



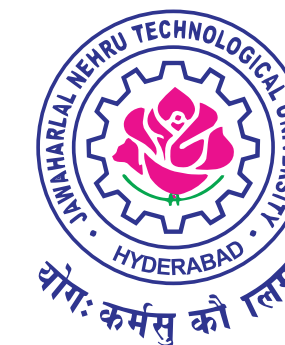
Anurag

PHARMACY COLLEGE

Approved by PCI & Affiliated to JNTUH

Ananthagiri (V&M), Suryapet (Dt). Pin: 508 206

B. PHARMACY I YEAR I SEM



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|--------------|--------------------------------------|---|
| PS101 | Human Anatomy and Physiology-I | <ul style="list-style-type: none">• To explain the gross morphology, Structure and functions of various organs of the human body.• Describe the various homeostatic mechanisms and their imbalances• Identify the various tissues and organs of different systems of human body. |
| PS102 | Pharmaceutical Analysis –I | <ul style="list-style-type: none">• To understand the principles of volumetric and electro chemical analysis.• To carry out various volumetric and electrochemical titrations• To develop analytical skill. |
| PS103 | Pharmaceutics I | <ul style="list-style-type: none">• To know the history of profession of pharmacy.• Understand the basics of different dosage forms,• To understand the professional way of handling the prescription. |
| PS104 | Pharmaceutical inorganic Chemistry-1 | <ul style="list-style-type: none">• To know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals.• To understand the medicinal and pharmaceutical importance of inorganic compounds.• To know the preparation and assay methods of inorganic compounds. |
| HS105 | Communication skills | <ul style="list-style-type: none">• This course will prepare the young pharmacy student to interact effectively with doctors, nurses, dentists, physiotherapists and others health workers.• To know how to face interviews after completion of the course.• To improve communication skills of students. |
| BS106 /BS107 | Remedial Biology/ Mathematics– | <ul style="list-style-type: none">• To solve the different types of problems by applying theory & appreciate the important application of mathematics in Pharmacy.• To learn and understand the components of living world.• To learn structure and functional system of plant and animal kingdom. |



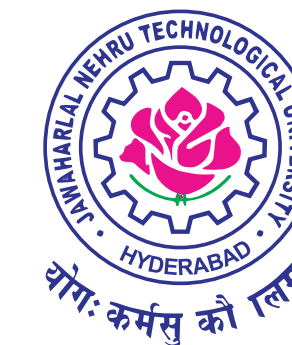
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B. PHARMACY I YEAR II SEM



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|-------------|---------------------------------|---|
| PS201 | Human Anatomy and Physiology II | <ul style="list-style-type: none">• This subject is designed to impart fundamental knowledge on the structure of human body.• To know the functions of the various systems of the human body.• It also helps in understanding both homeostatic mechanisms |
| PS202 | Pharmaceutical Analysis –I | <ul style="list-style-type: none">• To write the structure, name and the type of isomerism of the organic compound.• To study preparation and reactions of hydrocarbons.• To write the reaction, name the reaction and orientation of reactions. |
| PS303 | Biochemistry | <ul style="list-style-type: none">• The subject is providing biochemical facts and the principles to understand metabolism of nutrient molecules in physiological and pathological conditions.• To study the cycles of metabolism• To learn biochemical reactions |
| PS204 | Pathophysiology | <ul style="list-style-type: none">• This course is designed to impart a thorough knowledge of the relevant aspects of• Pathology of various conditions with reference to its pharmacologic al applications,• To study the effects of diseases |
| CS205 | Communication skills | <ul style="list-style-type: none">• To know the various types of application of computers in pharmacy• To know the various applications of databases in pharmacy. |



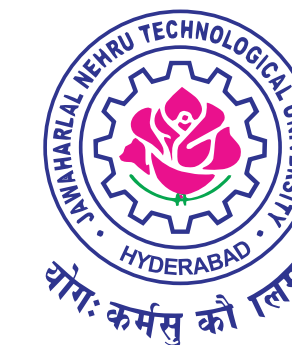
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|-------------|--|---|
| PS301 | Pharmaceutical Organic Chemistry II | <ul style="list-style-type: none">• Student shall be able to write the structure, name and the type of isomerism of the organic compound.• Write the reaction, name the reaction and orientation of reactions• Account for reactivity/stability of compounds. |
| PS302 | Physical Pharmaceutics I | <ul style="list-style-type: none">• Theory and practical components of the subject help the student to get a better insight in to various areas of formulation research and development.• Stability studies of pharmaceuticals.• Some physicochemical properties of the drug. |
| PS303 | Pharmaceutical Microbiology | <ul style="list-style-type: none">• To understand methods of identification, cultivation and preservation of various microorganisms• The importance of sterilization in microbiology.• To know the sterilization techniques. |
| PS304 | Pharmaceutical Engineering | <ul style="list-style-type: none">• To know various unit operations used in Pharmaceutical industries.• To understand the material handling techniques.• To perform various processes involved in pharmaceutical manufacturing process. |



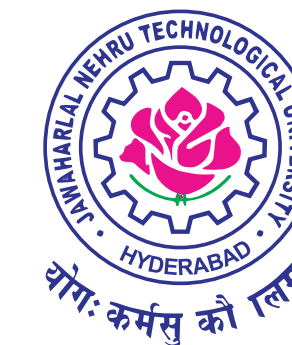
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COURSE OUTCOME

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|-------------|---|--|
| PS401 | Pharmaceutical Organic Chemistry III | <ul style="list-style-type: none">• The student shall be able to understand the methods of preparation and properties of organic compounds• Explain the stereo chemical aspects of organic compounds and stereo chemical reaction.• Know the medicinal uses and other applications of organic compounds. |
| PC402 | Pharmaceutical Analysis –I | <ul style="list-style-type: none">• To understand the chemistry of drugs with respect to their pharmacological activity.• Understand the drug metabolic pathways, adverse effects.• Therapeutic value of drugs.• MOA of the drugs.• SAR of the drugs. |
| PS403 | Physical Pharmaceutics II | <ul style="list-style-type: none">• Theory and practical components of the subject help the student to get a better insight in to various areas of formulation research and development.• Stability studies of pharmaceuticals.• Physicochemical properties of the drug. |
| PC404 | Pharmacology I | <ul style="list-style-type: none">• The subject covers the information about the drugs like mechanism of action.• Pharmacodynamics of the drugs• Pharmacokinetics of the drug along with the adverse effects.• Clinical uses, and routes of administration of different classes of drugs. |
| PC405 | Pharmacognosy and Phytochemistry I | <ul style="list-style-type: none">• To know the techniques in the cultivation and production of crude drugs.• To know the crude drugs, their uses and chemical nature.• To know the evaluation techniques for the herbal drug. |



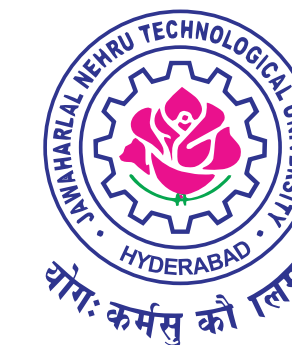
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B. PHARMACY
III YEAR I SEM



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|-------------|--------------------------------------|--|
| PS501 | Medicinal Chemistry- II | <ul style="list-style-type: none">• This subject is designed to impart fundamental knowledge on the structure,• Chemistry and therapeutic value of drugs.• The subject emphasizes on structure activity relationships of drugs.• Importance of physicochemical properties and metabolism of drugs. |
| PS502 | Industrial Pharmacy I | <ul style="list-style-type: none">• To know the various pharmaceutical dosage forms and their manufacturing techniques.• Know various considerations in development of pharmaceutical dosage forms.• Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality. |
| PS503 | Pharmacology-II | <ul style="list-style-type: none">• This subject is intended to impart the fundamental knowledge on various aspects of drugs acting on different systems of body.• In addition, emphasis on the basic concepts of bioassay.• Know the bioassay procedures. |
| PS504 | Pharmacognosy and Phytochemistry III | <ul style="list-style-type: none">• To impart the students, the Knowledge of how the secondary metabolites are produced in the crude drugs.• How to isolate and identify and produce them industrially.• To know the uses of herbal drugs. |
| PS507 | Cell and Molecular Biology | <ul style="list-style-type: none">• The course content will equip the students with adequate knowledge of the molecular process occurring within the cell and possibly pharmacological interventions into those Processes |
| PS508 | Cosmetic Science | <ul style="list-style-type: none">• To Know the cosmetic principles to address the needs of cosmetic industry.• Understand formulation science and analytical techniques required to scientifically design and develop cosmetic products.• Explain the scientific and technical aspects, high standards of practice and professional ethics within the cosmetic and toiletries industry. |
| MC500 | Environmental sciences | <ul style="list-style-type: none">• To create the awareness about environmental problems among learners.• Impart basic knowledge about the environment and its allied problems.• Develop an attitude of concern for the environment |



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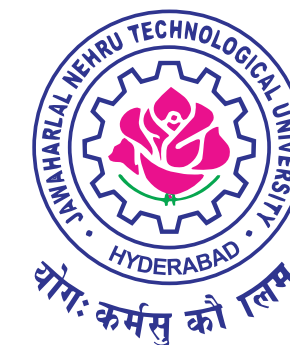
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COURSE OUTCOME

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|-------------|---|---|
| PS601 | Medicinal Chemistry III | <ul style="list-style-type: none">• To understand the importance of drug design and different techniques of drug design.• Understand the chemistry of drugs with respect to their biological activity.• Know the metabolism, adverse effects and therapeutic value of drugs. |
| PS602 | Pharmacology III | <ul style="list-style-type: none">• To understand the mechanism of drug action and its relevance in the treatment of different infectious diseases comprehend the principles of toxicology.• Treatment of various poisonings and appreciate correlation of pharmacology with related medical sciences. |
| PS603 | Herbal Drug Technology | <ul style="list-style-type: none">• This subject gives the student the knowledge of basic understanding of herbal drug industry.• Know the quality of raw material• Guidelines for quality of herbal drugs, herbal cosmetics, natural sweeteners, nutraceuticals etc. |
| PS604 | Biopharmaceutics and Pharmacokinetics I | <ul style="list-style-type: none">• This subject is designed to impart knowledge and skills necessary for dose calculations.• Dose adjustments and to apply Biopharmaceutics.• Theories in practical problem solving. |
| PS605 | Quality Assurance | <ul style="list-style-type: none">• This course deals with the various aspects of quality control and quality assurance aspects of pharmaceutical industries.• It covers the important aspect like• cGMP, QC tests, documentation, quality certifications and regulatory affairs. |
| PS606 | Pharmaceutical Biotechnology | <ul style="list-style-type: none">• To understanding the importance of immobilized enzymes in Pharmaceutical Industries.• Genetic engineering applications in relation to• Production of pharmaceuticals. |



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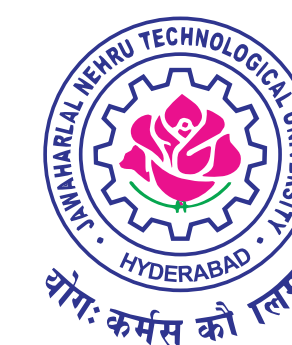
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IV YEAR I SEM



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| PS701 | Instrumental Methods of Analysis | <ul style="list-style-type: none">To understand the interaction of matter with electromagnetic radiationsTo learn applications in drug analysis by instruments.To know structural data. |
| PS702 | Industrial Pharmacy - II | <ul style="list-style-type: none">This course is designed to impart fundamental knowledge on pharmaceutical product commercialization from laboratory to market |
| PS703 | Pharmacy Practice | <ul style="list-style-type: none">The students are required to learn various skills like drug distribution, drug information.Therapeutic drug monitoring for improved patient care. |
| PS704 | Novel Drug Delivery System | <ul style="list-style-type: none">To understand various approaches for development of novel drug delivery systems.To understand the criteria for development of novel drug delivery systems their formulation and evaluation. |
| PS705 | Pharma Marketing management | <ul style="list-style-type: none">The course aim is to provide an understanding of marketing concepts and techniques.Application of the same in the pharmaceutical Industry.To know the pharma management skills. |
| PS706 | Pharmaceutical Regulatory Science | <ul style="list-style-type: none">Fundamental knowledge on the regulatory requirements for approval of new drugs, drug products in regulated countries like US, EU, Japan, Australia and Canada.It prepares the students to learn in detail on the regulatory requirements, documentation requirements.Registration procedures for marketing the drug products in regulated countries. |
| PS707 | Pharmacovigilance | <ul style="list-style-type: none">Development of pharmacovigilance as a scienceBasic terminologies used in pharmacovigilance, global scenario of pharmacovigilance.Train students on establishing pharmacovigilance program in an organization, various methods that can be used to generate safety data and signal detection. |
| PS708 | Quality Control and Standardizations of Herbals | <ul style="list-style-type: none">In this subject the student learns about the various methods and guidelines for evaluation and standardization of herbs and herbal drugs.The subject also provides an opportunity for the student to learn cGMP, GAP and GLP in traditional system of medicines. |



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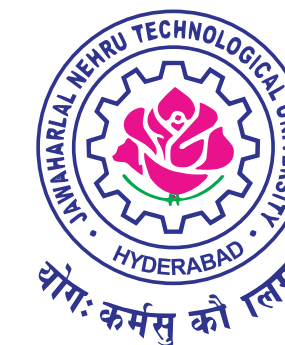
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IV YEAR II SEM



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|-------------|--|---|
| PS801 | Biostatistics and Research Methodology | <ul style="list-style-type: none">To understand how to select a research topic in his/her areas of interest.The fundamentals of collecting, analyzing and interpreting the relevant data.Different computational methods and software's facilitating research. |
| PS802 | Social and Preventive Pharmacy | <ul style="list-style-type: none">The purpose of this course is to introduce toStudents a number of health issues and their challenges.This course also introduced a number of national health programs.The roles of the pharmacist in these contexts are also discussed. |
| PS803 | Pharmaceutical Jurisprudence | <ul style="list-style-type: none">To impart basic knowledge on several important legislations related to the profession of pharmacy in India.To know the acts in pharmacy.To know the schedules of the drugs. |
| PS804 | Computer Aided Drug Design | <ul style="list-style-type: none">This subject is designed to provide detailed knowledge of rational drug design process.Various techniques used in rational drug design process. |
| PS806 | Experimental Pharmacology | <ul style="list-style-type: none">This subject is designed to impart the basic knowledge of preclinical studies in experimental animals including design, conduct and interpretations of results |
| PS807 | Advanced Instrumentation Techniques | <ul style="list-style-type: none">This subject deals with the application of instrumental methods in qualitative and quantitative analysis of drugs.This subject is designed to impart advanced knowledge on the principles and instrumentation of spectroscopic and chromatographic hyphenated techniques.This also emphasizes on theoretical and practical knowledge on modern analytical instruments that are used for drug testing. |
| PS808 | Project work | <ul style="list-style-type: none">Research work in various subjects to know the novelty. |



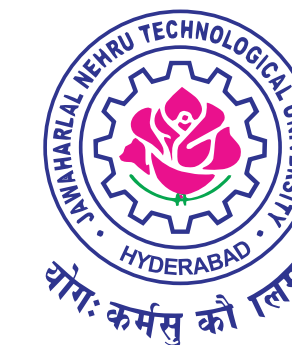
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PHARM. D I YEAR



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|-------------|------------------------------------|---|
| 1.1 | Human Anatomy and Physiology | <ul style="list-style-type: none">• This course is designed to impart a fundamental knowledge on the structure and functions of the human body.• It also helps in understanding both homeostasis mechanisms and homeostatic imbalances of various body systems. |
| 1.2 | Pharmaceutics | <ul style="list-style-type: none">• This course is designed to impart a fundamental knowledge on the art and science of formulating different dosage forms.• It prepares the students for the most basic of the applied field of pharmacy.• Students able learn preparation of different dosage forms. |
| 1.3 | Medicinal Biochemistry | <ul style="list-style-type: none">• To understands the catalytic activity of enzymes and importance of isoenzymes in diagnosis of diseases; knows the metabolic process of biomolecules in health and illness (metabolic disorders).• Understand the genetic organization of mammalian genome; protein synthesis; replication; mutation and repair mechanism. |
| 1.4 | Pharmaceutical Organic Chemistry | <ul style="list-style-type: none">• This course is designed to impart a very good knowledge about• a) IUPAC/Common system of nomenclature of simple organic compounds belonging to different classes of organic compounds;• Some important physical properties of organic compounds.• Some important chemical properties of organic compounds. |
| 1.5 | Pharmaceutical Inorganic Chemistry | <ul style="list-style-type: none">• To understand the principles and procedures of analysis of drugs and also regarding the application of inorganic pharmaceuticals.• Know the analysis of the inorganic pharmaceuticals their applications.• Appreciate the importance of inorganic pharmaceuticals in preventing and curing the disease. |
| 1.6 | Remedial Mathematics/ Biology | <ul style="list-style-type: none">• Know Trigonometry, Analytical geometry, Matrices, Determinant, Integration, Differential equation, Laplace transform and their applications.• Solve the problems of different types by applying theory.• Appreciate the important applications of mathematics in pharmacy.• This subject has been introducing to the pharmacy course in order to make the student aware of various naturally occurring drugs and its history, sources, classification, distribution and the characters of the plants and animals.• This subject gives basic foundation to Pharmacognosy |



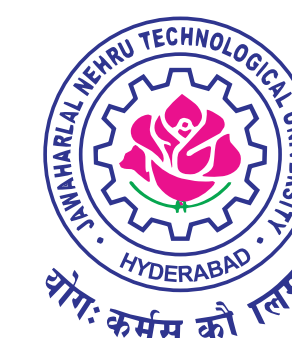
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PHARM. D II YEAR



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|-------------|--------------------------------------|---|
| 2.1 | Pathophysiology | <ul style="list-style-type: none">• To describe the etiology and pathogenesis of the selected disease states.• Name the signs and symptoms of the diseases.• Mention the complications of the diseases |
| 2.2 | Pharmaceutical Microbiology | <ul style="list-style-type: none">• To identification, growth factors and sterilization of microorganisms• know the mode of transmission of disease causing microorganism, symptoms of disease, and treatment aspect.• Do estimation of RNA and DNA and there by identifying the source; |
| 2.3 | Pharmacognosy & Phytopharmaceuticals | <ul style="list-style-type: none">• Understand the basic principles of cultivation, collection and storage of crude drugs;• Know the source, active constituents and uses of crude drugs;• Appreciate the applications of primary and secondary metabolites of the plant. |
| 2.4 | Pharmacology-I | <ul style="list-style-type: none">• Understand the pharmacological aspects of drugs falling under the above mentioned chapters;• Handle and carry out the animal experiments;• Appreciate the importance of pharmacology subject as a basis of therapeutics;• Correlate and apply the knowledge therapeutically. |
| 2.5 | Community Pharmacy | <ul style="list-style-type: none">• Knows pharmaceutical care services;• Know the business and professional practice management skills in community pharmacies;• Do patient counselling & provide health screening services to public in community pharmacy;• Respond to minor ailments and provide appropriate medication |
| 2.6 | Pharmacotherapeutics-I | <ul style="list-style-type: none">• The pathophysiology of selected disease states and the rationale for drug therapy;• The therapeutic approach to management of these diseases;• The controversies in drug therapy;• The importance e of preparation of individualized therapeutic plans based on diagnosis. |



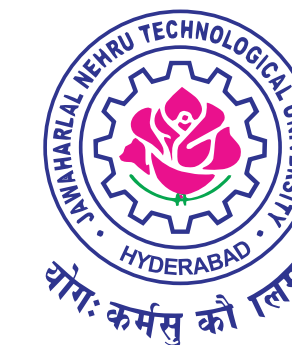
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PHARM. D III YEAR



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|-------------|------------------------------|---|
| 3.1 | Pharmacology-II | <ul style="list-style-type: none">• Understand the pharmacological aspects of drugs falling under the above mentioned chapters,• Carries out the animal experiments confidently.• Appreciates the importance of pharmacology subject as a basis of therapeutics.• Correlate and apply the knowledge therapeutically |
| 3.2 | Pharmaceutical Analysis | <ul style="list-style-type: none">• To understand chromatography, spectroscopy.• To analysis of crude drugs and dosage forms by using instruments.• Analysis of spectral data. |
| 3.3 | Pharmacotherapeutics-II | <ul style="list-style-type: none">• Know the pathophysiology of selected disease states and the rationale for drug therapy.• Know the therapeutic approach to management of these diseases.• Know the controversies in drug therapy.• Know the importance of preparation of individualized therapeutic plans based on diagnosis. |
| 3.4 | Pharmaceutical Jurisprudence | <ul style="list-style-type: none">• Practice the Professional ethics.• Understand the various concepts of the pharmaceutical legislation in India.• Know the various parameters in the Drug and Cosmetic Act and rules |
| 3.5 | Medicinal Chemistry | <ul style="list-style-type: none">• Modern concept of rational drug design• Brief introduction to Quantitative Structure Activity Relationship (QSAR).• Study of Prodrug, combin atorial chemistry and computer aided drug design. |
| 3.6 | Pharmaceutical Formulations | <ul style="list-style-type: none">• Understand the principle involved in formulation of various pharmaceutical dosage forms.• Prepare various pharmaceutical formulation;• Perform evaluation of pharmaceutical dosage forms |



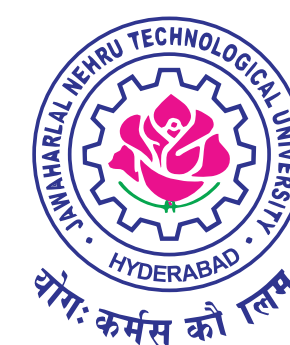
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PHARM. D
IV YEAR



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|-------------|--------------------------------------|--|
| 4.1 | Pharmacotherapeutics -III | <ul style="list-style-type: none">• The pathophysiology of selected disease states and the rationale for drug therapy;• The therapeutic approach to management of these diseases;• The controversies in drug therapy |
| 4.2 | Hospital Pharmacy | <ul style="list-style-type: none">• Know various drug distribution methods;• Know the professional practice management skills in hospital pharmacies;• Provide unbiased drug information to the doctors |
| 4.3 | Clinical Pharmacy | <ul style="list-style-type: none">• Monitor drug therapy of patient through medication chart review and clinical review;• Obtain medication history interview and counsel the patients;• Identify and resolve drug related problems;• Detect, assess and monitor adverse drug reaction |
| 4.4 | Biostatistics & Research Methodology | <ul style="list-style-type: none">• Types of clinical study designs:• Case studies, observational studies, interventional studies,• Designing the methodology. Sample size determination and Power of a study, determination of sample size for simple comparative experiments.• Determination of sample size to obtain a confidence interval of specified width, power of a study. |
| 4.5 | Biopharmaceutics & Pharmacokinetics | <ul style="list-style-type: none">• This subject is designed to impart knowledge and skills necessary for dose calculations.• Dose Adjustments and to apply Biopharmaceutics theories in practical problem solving. |
| 4.6 | Clinical Toxicology | <ul style="list-style-type: none">• General principles involved in the management of poisoning.• Antidotes and the clinical applications.• Supportive care in clinical Toxicology.• Gut Decontamination. |



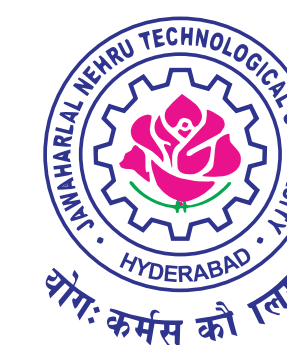
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PHARM. D V YEAR



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|-------------|---|---|
| 5.1 | Clinical research | <ul style="list-style-type: none">• To study clinical development & processes of drugs. |
| 5.2 | Pharmacoepidemiology and pharmacoconomics | <ul style="list-style-type: none">• Origin and evaluation of pharmacoepidemiology need for pharmacoepidemiology, aims and applications. |
| 5.3 | Clinical pharmacokinetics and therapeutic drug monitoring | <ul style="list-style-type: none">• Nomograms and Tabulations in designing dosage regimen.• Conversion from intravenous to oral dosing.• Determination of dose and dosing intervals, Drug dosing in the elderly and pediatrics and obese patients |



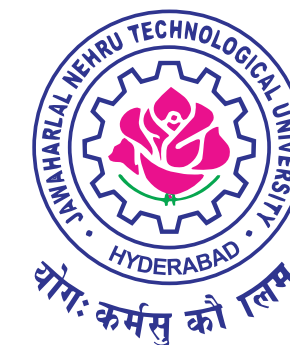
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M. PHARMACY
PHARMACEUTICS
II YEAR I SEM



COURSE OUTCOME

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|-------------------------|--|---|
| Professional Elective-V | Biostatistics | <ul style="list-style-type: none">The student will be known the Biostatistics arrangement, presentation and formation of tables and charts. They also know the correlation and regression & application of different methods, analysis of data. |
| Professional Elective-V | Scale Up and Technology Transfer | <ul style="list-style-type: none">On completion of this course it is expected that students will be able to manage the scale up process in pharmaceutical industry.Assist in technology transfer.To establish safety guidelines, which prevent industrial hazards |
| Professional Elective-V | Production Area Design & Packaging Development | <ul style="list-style-type: none">At the end of the semester student will get an idea about Industrial area design and packaging of different formulations and its stability conditions. |
| Open Elective | English for Research Paper Writing | <ul style="list-style-type: none">Students will be able to understand that how to improve your writing skills and level of readabilityLearn about what to write in each sectionUnderstand the skills needed when writing a TitleEnsure the good quality of paper at very first-time submission. |
| Open Elective | Disaster Management | <ul style="list-style-type: none">Students will be able to learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.Critically understand the strengths and weaknesses of disaster management approaches, planning and programming in different countries, particularly their home country or the countries they work in. |



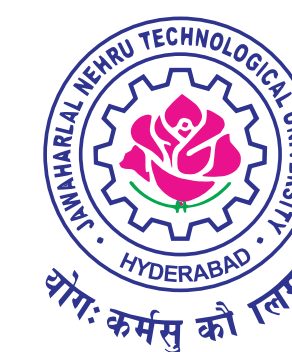
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M. PHARMACY PHARMACEUTICS I YEAR I SEM



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| Professional Core-I | Modern pharmaceuticals -I | <ul style="list-style-type: none"> Students shall explain the preformulation parameters, apply ICH guidelines and evaluate drug, drug excipients compatibility. Students also explain about formulation and development, use of excipients in tablets, powders, capsules, micro-encapsules and coating techniques. They also learn and apply the statistical design in different formulations. |
| Professional Core-II | Applied biopharmaceutics and pharmacokinetics | <ul style="list-style-type: none"> Students will be able to tell factors affecting the bioavailability and stability of dosage form. they also know the bioequivalence studies and protocols for bioequivalent studies. They also know the parameters for the disposition, absorption and Michaelis-Menton constants for nonlinear kinetics |
| Professional Elective-I | Advanced physical pharmaceuticals-I | <ul style="list-style-type: none"> The students will know particle size analysis method, solid dispersion, physics of tablets, polymer classification and its applications. Student will also know the stability calculations, shelf life calculations and accelerated stability studies. They will also know the rheology, absorption related to liquids and semi-solid dosage forms. They will also know the factors affecting the dissolution and solubility in related to invitro/invivo correlations |
| Professional Elective-I | Drug regulatory affairs | <ul style="list-style-type: none"> Students will come to know the different competent regulatory authorities globally. Students be aware of technical aspects pertaining to the marketing authorization application (MAA). The regulatory guidelines and directions framed by the regulatory authorities will be helpful to place the drug products in market for marketing approvals. |
| Professional Elective-I | Total quality management | <ul style="list-style-type: none"> Total quality management helps the students to learn the established regulatory guidelines in GMP, GCP, GLP, USFDA, WHO, ISO etc to become a perfect budding pharmacist. It is very useful to students to acquire vast knowledge regarding the quality control aspects of different regulatory bodies as per their requirements throughout the world |



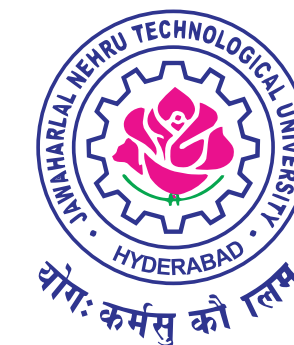
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PHARMACY COLLEGE

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Ananthagiri (V&M), Suryapet (Dt). Pin: 508 206

M. PHARMACY PHARMACEUTICS I YEAR I SEM



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|--------------------------|-------------------------------------|--|
| Professional Elective-II | Cosmetics and cosmeceuticals | <ul style="list-style-type: none"> Upon completion of the subject student shall able to know Regulatory biological aspects of cosmetics, excipients used for various formulations, designing of cosmeceuticals and herbal products |
| Professional Elective-II | Pharmaceutical validation | <ul style="list-style-type: none"> Upon completion of the subject student shall be able to explain the aspect of validation Carryout validation of manufacturing processes Apply the knowledge of validation to instruments and equipments. |
| Professional Elective-II | Stability of drugs and dosage forms | <ul style="list-style-type: none"> The students should describe the evaluation of stability of solutions, solids and formulations against adverse conditions. The students should be able to suggest the measures to retain stability and storage conditions for retaining the efficacy of the products. |
| | Research methodology and IPR | <ul style="list-style-type: none"> At the end of this course, students will be able to understand research problem formulation. Analyze research related information Follow research ethics Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity. Understanding 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 & engineering in particular. 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. |



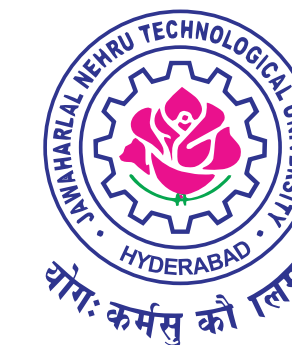
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M. PHARMACY
PHARMACEUTICS
I YEAR II SEM



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|---------------------------|----------------------------------|---|
| Professional Core-III | Modern Pharmaceutics - II | <ul style="list-style-type: none"> Students will understand the planning of pilot plant techniques used for all pharmaceutical dosage forms such as tablets, capsules, parenterals, aerosols, cosmetics and nutraceuticals. |
| Professional Core-IV | Advanced Drug Delivery Systems | <ul style="list-style-type: none"> Students will select the drugs for CDDS design of the formulation fabrication of systems of above drug delivery systems with relevant applications. |
| Professional Elective-III | Industrial Pharmacy | <ul style="list-style-type: none"> The students will explain the machinery involved in milling, mixing, filtration, drying and packing material constructions used in the production of pharmaceutical materials. They also learn salient features of GMP, TQM applicable in industry. They also understand the effluent treatments and prevent the pollution. They also should evaluate the validation of analytical methods and processes |
| Professional Elective-III | Herbal Cosmetics | <ul style="list-style-type: none"> Students will learn about the raw materials used in herbal cosmetics and get exposed to various preparations of herbal cosmetics |
| Professional Elective-III | Pharmaceutical Management | <ul style="list-style-type: none"> These topics are useful for the students to know how to manage a pharma industry and its various departments viz QA, QC, RA, Production etc. Along with this it aids the students to develop leadership qualities, communication & interpersonal skills, decisions making, motivation, organization & various managerial functions & professional skills required for a dynamic professional. Management helps to understand the concept of managerial control, its levels & role, importance in pharma industry. |
| Professional Elective-IV | Nano Based Drug Delivery Systems | <ul style="list-style-type: none"> The students should be able to select the right kind of materials, able to develop nano formulations with appropriate technologies, evaluate the product related test and for identified diseases |



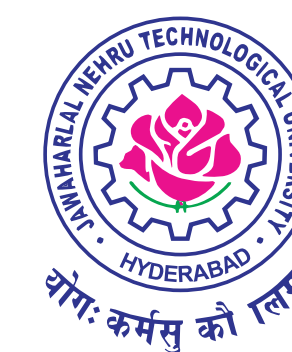
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I YEAR II SEM



COURSE OUTCOME

| COURSE CODE | SUBJECT | COURSE OUTCOME |
|--------------------------|---|---|
| Professional Elective-IV | Nutraceuticals | <ul style="list-style-type: none">Helps the student to understand the importance of Nutraceuticals in various common problems with the concept of free radicals |
| Professional Elective-IV | Clinical Research and Pharmacovigilance | <ul style="list-style-type: none">Upon completion of the course, the student shall be able to explain the regulatory requirements for conducting clinical trialDemonstrate the types of clinical trial designs.Explain the responsibilities of key players involved in clinical trialsExecute safety monitoring, reporting and close-out activitiesExplain the principles of PharmacovigilanceDetect new adverse drug reactions and their assessmentPerform the adverse drug reaction reporting systems and communication in pharmacovigilance. |