

## 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

Principal / Correspondent

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#### PROGRAMME OUTCOMES

#### **Programme Outcomes**

- PO 1 Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
- Planning Abilities: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.

  Problem analysis: Utilize the principles of scientific enquiry, thinking
- PO 3 analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- PO 4 Modern tool us age: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
  - Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when
- PO 5 planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
- Professional Identity: Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
- Pharmaceutical **Ethics:** Honour personal values ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, PO 7 communication and lifestyles. Use ethical frameworks; apply principles while making decisions and take responsibility for outcomes associated with the decisions.
- PO 8 Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
- PO 9 The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice

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PO10 Environment and sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO11 ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effective from others to identify learning needs and to satisfy these needs on an ongoing basis.

PRINCIPAL

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#### **B.PHARMACY**

SUBJECT NAME & CODE	CODE	COURSE OUTCOMES
	C101.1	Identify the gross morphology, structure and functions of cell, skeletal, muscular, cardiovascular system of the human body
Human Anatomy and	C101.2	understand various homeostatic mechanisms and their imbalances in the human body.
Human Anatomy and Physiology –I BP101 T	C101.3	Identify the different types of bones and joints in the human body.
1	C101.4	Analyse the various tissues of different systems of human body
	C101.5	Analyze the Cardiovascular system and lymphatic system.
	C101.6	Learn various techniques like blood group determination, blood pressure measurement, blood cells counting
	C102.1	Explain the theoretical basis of commonly used statistical methods & correctly analyze & interpret the results of statistical data from surveys, experiments & observational studies.
Pharmaceutical Analysis – I BP102 T	C102.2	Illustrate sources of errors in analytical techniques, methods to minimize them and calibration of analytical methods.
	C102.3	Describe the various titrimetric and electrochemical methods of analysis and their application in quality control of pharmaceuticals.
	C102.4	Develop and enhance the analytical skills
	C103.1	Describe the history of pharmacy profession and its scope.
	C103.2	Identify the prescription in a professional manner.
Pharmaceutics – I BP103 T	C103.3	Describe the basics of Pharmaceutical calculations& calculate the dose for a drug.
	C103.4	Discuss about various dosage forms.
	C103.5	Identify and suggest the correction methods in pharmaceutical incompatibilities in prescription.
	C104.1	Acquire Knowledge of sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals.
	C104.2	Demonstrate the principles of limit tests.
Pharmaceutical Inorganic Chemistry	C104.3	Identification of different anions, cations and different inorganic pharmaceuticals.
BP104 T	C104.4	Describe the basic concepts of acidity /basicity, buffers and tonicity applicable in pharmaceuticals.
	C104.5	Summarize the medicinal and pharmaceutical importance of inorganic compounds.

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	C104.6	Describing concepts, principles and applications of radiopharmaceuticals.
Communication Skills BO105 T	C105.1	Explain the key terminologies of process of communication.
	C105.2	Identify the importance of tone, body language and
		active listening as elements of effective communication.
	C105.3	Interpret the factors influencing communication perspectives.
	C105.4	Explain the nuances of audience – centric presentation.
	C105.5	Demonstrate effective interview skills.
	C105.6	Apply appropriate communication style in professional context.
	C106.1	Identify and understand the components of living world, Both Plants and Animals.
	C106.2	Classify and remember the salient features of five kingdoms of life.
Remedial Biology BP106RBT	C106.3	Understand the basic components, both anatomy and physiology of plants.
	C106.4	Discuss and assess anatomy physiology of animals, particularly humans.
	C106.5	Identify and understand the various tissue systems and organ systems in plants and animals.
	C106.1	Know the theory and their application in Pharmacy
	C106.2	Solve the different types of problems by applying theory.
Remedial Mathematics	C106.3	Appreciate the important application of mathematics in Pharmacy.
BP106RMT	C106.4	Apply both conventional and creative techniques to the solutions of mathematical problems.
	C106.5	Solve problems of calculus, matrices.
	C106.6	Apply range of techniques effectively to solve problems including theory deduction, approximation and simulation.
	C107.1	Perform various experiments related to identification of the tissues indifferent systems of human body.
Human Anatomy and Physiology –I BP107	C107.2	Examine various techniques like blood group determination, blood pressure determination, blood cell counting.
P	C107.3	Evaluate various experiments related to special senses and nervous system.





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	C107.4	Practice the determination of heart rate and pulse rate.
	C107.5	Record blood parameters like hemoglobin, clotting and bleeding time.
Pharmaceutical Analysis – I BP108 P	C108.1	Understand the principles of volumetric and electro chemical analysis.
BP108 P	C108.2	Evaluate various volumetric and electrochemical titrations.
	C108.3	Develop analytical skills.
	C109.1	Explain some solid, liquid and semisolid dosage forms.
Pharmaceutics – I BP109 P	C109.2	Select suitable container and storage conditions for a product.
	C109.3	Asses the pharmaceuticals.
	C110.1	Demonstrate with the principles of limit tests.
	C110.2	Acquire the knowledge on identification of inorganic salts through various qualitative tests.
Pharmaceutical Inorganic Chemistry	C110.3	Apply the knowledge to perform tests for purity for different compounds as per IP.
BP110 P	C110.4	Implement skills to prepare inorganic salts -boric acid, potash alum and ferrous sulphate.
	C110.5	Apply knowledge to assess safety, health and consequent responsibilities relevant to this.
	C111.1	Recognize phonemes for proper articulation of words.
G	C111.2	Explain the key concepts of writing skills and listening skills.
Communication Skills BP111 P	C111.3	Apply listening skills and reading skills for comprehension.
	C111.4	Demonstrate conversation skills using appropriate body language and tone.
	C111.5	Demonstrate audience – centric presentation.
	C111.6	Develop professional written document.
	C112.1	Construct and develop microscopic sections of parts of the plant.
Remedial Biology BP112RBP	C112.2	Identify various systems of frog using computer model.
	C112.3	Differentiate the various blood groups.
	C112.4	Calculate the blood pressure and tidal volumes.
	C201.1	Identify the basic knowledge about central nervous system including nervous tissue, brain and spinal
	C201.2	Understand the structure and functions of gastrointestinal tract and to learn about ATP/CTP/BMR

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C201.3	Understand structure and functions of respiratory system and various mechanisms involved in regulation of respiration.
C201.4	Analyse the anatomy of urinary system and physiology of urine formation/micturition
C201.5	Analyse the essentiality of endocrine glands and their hormones.
C201.6	Learn the physiology of male and female reproductive organs and concepts of genetics
C202.1	acquire the knowledge and understanding of the basic experimental principles of pharmaceutical organic chemistry.
C202.2	Generalize the classification, nomenclature, structure and the type of isomerism of the organic compound.
C202.3	Review of important physical properties, reactions (and underlying mechanisms) and methods of preparation of various functional groups.
C202.4	List out reactivity/stability of compounds and intermediates forming in reactions.
C202.5	Demonstrate the identification of organic compound.
C202.6	Summarize the concepts of named reactions and its applications.
C203.1	The study of bio molecules gives knowledge on bio chemical organization of living organisms along with their role.
C203.2	It helps in understanding the catalytic role of enzymes, importance of enzyme inhibition in the design of new drugs.
C203.3	Study of enzymes and isoenzymes emphasizes their role in therapeutic and diagnostic applications.
C203.4	Metabolic pathways of bio molecules helps the students to acquire knowledge on various energy metabolisms that occur in living organisms.
C203.5	Understanding the concepts of mammalian genetic organization, concepts of DNA, RNA, Protein and mutations gives wide knowledge to the student community to face the future challenges in health care sector.
	C201.4 C201.5 C201.6 C202.1 C202.2 C202.3 C202.4 C202.5 C202.6 C203.1 C203.2 C203.3





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	C203.6	The study of metabolic reactions and deficiency diseases gives awareness to the students to develop new alternatives in pharmaceutical industries to face the challenges of nutritional sciences.
	C204.1	Study the various etiological factors for the development of diseases.
Pathophysiology BP204 T	C204.2	Understand the concepts of pathophysiological basis of selected diseases.
	C204.3	Learn the basics of signs and symptoms of diseases.
	C204.4	Study of common complications of the diseases.
Computer Application in Pharmacy	C205.1	To know the various computer applications in pharmacy.
BP205 T	C205.2	To understand various number systems in computers.
	C205.3	To know web technologies.
	C205.4	To understand the various types of databases and applications of databases in pharmacy.
	C205.5	To learn Computers as data analysis in Preclinical development.
	C205.6	To know databases in the concept of bio- informatics.
	C206.1	To create the awareness about environmental problems among learners.
	C206.2	To impart basic knowledge about the environment and its allied problems.
Environmental Sciences BP206 T	C206.3	To develop an attitude of concern for the environment.
BF 200 1	C206.4	To motivate learner to participate in environment protection and environment improvement.
	C206.5	To acquire skills to help the concerned individuals in identifying and solving environmental problems.
	C206.6	To strive to attain harmony with Nature.
	C207.1	Perform the hematological tests like blood cell counts, hemoglobin estimation, bleeding/clotting time etc.
Human Anatomy and	C207.2	Identify the various organs of different systems of human body.
Physiology – II BP207 P	C207.3	Practice the experiments like neurological reflex, body temperature measurement
	C207.4	Study of basic physiological parameters like blood pressure, heart rate, pulse and respiratory volumes.
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	C207.5	Conceptualized study of integumentary systems
	C208.1	Assessment of safety measures in organic chemistry laboratory and various laboratory techniques.
Pharmacoutical Organia	C208.2	Evaluation of steps involved in identification of unknown organic compound.
Pharmaceutical Organic Chemistry – I BP208 P	C208.3	State abilities to prepare suitable solid derivatives from organic compounds.
	C208.4	Build skills to prepare stereo models containing various functional groups.
	C208.5	Represent stereo models and its arrangement.
	C208.6	Apply knowledge to assess safety, health and consequent responsibilities relevant to this.
Biochemistry BP209 P	C209.1	Experiments on qualitative analysis of biomolecules gives practical knowledge to the students for better understanding of compositions of blood and urine samples.
	C209.2	Quantitative analysis of blood sugars, creatinine and cholesterol levels makes the students to be aware of the health conditions like Diabetes and jaundice etc.
	C209.3	Students can gain knowledge on different buffer preparations that helps them in research applications.
	C209.4	Study of enzymes like Amylases give knowledge to the students related to enzyme applications in industries.
	C209.5	Qualitative analysis of urine sample for abnormal constituents helps to know about the diseases related to urine in human beings.
	C210.1	To know how to design a questionnaire using a word processing package and a form in MS Access.
	C210.2	To understand how to create a HTML web page, invoice table and database.
Computer Application in Pharmacy	C210.3	To learn how to create mailing labels Using Label Wizard, generating label in MS word.
BP210 P	C210.4	To understand generating report and printing the report from database.
	C210.5	To know drug information storage and retrieval using online tools and MS Access.
	C210.6	To understand exporting tables, queries, forms and reports to web and XML pages.
	C301.1	Explain the concept of orbital picture, resonance, reactions and effects of substituent's of benzene.



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	C301.2	Understand on acidity, effect of substituent's, reaction and qualitative test of phenols.
	C301.3	Demonstrate basicity, effect of substituent's, reaction of aromatic amines.
Pharmaceutical Organic Chemistry – II BP301 T	C301.4	Reproduce the concept of optical isomerism and geometrical isomerism of organic compounds. Including concept of resolution of racemic modifications.
	C301.5	Describe the synthesis, reactions, structure and medicinal uses of some polynuclear hydrocarbons.
	C301.6	Explain the theory of cycloalkanes and chemistry of fats and oils.
Physical Pharmaceutics – I BP302 T	C302.1	State the physicochemical properties of drug molecules, pH, solubility and formation of complexes.
	C302.2	Explain the role of surfactants.
	C302.3	Explain physical principles of states of matter and phase rule.
	C302.4	Complete pKa values and estimate HLB values.
	C302.5	Summarize the importance of pH and buffers in manufacturing pharmaceutical dosage forms and maintaining stability and Solving problems related to buffers and isotonic solutions.
	C302.6	Summarize skills and working knowledge of the principles and concepts of surface tension and its measurement.
	C303.1	Study of ph. Microbiology gives overall knowledge on microorganisms, infections, treatment and their applications in pharmaceutical industries and medicine.
	C303.2	Methods of identification, cultivation and preservation of microbes give knowledge to students for better understanding in handling them and to know their applications in human life.
Pharmaceutical Microbiology BP303 T	C303.3	Understanding of sterilization concepts gives immense knowledge to the students which help them in getting knowledge in industrial processing.
	C303.4	Concepts of sterility testing are more useful to the students to have sound knowledge in pharmaceutical product manufacturing.
	C303.5	The concepts of cell culture technology are useful for various applications in industries.





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	C303.6	Study of equipments like aseptic cabinet, hot air oven and incubator updates the knowledge of students to have experience in modern tool usage in academics
	C304.1	Explain various unit operations used in Pharmaceutical industries.
	C304.2	To comprehend the material handling techniques.
Pharmaceutical Engineering	C304.3	Identify various processes involved in pharmaceutical manufacturing process.
BP304 T	C304.4	Instruct the pharmaceutical applications of various unit operations.
	C304.5	Review the significance of plant lay out design for optimum use of resources.
	C304.6	Generalize the preventive methods used for corrosion control in Pharmaceutical industries.
Pharmaceutical Organic Chemistry – II BP305 P	C305.1	Acquire Knowledge on separation and identification of qualitative analysis of solid-solid organic binary mixtures.
	C305.2	Demonstrate the concept of re-crystallisation and Steam distillation.
	C305.3	Determination of Ester value, Acid value and saponification value of oil sample.
	C305.4	Use various techniques for the different organic compounds to understand the reaction mechanisms.
	C305.5	Apply knowledge to assess safety, health and consequent responsibilities relevant to this.
	C306.1	Demonstrate solubility studies for different drugs.
	C306.2	Evaluate pKa values and estimate HLB values.
Physical Pharmaceutics – I	C306.3	Examine and determine the percentage composition.
BP306 P	C306.4	Asses Critical Micellar Concentration of various surfactants.
	C306.5	Evaluate of stability constants and partition coefficients.
	C307.1	Hands on experience on the equipments like BOD incubator, LMF chamber, aseptic cabinet and Hot air oven gives knowledge to the students that is useful in understanding microbiological concepts.
	C307.2	Sterilization techniques illustrates role of sterilization and disinfection in various ph. Industries.





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Pharmaceutical	C307.3	Staining techniques helps the students to identify the morphological and cultural characteristic features of microorganisms.
Microbiology BP307 P	C307.4	Pure culture (isolation) techniques helps the students in better understanding of contamination, spoilage like conditions in processing mechanism in industries.
	C307.5	Sterility testings give knowledge to the students about the industrial production of various drugs and medicines and their safety.
	C307.6	Biochemical and analytical tests makes the students to learn the safety issues of products that are useful for community.
	C308.1	Design various experiments related to unit operations.
Pharmaceutical Engineering	C308.2	Instruct to operate equipment's used in the manufacture of pharmaceutical products.
BP308 P	C308.3	Interpret results of the experiments conducted.
	C308.4	Demonstrate the material and energy requirements for optimizing the pharmaceutical unit processes.
	C401.1	Summarize the medicinal uses and other applications of organic compounds.
	C401.2	Acquire the knowledge and understanding of the basic experimental principles of heterocyclic chemistry.
Pharmaceutical Organic Chemistry – III BP401 T	C401.3	Instruct to draw the structures and synthesize simple pharmaceutically active organic compounds having five and six membered heterocyclic compounds.
	C401.4	Describe detailed mechanisms for common naming reactions.
	C401.5	Identify Stereo-chemical features including conformation and stereo electronic effects; Geometrical isomers.
	C402.1	Explain history and basic principles of Medicinal Chemistry.
	C402.2	Study the concept of Physicochemical properties on biological action of drug molecule
Medicinal Chemistry – I	C402.3	Describe classification, mechanism of action, structure activity relationship and uses of drugs acting on Autonomic nervous and Central Nervous system.





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BP402 T	C402.4	Explanation on recent development of Prodrugs, Soft drugs and hard drugs. Scheme of synthesis of drugs from various therapeutic categories.
	C402.5	Acquire Knowledge on structural activity relationship (SAR) of different class of drugs.
	C402.6	Classification of centrally and peripherally acting analgesic drugs.
	C403.1	Explain the concept of rheology and flow properties of pharmaceutical preparations.
Physical Pharmaceutics – II	C403.2	Describe the factors leading to instability of disperse systems, effect of particle size distribution of powders on the manufacture of dosage forms.
BP403 T	C403.3	State the principles of chemical kinetics in stability testing.
	C403.4	Apply the principles of micrometrics, rheology, chemical kinetics & stability, coarse dispersions in the formulation development and evaluation of dosage forms.
Pharmacology – I	C404.1	Describe the pharmacological actions of different classes of drugs.
BP404 T	C404.2	Recognize molecular mechanisms of drug action in the human body.
	C404.3	Read the Basic pharmacological knowledge of drugs in the prevention and treatment of various diseases.
	C404.4	Define the concepts of different types of drug receptors and their signaling mechanisms.
	C404.5	Enumerate the basic knowledge of drug addiction, abuse, drug interactions, and Pharmacovigilance.
	C405.1	know the techniques in the cultivation, storage and production of crude drugs.
	C405.2	Learn the fundamental aspects and applications of plant tissue culture.
Pharmacognosy and Phytochemistry – I	C405.3	Apply various techniques to evaluate the herbal drugs.
BP405 T	C405.4	Understand the significance of Pharmacognosy in allopathy and traditional system of medicine.
	C405.5	Explain the Sources, chemical nature and uses of plant fibres, hallucinogens, teratogens and natural allergens and novel medicinal agents from marine sources.
	C406.1	Construct synthetic procedure and understand related reaction mechanism.





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	C406.2	Learn synthesis of medicinally important compounds / drug intermediates with Recrystallization and TLC techniques.
Medicinal Chemistry – I BP406 P	C406.3	Implement Purification methods for synthesized compounds using Column chromatography.
	C406.4	Evaluation of Partition coefficient of drugs.
	C406.5	Examination of Ionisation constants of drugs.  Apply knowledge to assess safety, health and
	C406.6	consequent responsibilities relevant to this.
	C407.1	Evaluate flow properties of liquids and powders.
	C407.2	Asses the particle size & size distribution using various methods.
Physical Pharmaceutics – II BP407 P	C407.3	Demonstrate the effect of suspending agents on sedimentation volume.
	C407.4	Asses the various orders of reactions.
	C407.5	Examine shelf – life by carrying out accelerated stability studies.
	C408.1	Choose different routes of drug administration in experimental animals.
Pharmacology – I	C408.2	Demonstrate the effects of drugs on animals by simulated experiments.
BP408 P	C408.3	Define the knowledge of the interrelation of pharmacology with other biomedical sciences.
	C408.4	Performance of laboratory investigation techniques.
	C408.5	Basic knowledge of anesthetic and euthanasia techniques used in animal studies.
	C409.1	Understand the chemical nature of crude drug by chemical tests.
Pharmacognosy and Phytochemistry – I BP409 P	C409.2	Perform stomatal number, stomatal index, vein islet number, vein islet termination and palisade ratio of leaf drug.
	C409.3	Understand and determine size of starch grains, calcium oxalate crystals, length and width of fiberof the sample.
	C409.4	Able to perform Ash value, Extractive values, moisture content, swelling and foaming index for the evaluation of crude drug.
	C501.1	Evalate basic principles and development of diuretics.
	C501.2	Generalize History and basic and core aspects of the drug design.
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Medicinal Chemistry – II BP501 T	C501.3	Summarize the development of drugs used in cardiac diseases like Arrythmias, hypertension, diuretics and endocrine system.
	C501.4	Describe recent development in Drugs acting on blood.
	C501.5	To acquire knowledge about the chemotherapy for cancer.
	C502.1	Asses the physicochemical properties of drugs as a tool in the optimization of solid and liquid dosage forms.
	C502.2	Develop Solid dosage forms and liquid dosage forms using established procedures and machinery.
Industrial Pharmacy – I BP502 T	C502.3	To learn Awareness on the facilities and required standards necessary for the industrial production of sterile dosage forms.
	C502.4	To Formulate and prepare different types of parenteral, ophthalmic dosage forms, cosmetics such as lipsticks, shampoos, cold cream and vanishing cream.
	C502.5	Select and evaluate appropriate packaging materials for various pharmaceutical dosage forms.
Pharmacology – II BP503 T	C503.1	Understand the pharmacology and pharmacotherapy of common and essential medications used to treat cardiovascular disorders.
	C503.2	Explain the principles, uses, and types of bioassays.
	C503.3	Recognize drugs interactions and adverse drug responses.
	C503.4	Understand the relationship between pharmacology and other biomedical sciences.
	C503.5	Discuss pharmacological mechanisms and their importance in disease treatment.
	C504.1	Know the basic metabolic pathways and formation of different secondary metabolites through various biosynthetic pathways.
	C504.2	Understand the utilization of radioactive isotopes in the investigation of biogenetic studies.
Pharmacognosy and Phytochemistry – II	C504.3	Understand the basic techniques like spectroscopy, chromatography and electrophoresis in the isolation, purification and identification of crude drugs.



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Pharmaceutical Jurisprudence BP505 T  C506.5  Industrial Pharmacy – I BP506 P  Industrial Pharmacy – I BP506 P  Pharmacology – II BP507 P  Explain the source, chemistry, therapeutic use and commercial applications of various secondar metabolites containing drugs.  Explain the source, chemistry, therapeutic use and commercial applications of various secondar metabolites containing drugs.  Discuss the method for industrial production estimation and utilization of some therapeutical important phytoconstituents.  Explain the source, chemistry, therapeutic use and commercial applications of various secondar metabolites containing drugs.  Discuss the method for industrial production estimation and utilization of some therapeutical important phytoconstituents.  Explain the source, chemistry, therapeutic use and commercial applications of various secendar metabolites containing drugs.  Discuss the method for industrial production some therapeutical important phytoconstituents.  Explain the source, chemistry, therapeutic use dispersions of various secondar metabolites containing drugs.  Discuss the method for industrial production some therapeutical important phytoconstituents.  Explain the importance of code of pharmaceutical methods and commercial products.  Explain the importance of code of pharmaceutical for drugs and cosmetics.  C505.4 Memorize and explain the provisions of act pertaining to drugs and cosmetics.  C505.5 State the latest amendments with respect to DPC0 and pharmaceutical products.  C505.5 State the latest amendments with respect to DPC0 and pharmaceutical products.  C505.6 Jesse the test.  C506.1 Jesse the provisions of price fixation of pharmaceutical products.  C506.1 Jesse the Pharmaceutical Acts and Laws and their implications in the development and marketing of pharmaceutical products.  C506.1 Jesse the Pharmaceutical products.  C506.2 Jesse the provisions of price fixation of pharmaceuti			And the second special costs with the second
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		C507.5	Conduct in vivo research using isolated tissue



## 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

C508.1 Analyze the Macroscopy, Microscopic and powder characteristics of crude drugs for detection.  C508.2 Apply techniques and tests for the isolation, identification of phytoconstituents.  C508.3 Understand the separation techniques of sugars and herbal extract by paper and thin layer chromatography.  C508.4 Know the separation and detection techniques of volatile oils.  C508.5 Distinguish the unorganized crude drugs by various chemical test.  C601.1 Generalize the concept and development of antibiotic.  Describe how current drugs were developed by using pharmacophore modelling and docking technique.  C601.4 Impart knowledge in the chemotherapy for cancer.  C601.5 Demonstrate the concept of viral diseases.  Demonstrate the concept of viral diseases and its development.  To acquire knowledge about the mechanism pathways of different class of medicinal compounds.  C602.1 Understand the significance of chemotherapeutic agents.  C602.2 Understand the significance of chemotherapeutic agents.  C602.3 Explain the importance of drugs used in treatment of Cancer, tuberculosis, leprosy, fungal Diseases, viral diseases, UTI, STD & mp; immunosuppressive agents.  C602.4 Understand the mechanism of action and treatment of drugs act on infectious diseases.  C602.5 Evaluate the symptoms and treatment of various drug poisoning.  C603.1 Understand herb-food and herb-drug interaction of various plant drugs.			
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C602.2 agents.  C602.3 Explain the importance of drugs used in treatment of Cancer, tuberculosis, leprosy, fungal Diseases, viral diseases, UTI, STD & Description and treatment of drugs act on infectious diseases.  C602.4 Understand the mechanism of action and treatment of drugs act on infectious diseases.  C602.5 Evaluate the symptoms and treatment of various drug poisoning.  C603.1 Understand raw material as source of herbal drugs from cultivation to herbal drug product.  Utilize the plants as nutraceuticals in ailments and also understand herb-food and herb-drug			The San James Comment of the Comment
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Herbal Drug Technology BP603 T	C603.3	Identify the natural origin drugs as raw materials for preparation of cosmetics, excipients, conventional herbal formulations and novel dosage forms like phytosomes.
	C603.4	Explain and understand the stability testing of herbal drugs as per WHO and ICH guidelines for evaluation of herbal drugs and patenting of natural products.
	C604.1	Describe the concept of ADME of drug in human body.
Biopharmaceutics and	C604.2	Describe the various pharmacokinetic parameters from either plasma concentration or urinary excretion data of the drug.
Pharmacokinetics BP604 T	C604.3	Apply the various regulations related to developing BA-BE study protocol for the new drug molecule.
BI 004 I	C604.4	Summarize the concept of multi compartment models, multiple dose administration and their significance.
	C604.5	Identify the various causes of nonlinear pharmacokinetics.
	C605.1	Ph. Biotechnology helps in understanding the applications of Immobilized enzymes in pharmaceutical industries.
Pharmaceutical	C605.2	The study of genetic engineering concepts emphasizes the applications of various r DNA products for the future therapeutics.
Biotechnology BP605 T	C605.3	Monoclonal antibodies by Hybridoma technology gives knowledge on future problems and their solutions in healthcare sector of our society.
	C605.4	Fermentation technology mainly illustrates the production of various fermented products in industries and their benefits to the community as well as learning skills of various techniques on fermentation process.
	C605.5	The concepts of immunology gives knowledge to the students to aware of various infections or diseases caused by different pathogens.
	C605.6	The techniques like PCR, Blottings and ELISA are the modern tools for the usage in pharmacy and medicine.
	C606.1	Understand the cGMP and GLP, ICH aspects in a pharmaceutical industry.
	C606.2	Realize the importance of documentation.





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Quality Assurance	C606.3	Explain the responsibilities of TQM, QA & QC departments.
BP606 T	C606.4	Know the handling of return goods and Good Warehousing Practices in pharma industry.
	C606.5	Describe the importance of calibration and validation of instruments.
	C607.1	Apply various Synthetic, recrystallization techniques and understand reaction mechanisms involved in synthesis of medicinally important organic compound.
	C607.2	Learn the Synthesis of medicinally important organic compounds using microwave assisted organic synthesis.
Medicinal Chemistry – III BP607 P	C607.3	Acquire Knowledge on assay principles and procedure of medicinally important drugs including antibiotic.
	C607.4	Examine and implementation of principle and operating procedure of microwave assisted synthesis in comparison with conventional procedure.
	C607.5	Apply knowledge to assess safety, health and consequent responsibilities relevant to this.
	C608.1	Calculate animal doses for experiments in pharmacology.
	C608.2	Examine the biochemical investigations.
Pharmacology – III BP608 P	C608.3	Record the effect of drugs on isolated preparations by using computerized simulated software.
DF000 F	C608.4	Define OECD guidelines and ethical principles in acute and chronic oral toxicity study.
	C608.5	Understand various Biostatistics methods in experimental pharmacology.
Herbal Drug Technology BP609 P	C609.1	Evaluate the preliminary qualitative screening of crude drugs and excipients of natural sources.
	C609.2	Determine the alcohol content of ayurvedic preparartion and aldehyde content, phenol content of volatile oils.
	C609.3	Know the formulation and evaluation techniques of herbal creams, lotions and shampoos.
	C609.4	Apply the Preparation and standardization process for herbal syrup, mixtures and tablets.
	C609.5	Analyze the monograph herbal drugs as per Pharmacopoeia.



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	C701.1	Impart a fundamental knowledge on the principles and instrumentation of spectroscopic and chromatographic technique.
Instrumental Method of Analysis BP701 T	C701.2	Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis.
	C701.3	Describe the general methods for separation and purification of components from a mixture and their application to pharmaceutical industry.
	C701.4	Perform quantitative & qualitative analysis of drugs using various analytical instruments.
	C701.5	Underlines on theoretical and practical knowledge on modern analytical instruments that are used for drug testing.
	C702.1	Summarize the scale up process in pharmaceutical industry.
	C702.2	Review the technology transfer.
Industrial Pharmacy – II	C702.3	Explain about various laws and acts that regulate pharmaceutical industry.
BP702 T	C702.4	Implement the regulatory environment by upholding good regulatory practices.
	C702.5	Describe the regulations and approval process in pharmaceutical industry.
	C703.1	Describe the functioning of hospital and community pharmacy. Identify and assess adverse drug reactions.
Pharmacy Practice BP703 T	C703.2	Establishment of pharmacy and therapeutic committee. To develop the contents of hospital formulary and adapt to drug distribution system in the hospital.
	C703.3	Implementation and practice patient medication history interview and counseling in management of diseases.
	C703.4	To establish drug store, manage and implement inventory control techniques.
	C703.5	To identify and interpret clinical laboratory tests o specific disease states.
	C703.6	To describe the functions and responsibilities o hospital and clinical pharmacist.
	C704.1	List the Various Approaches for Development o Novel Drug Delivery Systems.
	C704.2	Review Different Types of Oral Controlled Drug Delivery System.

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	C704.3	Recite Knowledge on Transdermal Drug Delivery Systems.
Novel Drug Delivery System BP704 T	C704.4	Evaluate various approaches for the development of targeted drug delivery systems.
	C704.5	Describe about Mucoadhesive Delivery Systems and Their Significance.
	C704.6	Fundamental Study of Resealed Erythrocytes: A Novel and Promising drug carrier.
Instrumental Method of	C705.1	Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis.
Analysis BP705 P	C705.2	Describe the chromatographic separation and analysis of drugs.
	C705.3	Perform quantitative & qualitative analysis of drugs using various analytical instrument.
	C801.1	To Formulate a research question, hypotheses and related objectives (general and specific).
	C801.2	To Understand and apply statistical methods for the design of biomedical research.
Biostatistics and Research	C801.3	To gain the knowledge and understanding the concept of statistical theories in evaluation of research.
Methodology BP801T	C801.4	To gain the knowledge how to and interpret results from specialized computer software.
	C801.5	To Know the various statistical techniques to solve statistical problems.
	C801.6	To Know the operation of M.S. Excel, SPSS, R and MINITAB®, DoE (Design of Experiment).
	C802.1	Understand the concept of health and health education.
Social and Preventive Pharmacy BP802T	C802.2	To create awareness about various preventive measures of stated communicable and non communicable diseases.
	C802.3	Appling the mentioned knowledge of national health program serving the community in the real world.
	C802.4	To describe the several vaccines included in the national immunization program and their schedule.
	C802.5	To illustrate the influence of urbanization and socio-cultural influences on health.
	C802.6	To assess the issue with pharmacy and health from a societal perspective.





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Principal / Correspondent

Date		
Date	 	

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SUBJECT NAME & CODE	CODE	COURSE OUTCOMES
	C101.1	Identify the various tissues and organs of the different systems.
	C101.2	Describe the various homeostatic mechanisms and the imbalances of various systems.
Human Anatomy and Physiology 101 T	C101.3	Explain the structure and functions of various organs of the human body.
Thysiology for T	C101.4	Discuss the interlinked mechanisms in the maintenance of normal functioning of human body.
	C101.5	Understand the effect of Skeletal muscles in Sports physiology.
	C102.1	Describe the evolution of Pharmacy and Pharmacopoeias.
	C102.2	Discuss the need and identification of different dosage forms.
	C102.3	Design a suitable formulation/dosage form with the use of appropriate ingredients.
Pharmaceutics 102 T	C102.4	Discuss the different techniques involved in formulation of a dosage form.
	C102.5	Analyze the instabilities observed in formulations and suggest suitable remedial measures to overcome the instabilities of dosage form.
	C102.6	Prepare appropriate labels and recommend storage conditions for dosage forms.
Medicinal Biochemistry 103 T	C103.1	Describes the cell organization, catalytic activity of enzymes and importance of isoenzymes in diagnosis of diseases.
	C103.2	Illustrates the metabolic process of biomolecules in health and illness (metabolic disorders).
	C103.3	Explains the genetic organization of mammalian genome; protein synthesis; replication; mutation and repair mech
	C103.4	Describe the biochemical principles of organ function tests of kidney, liver and endocrine gland.



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	C103.5	Demonstrate the qualitative analysis and determination of biomolecules in the body fluids.
	C104.1	Understand basic concepts of organic chemistry.
	C104.2	Summarize the naming reactions of carbonyl compounds and special emphasis on mechanisms and orientation of chemical reactions.
Pharmaceutical Organic	C104.3	Analysis of kinetics, mechanism, stereochemistry of free radical, electrophilic, nucleophilic addition reactions and theory of resonance.
Chemistry 104 T	C104.4	Comparison of reactivity, orientation and factors influencing aliphatic nucleophilic substitution with aromatic nucleophilic substitution.
	C104.5	Discussion on the method of preparation, test for purity, assay and medicinal uses of selected organic compounds.
	C104.6	Remember IUPAC rules for nomenclature of organic compounds and Identification of the structures of a given organic compound and nomenclature.
	C105.1	Summarize the principles, procedures and applications of various titrations.
	C105.2	Understand concept of impurities its identification and limit tests in pharmaceutical substances.
Pharmaceutical Inorganic Chemistry 105 T	C105.3	Construct various methods to prepare inorganic pharmaceutical substances.
	C105.4	Remember storage conditions for inorganic pharmaceuticals.
	C105.5	Estimate the inorganic medicinal substances and interpret their percentage purity.
	C105.6	Understand basics of radio activity and recognize the role of essential trace elements.
Remedial Mathematics 106 T (A)	C106.1 A	Know the theory and their application in Pharmacy.
	C106.2 A	Solve the different types of problems by applying



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		theory.
	C106.3 A	Appreciate the important application of mathematics in Pharmacy.
	C106.4 A	Apply both conventional and creative techniques to the solutions of mathematical problems.
	C106.1 B	Understand the basic components, both anatomy and physiology of plants.
	C106.2 B	Identify and understand the Physiology and reproduction in plants.
Daniel Dialege 106 T (D)	C106.3 B	Understand the taxonomy in plants.
Remedial Biology 106 T (B)	C106.4 B	Identify and understand the various tissue systems and cell organization in animals.
	C106.5 B	Classify and study about different animal classes especially reptiles, aves, pisces and mammals.
	C107.1	Identify the various tissues of the human body.
Human Anatomy and	C107.2	Perform the hematological tests.
Physiology 107 P	C107.3	Record blood pressure and simple muscle curve.
	C107.4	Study of various systems of the human body.
	C108.1	Formulate various solid and liquid dosage forms.
	C108.2	Demonstrate different techniques involved in formulation.
Pharmaceutics 108 P	C108.3	Identify and apply the suitable remedial measures to solve instabilities observed in formulations.
	C108.4	Prepare appropriate labels for dosage forms.
	C108.5	Conducts planned experiments and prepare laboratory report in a standard format.
Medicinal Biochemistry 109 P	C109.1	Employs the qualitative analysis of urine sample for normal and abnormal constituents.
	C109.2	Experiments on blood sample helps the students to know the various parameters that are related to health and disease conditions.
	C109.3	Examining the biological samples for clinical significance of blood sugar, creatinine, cholesterol like samples gives practil knowledge to the students.



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	C109.4	Describes about the enzymatic tests like SGOT, SGPT and enzyme kinetic tests.
	C110.1	Acquire the knowledge and understanding of the basic experimental principles of pharmaceutical organic chemistry.
	C110.2	Apply stereo models and explain the structural aspects of organic compounds.
Pharmaceutical Organic Chemistry 110 P	C110.3	Identify various classes of organic compounds by systematic qualitative analysis, outline the preliminary tests and detection of elements for qualitative analysis.
	C110.4	Make correct use of various equipment's and take safety measures while working in Chemistry Laboratory.
	C110.5	Synthesize simple organic compounds by different organic reactions.
	C110.6	Analyze the appropriate method for purification of organic compounds.
	C111.1	Analyze the purity of compound quantitatively by performing assays.
	C111.2	Identify the impurities in given inorganic compounds by performing limit tests.
Pharmaceutical Inorganic	C111.3	Apply different methods to prepare inorganic pharmaceuticals.
Chemistry 111 P	C111.4	Carryout identification tests as per Indian Pharmacopoeia.
	C111.5	Determine the impurities qualitatively by performing test for purity.
	C111.6	Estimation of pharmaceutical inorganic compounds by gravimetry.
	C112.1	Construct and develop microscopic sections of parts of the plant.
Remedial Biology 112 P	C112.2	Identify and study different animal specimen.
	C112.3	Various systems of frog using computer model.
Pathophysiology 201 T	C201.1	Apply the knowledge of the relevant aspects of pathology of various conditions with reference to its pharmacological applications.
	C201.2	Evaluate the basic Pathophysiological
		mechanisms in various diseases.



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	C201.3	Explain the etiopathogenesis of selective diseases.
	C201.4	Discuss the pathogenesis and morphology of reversible and irreversible cell injury.
	C201.5	Describe various lipoproteins and lipoprotein disorders, with acute and chronic inflammation, cancer, auto immune diseases with biological significance of hypersensitivity disorders.
	C201.6	Execute the baseline knowledge and application in other subject of pharmacy.
	C202.1	Explains the anatomy, identification, growth factors and sterilization of microorganisms.
	C202.2	Describes the mode of transmission of disease causing microorganism, symptoms of disease, and treatment aspect.
Pharmaceutical Microbiology 202 T	C202.3	Illustrates the cultivation and identification methods of the microorganisms in the laboratory.
	C202.4	Demonstrates the identification of diseases by performing the diagnostic test.
	C202.5	Describes the behavior of motility and behavioral characteristics of microorganisms.
Pharmacognosy &Phytopharmaceuticals 203 T	C203.1	Describe the history and scope of pharmaconosy and identify the cell wall constituents and cell inclusions.
	C203.2	Know the cultivation, collection, processing, storage of medicinal plants.
	C203.3	Discuss regarding natural pesticides and their sources and describe the various plant fibers used in surgical dressing and related products.
	C203.4	Learn the pharmacognosy and chemistry of carbohydrates, lipids, proteins and elaborate on their sources.
	C203.5	Learn the Microscopical and powder microscopical study of crude drugs.
	C203.6	Enumerate the role of medicinal plants in the identification of adulteration and contamination of herbal medicines and determine the adulteration in crude drug.





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Pharmacology-I 204 T	C204.1	Demonstrate the basics of pharmacodynamics, adverse reaction, drug interaction and drug discovery.
	C204.2	Explain the role of neurohumoral transmission and drugs acting on peripheral nervous system.
I manuscrogy I 20 T	C204.3	Distinguish the function of neurotransmitters and drugs acting on central nervous system.
	C204.4	Identify the role of autocoids and related drugs.
	C204.5	Classify and explain the pharmacology of drugs acting on various systems.
	C204.6	Explain the physiological role of sex hormones and to assess the effect of oral contraceptives.
	C205.1	Discuss the roles and responsibilities of community pharmacist.
	C205.2	Outline the layout and infrastructure requirements for community pharmacy.
Community Pharmacy 205	C205.3	Recognize the need of inventory control and discuss the various methods.
1.	C205.4	Discuss the factors affecting medication adherence.
	C205.5	Perform general patient counseling.
	C205.6	Apply health screening services in community pharmacy.
Pharmacotherapeutics-I 206 T	C206.1	The Pathophysiology of selected disease states and the rationale for drug therapy. And therapeutic approach to management of these diseases.
	C206.2	The controversies in drug therapy; The importance of preparation of individualized therapeutic plans based on diagnosis; Needs to identify the patient-specific parameters relevant in initiating drug therapy and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).
	C206.3	Describe the Pathophysiology of selected disease states and explain the rationale for drug therapy.



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	C206.4	Summarize the therapeutic approach to management of these diseases including reference to the latest available evidence; discuss the controversies in drug therapy.
	C206.5	Explain the general prescribing guidelines and rational use of drugs.
	C206.6	Recognize the role of pharmacist in essential and rational drug use.
	C207.1	Explains the sterilization and disinfection methods for the control of micro-organisms.
Pharmaceutical	C207.2	Examination of microbes by staining techniques helps to identify the different types of microorganisms.
Microbiology 207 P	C207.3	Biochemical tests employs in study of cultural characteristic features of microbes.
	C207.4	Diagnostic tests like widal tests give experimental knowledge to the students on diagnosis of diseases.
Pharmacognosy	C208.1	Experiment macroscopical&microscopical characters of few pharmacognostically important crude drugs with neat labeled diagrams. Examine the powder microscopy of few crude drugs with well demonstrated diagrams.
&Phytopharmaceuticals208	C208.2	Able to identify compound by performing chemical test.
	C208.3	Determine the chemical parameters of few oils that is of pharmacognostic significance.
	C208.4	Enumerate and list the cell contents and cell inclusions in a plant.
Pharmacotherapeutics-I	C209.1	Discuss the controversies in drug therapy.
209 P	C209.2	Discuss the preparation of individualised therapeutic plans based on diagnosis.
	C209.3	Identify the patient-specific parameters relevant in initiating drug therapy.
	C209.4	Monitoring of drug therapy (including alternatives, timecourse of clinical and laboratory indices of therapeutic response and adverse effects).

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ncipal / Correspondent		Date:
	C209.5	Discuss the therapeutic approach to management of selected diseases.
	C209.6	Perform patient counselling and Conduction planned experiments and prepare laboratory report in a standard format.
	C301.1	Identify the pharmacological aspects of various drugs.
	C301.2	Review the experiments confidently.
N	C301.3	Reproduce the importance of pharmacology subject as a basis of therapeutics.
Pharmacology-II 301 T	C301.4	Duplicate the knowledge therapeutically.
	C301.5	Describe the pharmacokinetic and pharmacodynamic principles in pharmacology.
	C301.6	List the drugs in chemotherapyof various diseases.
Pharmaceutical Analysis 302 T	C302.1	Understand the importance of Regulator authorities like GLP, ISO, TQM and Validation Guidelines involved in Pharmaceutical Analysis and various methods to ensure the Quality assurance of Drug and formulation.
	C302.2	Discuss the Application of Chromatography technique like TLC, Paper Chromatography and Electrophoresis used in analysis of Pharmaceuticals.
	C302.3	Examine the application of electrometric method utilized in analysis of drugs and Pharmaceuticals.
	C302.4	Illustrate the Principle, Instrumentation and application of various spectroscopic technique involved in Analysis of Drug and Pharmaceuticals.
	C302.5	Instruct theoretical knowledge on various hyphenated instrumental techniques adopted for analysis of Pharmaceuticals.
	C302.6	Describe the fundamental principles and applications of Flame photometry, X-ra diffraction, atomic emission and atomic absorption spectroscopy.





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incipal / Correspondent		Date :
Pharmacotherapeutics-II	C303.1	To know the pathophysiology of selected disease states and the rationale for drug therapy.
303 T	C303.2	To understand the therapeutic approach formanagement of different diseases.
	C303.3	To know the importance of preparation of individualized therapeutic plans based on diagnosis & controversies in drug therapy.
	C303.4	To understand & identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy.
	C303.5	Explain the etiopathogenesis of selected infectious diseases, musculoskeletal and renal disorders.
	C303.6	Discuss the principles of cancer therapy and dermatological disorders.
	C304.1	Acquire the basic knowledge about pharmaceutical laws and role of ethics in pharmacy profession in India.
	C304.2	Memorize and explain the provisions of actspertaining to Drugs and Cosmetics Act and Narcotic Drugs & Psychotropic Substance Act.
Pharmaceutical Jurisprudence 304 T	C304.3	Describe the concepts of price fixation of pharmaceutical products.
	C304.4	Implement the rules and regulations of M&TP (Excise Duties) Act and Drugs and Magic remedies Act.
	C304.5	Summarize the Pharmaceutical Acts and Laws and their implications in the development andmarketing of pharmaceuticals.
Medicinal Chemistry 305 T	C305.1	Understand the chemistry of drugs with respect to their pharmacological activity.
	C305.2	Analyze how current drugs were developed by using pharmacophore modeling and docking technique.
	C305.3	Know the structural activity relationship of different class of drugs.
	C305.4	Acquire knowledge in the chemotherapy for cancer and microbial diseases and different anti-viral agents.
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rincipal / Correspondent		Date :
	C305.5	Relate the knowledge of the chemistry of drugs with respect to their pharmacological activity, mode of action & adverse effect.
	C305.6	Interpret the concept of rational drug design including combinatorial chemistry and computer aided drug design.
	C306.1	Explain the significance of formulation, preparation and evaluation of various pharmaceutical dosage forms.
	C306.2	Describe formulation additives for various dosage forms.
Pharmaceutical Formulations 306 T	C306.3	Explain suitable measures for stability of the dosage forms.
Formulations 500 1	C306.4	Describe the manufacturing methods of solid, semisolid, parenteral and ophthalmic products.
	C306.5	Evaluate different dosage forms with appropriate quality control test for a given drug.
	C306.6	Assess suitable packaging material for a dosage form of a given drug Pharmaceuticals.
	C307.1	Identify the drugs confidently in experiments.
	C307.2	Interpret the experiments of pharmacology.
Pharmacology-II 307 P	C307.3	Identify the various techniques in pharmacology experiments.
	C307.4	Interpret the results of biological samples in experimental pharmacology.
	C307.5	Demonstrate the pharmacological experiments.
	C308.1	Perform quantitative & qualitative analysis of drugs using various analytical instruments like UV-visible and IR spectrophotometer.
Pharmaceutical Analysis	C308.2	Interpret spectra of UV-visible, IR, NMR and Mass to identity the given compound.
308 P	C308.3	Compare spectral data with chemical structure.
	C308.4	Evaluate the quantity of a drug in a given mixture or solution.
	C308.5	Practice planned experiments and prepare laboratory report in a standard format.
Pharmacotherapeutics-II 309 P	C309.1	To understand therapeutic goals of the drugs used in different diseases.

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	C309.2	To understand dose and frequency of the medications.
	C309.3	To understand the time-course of clinical and laboratory indices of therapeutic response and adverse effects.
	C309.4	Identify adverse drug reactions, drug interactions and rationalize the prescription.
	C309.5	Prepare individualized therapeutic plans based on diagnosis.
4	C309.6	Perform patient counseling.
	C310.1	Make correct use of various equipment's and take safety measures while working in Medicinal Chemistry Laboratory.
	C310.2	Synthesize medicinally important compounds.
	C310.3	Apply and understand the reaction mechanisms involved in synthesis of medicinally important compound.
Medicinal Chemistry 310 P	C310.4	Conduct monograph analysis of the pharmaceutical compounds and determination of the amount of drug present.
	C310.5	Determine partition coefficient and dissociation constant of a given compound.
	C310.6	Gains knowledge on purification of the synthesized medicinal compound by using appropriate techniques.
	C311.1	Develop formulations of different dosage forms as per the batch formula,
Pharmaceutical Formulations 311 P	C311.2	Demonstrate different equipment's and instruments used in preparation of dosage forms
	C311.3	Select suitable packaging container for a dosage form.
	C311.4	Evaluate different dosage forms by performing quality control tests.
	C311.5	Prepare and evaluate cosmetics such as lipstick, cold cream and shampoo.
	C311.6	Design planned experiments and prepare laboratory report in a standard format.





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Principal / Correspondent		Date :
Pharmacotherapeutics-III	C401.1	Explain the etiopathogenesis of selected gastrointestinal, haematological, neurological and psychiatric diseases.
401 T	C401.2	Discuss the principles of evidence-based therapy and pain management.
	C401.3	Identify the patient-specific parameters relevant in initiating and monitoring drug therapy and adverse effects.
	C401.4	Discuss the therapeutic approach in the management of selected diseases and controversies in drug therapy.
	C401.5	Prepare individualized therapeutic plans based on diagnosis.
	C401.6	Recognize the role of pharmacist in essential and rational drug use.
	C402.1	Discuss the roles and responsibilities of hospital pharmacist, hospital drug policies and guidelines for hospital pharmacy.
	C402.2	Discuss various drug distribution methods in a hospital pharmacy.
Hospital Pharmacy	C402.3	Apply various methods of inventory control.
402 T	C402.4	Formulate parenteral preparations.
	C402.5	Review a newsletter for providing continuous education and awareness.
	C402.6	Explain about handling and packaging of radiopharmaceuticals.
	C403.1	Explain the roles and responsibilities of clinical pharmacist.
Clinical Pharmacy 403 T	C403.2	Analyze and interpret the laboratory test results for clinical diagnosis.
	C403.3	Conduct interview to elicit medication history and perform patient counseling.
	C403.4	Identify, monitor, assess, manage, prevent, document and report suspected adverse drug reactions.
	C403.5	Provide drug and poison information through critical analysis.





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cipal / Correspondent		Date :
	C403.6	Recognize the potential sources of medication errors and act for its prevention.
Biostatistics & Research Methodology 404 T	C404.1	Choose the appropriate research design and develop appropriate research hypothesis for a research project.
	C404.2	Explain the concept of central tendency of data & describe the different measures of central tendency.
	C404.3	Describe the appropriate statistical methods required for a particular research design.
	C404.4	Understand the basic epidemiological methods and study designs.
	C404.5	Explain the applications of computer in Hospital and Community Pharmacy.
	C405.1	Understand the concept of ADME of a drug in the human body and factors influencing them.
	C405.2	Explain the introductory aspects of pharmacokinetics.
Biopharmaceutics & Pharmacokinetics 405 T	C405.3	Determine the various pharmacokinetic parameters from either plasma concentration of urinary excretion data of the drug for a drug following one and multi compartment models.
	C405.4	Summarize the concept of multiple-dose administration and identify the various causes of the nonlinear pharmacokinetics.
	C405.5	Describe the concept of non-compartmental pharmacokinetics and state the principles underlying Bioavailability and Bioequivalence studies.
Clinical Toxicology 406 T	C406.1	Developing general working knowledge of the principles and management of clinical toxicology.
	C406.2	Generalized understanding of the health implications of toxic exposure involving therapeutic and non therapeutic agents.
	C406.3	Examine previous history, assessment, and therapy considerations associated with the management of a toxic exposure.

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rincipal / Correspondent		Date :
	C406.4	Distinguishing the characteristics and treatment guidelines for specific toxic substances.
	C406.5	Implementing several preventive approaches to reduce unintentional poisoning.
	C407.1	Identify drug interactions and rationalize the prescription.
	C407,2	Discuss the therapeutic approach to management of selected diseases.
Pharmacotherapeutics-III 407 P	C407.3	Prepare individualized therapeutic plans based on diagnosis.
	C407.4	Conduct patient counseling.
	C407.5	Conducts planned experiments and prepare laboratory report in a standard format.
	C408.1	Analyze prescriptions for drug interaction.
	C408.2	Develop and prepare parenteral formulations and powders.
Usasital Disamasan	C408.3	Solve inventory analysis.
Hospital Pharmacy 408 P	C408.4	Solve drug information queries through literature search.
	C408.5	Conduct planned experiments and prepares laboratory report in a standard format.
	C408.6	Produce various preparations used in hospital.
	C409.1	Assess prescriptions for drug interaction and answer drug information query.
Clinical Pharmacy	C409.2	Perform patient counseling on medication and conduct medication history interview.
409 P	C409.3	Analyze and interpret the data obtained through laboratory tests.
	C409.4	Conducts planned experiments and prepare laboratory report in a standard format.
Biopharmaceutics & Pharmacokinetics 410 P	C410.1	Compare the in-vitro drug release profile of different marketed products and perform the solubility enhancement techniques for improvement of drug release of poorly water soluble drugs.

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Principal / Correspondent		Date :
	C410.2	Estimate the bioavailability (absolute and relative) and bioequivalence from the given clinical data.
	C410.3	Calculate the drug content in blood sample using Area Under Curve approach and interpret various pharmacokinetic parameters from the given clinical data.
	C410.4	Conducts planned experiments and prepare laboratory report in a standard format.
	C411.1	Explain the etiopathogenesis of selected diseases.
	C411.2	Prepare individualized therapeutic plans based on diagnosis.
Pharmacotherapeutics I & II	C411.3	Recognize the role of pharmacist in essential and rational drug use.
411 T	C411.4	Explain the general prescribing guidelines and rational use of drugs.
	C411.5	Discuss the therapeutic approach in the management of selected diseases and controversies in drug therapy.
	C412.1	Identify drug interactions and rationalize the prescription.
Pharmacotherapeutics I & II	C412.2	Discuss the therapeutic approach to management of selected diseases.
412 P	C412.3	Prepare individualized therapeutic plans based on diagnosis.
	C412.4	Conduct patient counseling.
Clinical Research 501 T	C501.1	Discuss the Pharmacological and Toxicological considerations in process of development of new drugs.
	C501.2	Discuss the principles and phases in clinical trial of drug.
	C501.3	Explain the guidelines for ethics and safe monitoring in clinical trial of a drug.
3011	C501.4	Design the documents of clinical trial.
	C501.5	Distinguish the guidelines of national and international regulatory bodies for clinical trial.

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Principal / Correspondent		Date :
	C501.6	Recognize differing roles and obligations of the Investigator, Sponsor and Institutional Review Board.
Pharmacoepidemiology and Pharmacoeconomics	C502.1	Discuss the scope, need, origin and evaluation of Pharmacoepidemiology.
502 T	C502.2	Explain the importance of Measurement of outcomes in Pharmacoepidemiology.
	C502.3	Recommend suitable method for measuring the outcome of Pharmacoepidemiology for a disease.
	C502.4	Suggest an appropriate Pharmacoepidemiological method for a given drug and address the risks associated with Pharmacoepidemiological study.
	C502.5	Discuss the basic principles, role and relevance of Pharmacoeconomics in the development of a new drug.
	C502.6	Identify and justify an appropriate evaluation method for Pharmacoeconomics study of a disease.
	C503.1	Discuss the pharmacokinetic principles to individualize drug therapy in patient care situations.
Clinical Pharmacokinetics	C503.2	Determine dose, dosing intervals and dosage adjustments of a drug for a given patient.
&Pharmacotherapeutic Drug Monitoring 503 T	C503.3	Apply the principles of pharmacokinetics to analyze and predict drug interactions.
	C503.4	Prepare protocol for TDM of drugs for selected diseases.
	C503.5	Discuss the concept of genetic polymorphism in

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metabolism, transport and target of a drug.



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# PROGRAMME SPECIFIC OUTCOMES (PSO'S)

#### **B PHARMACY**

- Scientific Thinking: Enable student's knowledge in scientific perception to understand the concepts and to solve the problems
  positively while making pharmaceutical formulations.
- Analytical Skills: Assimilate and develop analytical skills using advanced equipment to design and evaluate pharmaceutical products, also to assess their quality.
- Resource Management: Utilize and manage resources from natural, semi synthetic and synthetic origin to develop real time products with utmost benefit and safety.
- 4. Public Health Care: Promote and empower the healthy living in the community by various means of awareness and health strategies.
- 5. Entrepreneurship: Acquire and develop entrepreneurship and administration skills to establish community pharmacy, learning and training centers for the long term well being of society.

#### M. PHARMACY PROGRAMME PHARMACEUTICS

- 1.Formulation strategies: To impart practical knowledge, expertise to develop, design disease-centric formulations, targeting approaches using current, advanced scientific principles for better patient care and compliance.
- Emerging science: To introduce knowledge about emerging cutting-edge technologies and their application in pharmaceutical field with better formulations for effective treatments.
- 3.Computational literacy: To demonstrate the use of artificial intelligence, computer programs or software applications useful in screening formulations, interpretation of experimental data and their validation.
- 4. Pharmaceutical regulations: To understand the objectives, roles, functions of various pharmaceutical regulatory bodies governing quality, safety and efficacy of pharmaceuticals from manufacturing to patient door.

#### M.PHARMACY PROGRAMME PHARMACEUTICAL ANALYSIS

01To deal with various hyphenated instrumental techniques for identification, characterization and quantification of drugs.

02To provide studies on drug bioavailability, pharmacodynamics, cell culture techniques and ensure the efficacy and safety use of herbal medicine according to AYUSH guidelines.

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03To understand calibration, validation methodologies and their applications in industry.

04To determine the assay of drugs by spectroscopical and chromatographical methods and preservatives in food and food products.

05To understand quality assurance aspects of pharmaceutical industries such as cGMP, documentation, certification, GLP and other regulatory guidelines.

06To create a talent pool by involving students in research projects under the guidance of faculty and for publishing their research work.

07To impart knowledge about extraction and separation of drugs from biological samples by different analytical techniques.

08To deal with detection of impurities in pharmaceutical formulations and development of protocol for stability testing of products.

#### PHARM.D PROGRAMME

01To understand various drug distribution methods, know the professional practice management skills in hospital pharmacies.

02To provide unbiased and authentic informations to all the stakeholders of health, appreciate practice-based research methods, and appreciate stores management and inventory control.

03To prepare personalized therapeutic strategies based on diagnosis, through identification of options, observing treatment, timecourse of clinical and laboratory indices of therapeutic response and adverse effects.

04To explicate patient care in performing medication history, interpretations of laboratory data, categorizing potential-medicine related impacts of Pharmacotherapy.

05To understand the clinical aspects of drug development, such as phases, ethical issues, and roles and responsibilities of clinical trial personnel and able to design clinical study documents, data management and safety monitoring in clinical trials. 06To render the services to the public by providing patient centric effective treatments to curb the therapeutic issues with the required medicines and explain the effects of the drugs by analyzing the scientific literature for improving their health and well-being.

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S.NO. ROLL NO.	NAME OF THE STUDENT		,		MID EXAM - I							MID EXAM	AM - II	-	-	+	-	-	MID	MID EXAM - III	-			EXTERNAL MARKS
		a	Ф	0	P	9	7	3	4	a p	0	9	o	7	3	4	٥	0	9	9	7	6	4	
1 21ER1T0001	B V SUSHMA	2	2	2	2	2	6	10		2 2	7	7	7	6	~	8 2	7	7	7	2	10		6	51
2 21ER1T0002	BIJJAM YOGA AMRUTHA	2	2	2	2	1	6		10	2 2	2	2	7	6	90	2	2	2	7	2	10		90	46
3 21ER1T0003	DASARI PRIYANKA	2	2	2	1	1	6		90	2 2	2	2	2	10	6	2	7	7	0	2	6	90		35
4 21ER1T0004	EDIGA BALAKRISHNA	2	2	2	2	2	6		6	2 2	2	2	7	7	6	2	7	2	2	7	6		6	43
5 21ER1T0005	KASULA SATWIKA	2	2	2	1	0	6		6	2 2	7	7	7		90	9 2	2	7	7	1	6		6	35
6 21ER1T0006	K SUSMITHA	2	2	1	2	0	7		10	2 2	2	2	7	10	90	2	2	7	2	2	6	6		36
7 21ER1T0007	KURUVA BANGARU VANI	2	2	2	2	1	7	10	- 4	2 2	7	2	7		6	9 2	2	7	7	2		6	6	150
8 21ER1T0008	K V S NAGA VIGNETHA	2	2	2	2	2		90	6	2 2	7	2	7	6	6	2	7	7	2	2	10	6		36
9 21ER1T0009	MANGALI JANAKI	2	2	2	2	-	10	10		2 2	2	2	7		6	9 2	2	7	2	2	6		7	41
10 21ER1T0010	MANGALI JYOSHNA	2	2	2	2	2		01	7	2 2	7	2	7	10	6	2	2	7	2	2	6	6		43
21ER1T0011	MASAPOGU KEERTHI	2	2	2	2	1	7	6		2 2	7	7	7	6	90	2	2	7	2	1	10	6		4
21ER1T0012	NEELAM AMRUTHA	2	2	2	2	1	10	10		2 2	2	2	7	10		00								55
21ER1T0013	PINJARI MOULALI	2	2	2	2	1	7	6		2 2	7	7	14	1	6	8 2	2	7	7	2	6		6	37
21ER1T0014	SHAIK HARUN RASHEED	1	1	1	1	1	9	P. C.	00	2 2	2	7	7	90	-	10 2	7	7	2	2	6		6	38
15 21ER1T0015	SURASURA AHALYA	2	2	2	2	2	6		80	2 2	7	2	7	6	-	8 2	7	7	2	2	00		80	31
21ER1T0016	THALARI NAVEEN	2	2		-	1	6		6	2 2	2	7	7	90	~	8 2	2	7	2	1	6		6	50
21ER1T0017	LAHARI	2	2	0	0	2	7		90	2 2	2	2	0	90	90	2	2	2	2	2	10	4		35
21ER1T0018	BIJJAM SNEHA REDDY	2	2	2	2	0	0		90	0 0	0	0	0		6	7 2	2	7	7	2	10		w	13
21ER1T0019	C UMESH CHANDRA	2	2	2	2	0	0		80	2 2	2	0	2			7 2	2	7	2	2	00	90		28
21ER1T0020	DUDEKUA REHANA	2	2	2	2	1	3		90	2 2	2	7		6	-	9 2	2	2	2	2	4	4		31
21ER1T0021	G SRAVANI	2	2	2	1	-	00		90	2 2	7	7	7	00	90	2	2	7	7	2	6	90		35
21ER1T0022	KAPU HIMAVARSHINI	2	2	2	1	1	9		90	2 2	2	2	2	90	~	8 2	2	2	7	2	90	80		40
21ER1T0023	MD MUSHEEDAHMED	2	2	2	2	1	7		20	2 2	7	2	7	6		7 2	2	7	2	7	6	6		28
21ER1T0024	MEHVISH INSHIA FAISAL									2 2	2	2	7	90		7 2	2	2	2	2	w	6		15
21ER1T0025	R NOUSHREEN TAJ	2	2	2	2	1	7	00		2 2	7	7	7		80	2	2	2	2	2	90	00		35
21ER1T0026	SANGU NAVYA	2	2	2	2	-	90	1		2 2	7	2	7	00	~	8 2	2	2	2	2	6	6		40
21ER1T0027	SHAIK AYESHA SIDDIQUA	2	2	2	1	1	2	90		2 2	7	2	7	8 1	10	2	2	7	7	1	6	6		36
21ER1T0028	S N MOHAMMED ADNAN	2	2	2	2	1	7.5	- 32	9	2 2	7	2	7	80		2	2	2	2	2	6	6		27
21ER1T0029	SYED AQHIB HUSSAINI	2	2	. 2	-	-	9		8	2 2	2	7	2		7 8	2	2	2	2	2	6	80		24
21ER1T0030	TALARI SAI SHARVANI	2	2	1	1	1	00		9	2 2	2	7			80	2	2	2	7	1		6	00	24
21ER1T0031	S AYESHA JABEEN	2	2	1	0	0		0	0	2 2	7	7	7	7	7	7	2	2	2	2		80	80	10
21ER1T0032	S ASHRAF BEGUM	2	2	2	2	1	7		6	2 2	7	7	7	00	6	2	7	7	7	7	00	00		32
21ER1T0033	K RAJKUMAR	7	2	1	1	1	7		7	2 2	7	0	7	00	00	2	7	7	7	0	6	00		26
	AVERAGE	2	2	1.8	1.6	1	6.9	8.3	7.5 1	1.9 1.9	61 6	1.8	1.9	8.3 8.	8.4 8.1	1 2	2	7	1.9	1.8	8.7	8.1	8.2	35.48
COU	COURSE OUTCOMES	CO101.1	CO101.2	CO101.2	CO101.2	CO101.2	CO1 01.1 0	O101CO101.2		CO1 CO1 01.3 01.3	3 01.4	CO1	C01 C	CO1 CC	CO1 CO1 01.3 01.4	1 CO1	1 CO1	1001	CO1 01.4	CO101.4	CO1	CO1 01.5	CO1	(CO101.1-CO101.5)
0	CO WISE SUM	8.9	22.2						2.	22.3	36.5													
COW	CO WISE PERCENTAGE	74.16	79.28																					

ART I: COURSE OUTCOME ATTAINME	MENT					
Course outcome	CO101.1	CO101.2	CO101.3	CO101.4	CO101.5	
Attainment Values	74.16	79.28	85.76	86.9	84.16	
Target Values	70	7.5	80	80	80	
Gap	NOGAP	NOGAP	NOGAP	NOGAP	NOGAP	

AT AT	3	6	6	7	7
ATTAIN MENT LEVELS	1.53	1.49	1.59	1.57	1.57
FINAL ATTAINMENT %	51.02	49.55	52.9	52.4	52.33
INDIRECT	8.99	53.25	62.25	58.35	61.35
DIRECT INDIRECT ATTAINMENT ATTAINMENT	47.08	48.62	50.56	50.91	50.08
INTERNAL EXTERNAL MARKS % MARKS %	35.48	35.48	35.48	35.48	35,48
INTERNAL MARKS %	74.16	79.28	85.76	6.98	84.16
CO ATTAINMENT	CO101.1	CO101.2	CO101.3	CO101.4	CO101.5

COURTING PO1 PO2 PO3 PO4  CO101.1 3 2  CO101.3 3 2  CO101.4 3 2  CO101.5 3 2	CO-PO Matrix for the Subject HAP													
m m		P01	P02	PO3	P04	POS	PO6 PO7	PO8		P09 P0	10 P011	PO9 PO10 P011 PO12 PSO1 PSO2 PSO3	01 PS02	PSO3
	171	3												
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	11.3	3												
	1.4				2									
	1.5		2	1										

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FOR HAP SUBJECT

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BRANCH: PHARMACY	Į.									YEAR	R	SIIB	SUBJECT HAPLAB	LAB			
					MIDE	MID EXAM - I						N	MID EXAM - II	-11			
S.NO. ROLL NO.	NAME OF THE STUDENT	Identification	Synopsis	Major Experiment	Minor Experiment	Viva	Identification	Synopsis	Major Experiment	Minor Experiment	Viva	Identification	Synopsis	Major Experiment	Minor	Viva	EXTERNAL MARKS
21ER1T0001	B V SUSHMA	4	3	7	3	1	4	4	7	3	1	4	4	7	3	-	65
21ER1T0002	BIJJAM YOGA AMRUTHA	4	3	7	3	1	4	4	7	3	1	4	4	7	3	1	63
21ER1T0003	DASARI PRIYANKA	4	3	7	8	1	4	3	7	3	1	4	4	7	3	1	61
21ER1T0004	EDIGA BALAKRISHNA	4	3	7	3	1	4	4	7	3	1	4	4	7	3	-	64
21ER1T0005	KASULA SATWIKA	4	3	7	3	1	4	3	7	3	1	4	4	7	3	-	99
21ER1T0006	KSUSMITHA	4	4	7	3	1	4	2	7	3	1	4	4	7	3	1	29
21ER1T0007	KURUVA BANGARU VANI	4	4	7	3	1	4	3	7	3	1	4	4	7	3	-	29
21ER1T0008	K V S NAGA VIGNETHA	4	3	7	3	1	4	4	7	3	1	4	4	7	3	1	99
21ER1T0009	MANGALI JANAKI	4	4	7	3	1	4	3	7	3	2	4	4	7	3	-	64
21ER1T0010	MANGALI JYOSHNA	4	4	7	3	-	4	3	7	3	1	4	4	7	3	1	19
21ER1T0011	MASAPOGU KEERTHI	4	3	7	3	1	4	3	7	3	1	4	4	7	3	1	61
21ER1T0012	NEELAM AMRUTHA	4	4	7	3	1	4	4	7	3	1						64
21ER1T0013	PINJARI MOULALI	4	3	7	3	1	4	3	7	3	1	4	4	7	3	1	63
21ER1T0014	SHAIK HARUN RASHEED	4	3	7	3	1	4	4	7	3	-	4	4	7	3	-	61
21ER1T0015	SURASURA AHALYA	4	4	7	3	1	4	3	7	3	1	4	4	7	3	-	61
21ER1T0016	THALARI NAVEEN	4	4	7	3	1	4	4	7	3	1	4	4	7	3	1	29
21ER1T0017	LAHARI	4	4	7	3	1	4	3	7	3	1	4	4	7	3	1	19
21ER1T0018	BIJJAM SNEHA REDDY	4	4	7	3	1	4	3	7	3	1	4	4	7	3	1	62
21ER1T0019	C UMESH CHANDRA	4	3	7	3	1	4	3	7	3	1	4	4	7	3	1	61
21ER1T0020	DUDEKUA REHANA	4	4	7	3	1	4	4	7	3		4	4	7	3	1	62
21ER1T0021	G SRAVANI	4	3	7	3	1	4	3	7	3	2	4	4	7	3	1	99
21ER1T0022	KAPU HIMAVARSHINI	4	4	7	3	-	4	3	7	3	1	4	4	7	3	1	29
21ER1T0023	MD MUSHEEDAHMED	4	4	7	3	1	4	4	7	3	1	4	4	7	3	1	62
21ER1T0024	MEHVISH INSHIA FAISAL						4	3	7	3	1	4	4	7	3	1	61
21ER1T0025	R NOUSHREEN TAJ	4	4	7	3	-	4	3	7	3	1	4	4	7	3	1	62
21ER1T0026	SANGU NAVYA	4	4	1	3	1	4	3	7	3	1	4	4	7	3	1	62
21ER1T0027	SHAIK AYESHA SIDDIQUA	4	4	7	3	1	4	3	7	3	1	4	4	7	3	1	62
21ER1T0028	S N MOHAMMED ADNAN	4	3	7	3	-	4	3	7	3	1	4	4	7	3	1	61
21ER1T0029	SYED AQHIB HUSSAINI	4	4	7	3	1	4	3	7	3	1	4	4	7	3	1	61
21ER1T0030	TALARI SAI SHARVANI	4	4	7	3	-	4	4	7	3	-	4	4	7	3	1	62
21ER1T0031	SALESHA JABEEN	,	+	,	2	-	4	3	7	3	1	4	4	7	3	1	62
21ER1T0032	S ASHRAF BEGUM	4	4	7	3	-	4	3	7	3	1	4	4	7	3	1	63
21ER1T0033	K RAJKUMAR	4	6	_	3	1	4	3	7	3	1	4	4	7	3	1	61
A	AVERAGE	4	3.6	7	3	1	4	3.3	7	3	1.1	4	4	7	3	1 ####	63.09
COURS	COURSE OUTCOMES	CO107.1	CO107.3	CO107.1	CO107.2	CO107.3	CO107.2	CO107.2	CO107.2	CO107.4	CO107.3	CO107.4 (	CO107.4	CO107.4	17.4	07.3	(CO101.1-CO101.5)
CO	CO WISE SUM	=======================================	6.7		17.3					21							
COUNTER	CO WICE PERCENTACE	100	EE 03														

PART 1: COURSE OUTCOME ATTAINMENT	T					
Course outcome	CO101.1	CO101.2	CO101.2 CO101.3 CO101.4	CO101.4	CO101.5	
Attainment Values	100	55.83	96.1	84		
Target Values	70	50	06	80		
Gap		NOGAP	NOGAP	NOGAP NOGAP NOGAP NOGAP	NOGAP	

FEED BACK):	ATTAINMENT	2.18	1.78	2.13	2.01	1.43	
XAMS + COURSE							
EXTERNAL E	FINAL ATTAINM ENT %	72.69	59.38	70.84	67.16	47.6	
EXAMS +1	INDIREC T ATTAINM ENT	8.99	53.25	62.25	58.35	61.35	
NTERNAL	DIRECT ATTAINM ENT	74.16	16'09	72.99	69.36	44.16	
ASED ON 1	EXTER NAL MARKS	63.09	63.09	63.09	63.09	63.09	
ULATION (B.	INTERNAL NAL MARKS % MARKS %	100	55.83	96.1	84	0	
PART 2: CO-PO ATTAINMENT CALCULATION (BASED ON INTERNAL EXAMS + EXTERNAL EXAMS + COURSE FEED BACK); Course Attainment Calculation	CO ATTAINMENT	CO107.1	CO107.2	CO107.3	CO107.4	CO101.5	

		ATTAINMEN T LEVELS	2.18	1.78	2.13	2.01	1.43	
	PSO3							
	PSO2							
	PSO1							
	P012							
	P011							
	PO10							
	P09							
	PO8							
	PO7							
	P06							
	POS							
	P04			3	3			
	PO3							
	P02							
	POI		3			3		
CO-PO Matrix for the Subject HAP LAB	Course		CO107.1	CO107.2	CO107.3	CO107.4	CO101.5	

POI	P02	PO3	PO4	PO5	90d	PO7 9	PO8	60d	PO10	PO11
2.09775			1.9533							



A U Comment PRINCIPAL
Dr. K.V.S.R. 18x11444 of Pharmacy
Opps: Dupadu R.S. N.H.-44.
KURNSOL-518218 (A.P.)