	Learn the concept of non-linear pharmacokinetics and clinical Pharmacokinetics.
	C03114.5	Understand the concept of time dependent Pharmacokinetics and to predict pharmacokinetic and pharmacodynamic drug interactions.
Modern Pharmaceutical Analytical Techniques Lab 21S01105	C03115.1	Analysis of pharmacopoeial compounds by spectroscopic technique.
	C03115.2	Perform to select suitable analytical techniques for the qualitative and quantitative evaluation of drugs
	C03115.3	Apply the theoretical knowledge of instruments for effective practical handling and use.
	C03115.4	Estimate the compounds by various chromatographic compounds.
	C03115.5	Evaluate structure of organic compounds using suitable spectroscopic tools.
Modern Pharmaceutics – I Lab 21S03104	C03116.1	Understand the importance of preformulation studies and gain knowledge on analytical techniques for estimation of pharmaceutical active ingredients and their formulations.
	C03116.2	To study the effect of excipients on dissolution of tablets.
	C03116.3	Application of Pharmacokinetic models to determine similarity factors.
	C03116.4	Determine the rate constants by acid and alkaline hydrolysis.
	C03116.5	Prepare and evaluate the tablets by different excipients and compare with marketed products.

M.Pharmacy (Pharmaceutics) I Year II Semester (R21) (II Semester)		
Subject Name & Code	**CO's Number**	**Course Outcomes (CO'S) Upon completion of the course student will be able to**
Modern Pharmaceutics - II 21S03201	C03121.1	understand the planning of pilot plant techniques used for all pharmaceutical dosage forms.
	C03121.2	Learn the concepts and advances to develop and formulate the parenteral dosage forms.
	C03121.3	To acquire knowledge in formulation and manufacturing of aerosols.
	C03121.4	Apply the skills and knowledge in formulation and manufacturing of Cosmetics and nutraceuticals.
	C03121.5	Understand the aseptic process to control the microbes by proper testing.
Advanced Drug Delivery System 21S03202	C03122.1	To acquire Knowledge on SR & CR formulations and their factors. PK & PD basis of controlled drug delivery.
	C03122.2	To study the design, evaluation and applications of Transdermal, ocular, IUD and implantable systems.
	C03122.3	To apprehend the importance of nasal, mucosal and colon drug delivery systems.
	C03122.4	Recent developments in the novel biochemical approaches to controlled drug delivery systems.
	C03122.5	To acquire knowledge regarding drug targeting to particular organs.
Industrial Pharmacy 21S03203	C03123.1	Recall the concepts of pharmaceutical unit operations like milling, mixing, filtration and drying.
	C03123.2	To study the principles and production techniques in the large-scale production of different dosage forms.
	C03123.3	To Know the concept of inventory management and Total Quality Management.
	C03123.4	To acquire knowledge on effluent treatment and testing.
	C03123.5	Acquire the skills in validation of analytical methods.
Nano Drug Delivery System 21S03204	C03124.1	To acquire knowledge on concept of nanotechnology.
	C03124.2	Apply the knowledge in synthesizing the nanomaterials.
	C03124.3	Describe the biomedical applications of nanotechnology.
	C03124.4	Apply the knowledge in the design of nanomaterials for drug delivery.
	C03124.5	Understand the Principles of size reduction and separation.

M.Pharmacy (Pharmaceutics) I Year II Semester (R21) (II Semester)		
Subject Name & Code	**CO's Number**	**Course Outcomes (CO'S) Upon completion of the course student will be able to**
Modern Pharmaceutics – II Lab 21S03205	C03125.1	Recall about the solid, liquid and semi-solid dosage forms.
	C03125.2	To prepare and evaluate the creams and lotions.
	C03125.3	To prepare and evaluate the various types of tablets.
	C03125.4	To study the effect of surfactant on drug release studies.
	C03125.5	Apply the sophisticated analytical technique in evaluating the drug release studies of tablets and creams.
Advanced Drug Delivery System Lab 21S03206	C03126.1	Acquire knowledge in carrying out the diffusion studies of various dosage forms.
	C03126.2	To prepare and evaluate the microspheres.
	C03126.3	Dissolution studies of sustained release products in market.
	C03126.4	Formulate and evaluate novel drug delivery systems.
	C03126.5	Apply the sophisticated analytical technique in evaluating the in-vitro studies of novel drug delivery systems.

M.Pharmacy (Pharmaceutics) II Year I Semester (R21) (III Semester)		
Subject Name & Code	**CO's Number**	**Course Outcomes (CO'S) Upon completion of the course student will be able to**
Research Methodology and Intellectual Property Rights 21DRM101	C03211.1	Illustrate research problem formulation.
	C03211.2	Analyze research related information and research ethics.
	C03211.3	Learn how to write research proposal and the effective technical writing.
	C03211.4	Explain how IPR would take such important place in growth of individuals & nation, to summarize the need of information about Intellectual Property Right to be promoted among student community.
	C03211.5	Relate 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.
Biological Screening Methods 21SOE301d	C03212.1	Study the principles, techniques and strategies used in new drug discovery process.
	C03212.2	Understand the basic principles, experimental models and to analyze the statistical designs employed in biological standardization.
	C03212.3	Explain about the toxic evaluations as per the ICH recommendations and study the general principles and procedures involved in them.
	C03212.4	Describe the various newer screening methods involved in the drug discovery process for different classes of drugs.
	C03212.5	Describe the various newer enzymatic screening methods involved in the drug discovery process.