



# Dr. K.V. Subba Reddy Institute of Pharmacy

(Approved by AICTE, P.C.I. New Delhi & Permanently Affiliated to JNTUA Anantapuramu,  
MOU with Government General Hospital & KMC, Kurnool)

Recognized Under Section 2(f) and 12(B) of UGC Act 1956

Opp : Dupadu R.S., N.H - 44, KURNOOL - 518 218, A.P. INDIA.

E-mail : principalkvsrip@gmail.com www.drkvsrip.ac.in

## DEPARTMENT OF PHARMACEUTICS

SUBJECT NAME & CODE	CODE	COURSE OUTCOMES
Modern Pharmaceutical Analytical Techniques 1101 T	C1101.1	Understand the basic knowledge on assay of single and multiple component pharmaceuticals by using various analytical instruments.
	C1101.2	Develop the theoretical knowledge on various instrumental techniques available for analysis of organic substances by using analytical instruments.
	C1101.3	Improve skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals.
	C1101.4	Interpret spectra of UV- visible, IR, NMR and Mass to identify the given compound.
	C1101.5	Describe the general methods for separation and purification of components from a mixture and their application to pharmaceutical industry.
	C1101.6	Apply the knowledge learnt in developing new procedures of their own design.
Advanced Physical Pharmaceutics 3101 T	C3101.1	Describe the particle size analysis method, solid dispersion, physics of tablets, polymer classification and its applications.
	C3101.2	Explain the stability calculations, shelf life calculations and accelerated stability studies.
	C3101.3	Explain the rheology, absorption related to liquids and semi-solid dosage forms.
	C3101.4	State the factors affecting the dissolution and solubility in related to <i>in-vitro/in-vivo</i> correlations.
Modern Pharmaceutics - I 3102 T	C3102.1	Explain the Preformulation parameters, apply ICH guidelines and evaluate drug, drug excipients compatibility.
	C3102.2	Explain about formulation and development, use of excipients in various solid dosage form.
	C3102.3	Describe the tablets, powders, micro-encapsules and coating techniques.

	C3102.4	Describe the capsules, advances in capsule manufacture, machines, processing and control including pharmaceutical aspects.
	C3102.5	Apply the statistical design in different formulations.
Advanced Biopharmaceutics & Pharmacokinetics 3103T	C3103.1	Understand the various factors affecting drug absorption and apply the various regulations related to developing the BA-BE study protocol for the new drug molecule.
	C3103.2	Determine the various pharmacokinetic parameters from either plasma concentration or urinary excretion data of the drug following one and multi compartment models.
	C3103.3	Determine the various pharmacokinetic parameters of a drug after oral administration.
	C3103.4	Summarize the concept of non-linear and clinical pharmacokinetics and their significance.
	C3103.5	Understand the various causes of the pharmacokinetics and drug interactions.
Modern Pharmaceutical Analytical Techniques 1105 P	C1105.1	Recall and relate the principle of spectroscopy, chromatography and other commonly used instrumental methods of analysis.
	C1105.2	Train the students and to give hands on training on these sophisticated instruments.
	C1105.3	Perform quantitative & qualitative analysis of drugs using various analytical instruments like UV- visible and IR spectrophotometer and HPLC.
	C1105.4	Plan and select lab experiments using appropriate analytical skills. Evaluate the quantity of a drug in a given formulation.
	C1105.5	Practice them on solving spectral problems and generate a comprehensive analytical report on the findings.
	C1105.6	Interpret spectra of UV- visible, IR, NMR and Mass to identify the given compound.
Modern Pharmaceutics - I 3104 P	C3104.1	Perform Preformulation studies for development of various dosage forms.
	C3104.2	Perform the effect of compressional force on tablet disintegration time.
	C3104.3	Perform the effect of particle size and binders on dissolution of tablets.
	C3104.4	Compare the dissolution efficiency of various marketed pharmaceutical products.

	C3104.5	Perform the Accelerated stability testing of different tablets.
	C3104.6	Determine the beta cyclodextrin complexes of new drugs and rate order constants.
Disaster Management 21DAC101b	C101b.1	Analyze the vulnerability of an area to natural and man-made disasters/hazards as per the guidelines to solve complex problems using appropriate techniques ensuring safety, environment and sustainability.
	C101b.2	Propose appropriate mitigation strategies for earthquake and tsunami impacts as per code of practice using suitable techniques ensuring safety, environment and sustainability besides communicating effectively in graphical form.
	C101b.3	Analyze the causes and impacts of floods, cyclones and droughts using appropriate tools and techniques and suggest mitigation measures ensuring safety, environment and sustainability besides communicating effectively in graphical form.
	C101b.4	Analyze the causes and impacts of landslides using appropriate tools and techniques and suggest mitigation measures ensuring safety, environment and sustainability.
	C101b.5	Design disaster management strategies to solve pre, during and post disaster problems using appropriate tools and techniques following the relevant guidelines and latest developments ensuring safety, environment and sustainability besides communicating effectively in graphical form.
Modern Pharmaceutics - II 3201T	C3201.1	Understand the planning of pilot plant techniques used for all pharmaceutical dosage forms such as tablets, capsules, parenterals, aerosols, cosmetics and neutraceuticals.
	C3201.2	Describe the formulation development of parenteral dosage forms.
	C3201.3	Outline the principles and formulation aspects of various aerosol dosage forms.
	C3201.4	Explain the principles and formulation aspects of cosmetics and neutraceuticals.
	C3201.5	Understand the concept of aseptic processing and HVAC system.
	C3202.1	Explain fundamentals of controlled drug delivery system.

Advanced Drug Delivery System 3202 T	C3202.2	Describe design, fabrication, evaluation and applications of controlled drug delivery system.
	C3202.3	Summarize on transdermal drug delivery system, ocular drug delivery system.
	C3202.4	Explain bioadhesive drug delivery system and nasal drug delivery system.
	C3202.5	Explain on vaccine delivery for immunization.
	C3202.6	Generalize on liposomes, niosomes, microspheres and nanoparticles.
	Industrial Pharmacy 3203 T	C3203.1
C3203.2		Describe packaging material constructions used in the production of pharmaceutical materials.
C3203.3		Represent the salient features of GMP, TQM applicable in industry.
C3203.4		Explain the effluent treatment and prevention of pollution.
C3203.5		Evaluate the validation of analytical methods and processes.
Nano Drug Delivery System 3204 T	C3204.1	Identify the right material for the nanoformulations.
	C3204.2	Apply the knowledge to develop nano formulations with appropriate technologies.
	C3204.3	Evaluate the product related test and for identified diseases.
	C3204.4	Understand the toxicological aspects of nanosized surfaces, particle size and stability for release of drugs.
Modern Pharmaceutics - II 3205 P	C3205.1	Develop and evaluate mouth washes, cold cream, vanishing cream, calamine lotion, foundation creams and cleansing creams.
	C3205.2	Design and evaluate antiseptic cream, Film coated tablets, floating, fast dissolving and chewable tablets.
	C3205.3	Illustrate the effect of surfactants on drug release.
	C3205.4	Develop and evaluate oral rehydration solution, calcium carbonate tablets
Advanced Drug Delivery System	C3206.1	Develop formulation and evaluate sustained release oral matrix tablets.
	C3206.2	Develop formulation and evaluate microspheres.
	C3206.3	Develop formulation and evaluate transdermal films.

3206 P	C3206.4	Develop formulation and evaluate mucoadhesive system.
	C3206.5	Develop formulation and evaluate enteric coated tablets.
Padagogy Studies 201a	C201a.1	Recognize the theories underlying methodology, searching and learning.
	C201a.2	Describe the pedagogical approaches of teachers in formal and informal classrooms in developing
Research Methodology and Intellectual Property Rights 21DRM101	CM101.1	Understand Research Problem formulation.
	CM101.2	Analyze research Related information.
	CM101.3	Follow research ethics.
	CM101.4	Understand that today's world is controlled by computer, Information technology, but tomorrow world will be ruled by ideas, concept, and creativity.
	CM101.5	Understand 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 in particular.
	CM101.6	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.



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## DEPARTMENT OF PHARMACEUTICAL ANALYSIS

SUBJECT NAME & CODE	CODE	COURSE OUTCOMES
Modern Pharmaceutical Analytical Techniques 1101 T	C1101.1	Understand the basic knowledge on assay of single and multiple component pharmaceuticals by using various analytical instruments.
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	C1101.3	Improve skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals.
	C1101.4	Interpret spectra of UV- visible, IR, NMR and Mass to identify the given compound.
	C1101.5	Describe the general methods for separation and purification of components from a mixture and their application to pharmaceutical industry.
	C1101.6	Apply the knowledge learnt in developing new procedures of their own design.
Advanced Pharmaceutical Analysis 7101T	C4101.1	Understand the importance of quality.
	C4101.2	Learning about ISO management systems and Tools for quality improvement.
	C4101.3	Analysis of issues in quality.
	C4101.4	Provide comprehensive knowledge Quality evaluation of pharmaceuticals.
	C4101.5	Stability testing of drug and drug substances.
	C4101.6	Statistical approaches for quality.
Pharmaceutical and Food Analysis 7102 T	C4102.1	Understand the responsibilities of QA & QC departments.
	C4102.2	Explain the cGMP aspects in a pharmaceutical industry.
	C4102.3	Apply the knowledge learnt in quality control tests for pharmaceuticals and containers.
	C4102.4	Appreciate the importance of documentation.
	C4102.5	Develop skills in Manufacturing operations and controls.

Quality Control And Quality Assurance 7103T	C4103.1	Explain the new product (drug) development process.
	C4103.2	Summarize the concept of Pre-Formulation Studies.
	C4103.3	Understand the necessary information to transfer technology from R&D to actual manufacturing by sorting out various information obtained during R&D.
	C4103.4	Apply the knowledge learnt in quality control tests for pharmaceutical packaging materials.
	C4103.5	Elucidate necessary information to transfer technology of existing products between various manufacturing places.
Modern Pharmaceutical Analytical Techniques 1105 P	C1105.1	Recall and relate the principle of spectroscopy, chromatography and other commonly used instrumental methods of analysis.
	C1105.2	Train the students and to give hands on training on these sophisticated instruments.
	C1105.3	Perform quantitative & qualitative analysis of drugs using various analytical instruments like UV- visible and IR spectrophotometer and HPLC.
	C1105.4	Plan and select lab experiments using appropriate analytical skills. Evaluate the quantity of a drug in a given formulation.
	C1105.5	Practice them on solving spectral problems and generate a comprehensive analytical report on the findings.
	C1105.6	Interpret spectra of UV- visible, IR, NMR and Mass to identify the given compound.
Pharmaceutical and Food Analysis Lab 7104 P	C4104.1	Explain the TQM, Six-Sigma concepts in a pharmaceutical industry.
	C4104.2	Develop of Stability study protocol.
	C4104.3	Perform in-process and finished product quality control tests for tablets, capsules, parenterals and semisolid dosage forms.
	C4104.4	Carry out pre-formulation study for tablets, parenterals.
	C4104.5	Perform quality control tests for Primary and secondary packaging materials.
	C4104.6	Perform the solubility enhancement techniques for improvement of drug release of poorly water soluble drugs.

<p style="text-align: center;">Disaster Management 21DAC101b</p>	C101b.1	Analyze the vulnerability of an area to natural and man-made disasters/hazards as per the guidelines to solve complex problems using appropriate techniques ensuring safety, environment and sustainability.
	C101b.2	Propose appropriate mitigation strategies for earthquake and tsunami impacts as per code of practice using suitable techniques ensuring safety, environment and sustainability besides communicating effectively in graphical form.
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	C101b.5	Design disaster management strategies to solve pre, during and post disaster problems using appropriate tools and techniques following the relevant guidelines and latest developments ensuring safety, environment and sustainability besides communicating effectively in graphical form