SRI VENKATESWARA COLLEGE OF PHARMACY

Approved by AICTE & PCI, New Delhi, Permanently Affiliated to JNTUA, Ananthapuramu
Accredited by NBA, New Delhi for UG Programme under Tier-II &
Accredited by NAAC, Bengaluru
Recognized under section 2(f) & 12(B) of UGC Act, 1956
Recognized Research Centre for Pharmaceutical Sciences by JNTUA
RVS NAGAR, TIRUPATI ROAD, CHITTOOR – 517127, A.P.

Pharm.D. Programme

Program Outcome (PO's)

1. Graduates will demonstrate knowledge of Pharmaceutical sciences

2. Graduates will demonstrate an ability to identify, formulate and resolve difficulties in pharmaceutical industry, community and hospital Pharmacy.

3. Graduates will conduct analyse and interpret data of experiments in production,analytical and clinical aspects.

4. Graduates will enter into the practice of pharmacy to serve society as ethical and caring professionals.

5. Graduates will apply knowledge of drugs and drug therapy to resolve medication related problems and make decisions on behalf of their patients for better patient care.

6. Graduates will educate, communicate, and collaborate with patients and health care professionals.

7. Graduates will assume a leadership role in the future direction of the profession andpracticing with international standards.

8. Graduates will demonstrate knowledge of professional and ethical responsibilitiesliable to the profession and society.

9. Graduate will understand and implement the professional knowledge in research teamand or alone in multidisciplinary tasks.

10. Graduates will develop professional practice as a lifelong learning experience.

Course outcomes : (First year)

Human Anatomy and Physiology (17T00101)

1. Recognize the anatomical structures and explain the physiological functions of bodysystems.

2. Use anatomical knowledge to predict physiological consequences, and use knowledge of function to predict the features of anatomical structures

3. Synthesize ideas to make a connection between knowledge of anatomy and physiology and real-world situations, including healthy lifestyle decisions andhomeostatic imbalances.

4. Demonstrate laboratory procedures used to examine anatomical structures and evaluate physiological functions of each organ system.

Pharmaceutics (17T00102)

1. List the salient features of different Pharmacopoeias.

2. Explain various procedures involved in formulation and evaluation of different types of dosage forms

3. Calculate different Pharmaceutical calculations involved in formulation.

Medicinal Biochemistry (17T00103)

1. Understand the transport mechanisms across the membrane, catalytic activity of enzymes diagnostic importance.

2. Explain the metabolism of bio molecules and their metabolic disorders. Demonstrate the possible mechanism and the intermediate product involved in a chemical reaction.

3. Estimate the constituents present in urine and serum.

4. Describe the diagnosis for kidney and liver diseases.

Pharmaceutical Organic Chemistry (17T00104)

1. Demonstrate the knowledge of the inter-link of pharmaceutical sciences withPharmaceutical organic chemistry by learning.

2. Describe IUPAC Common system of nomenclature, types of organic reactions, mechanisms and named reaction with mechanism.

3. Apply the appropriate substrate, catalyst and reaction conditions in the design of chemical reaction.

4. Analyze the fundamentals on behavior of chemical compounds in design of beneficial, economic and safe reaction for a new chemical entity.

Pharmaceutical Inorganic Chemistry (17T00105)

1. State the concept, preparations, and properties of various classes of inorganic compounds and also regarding the applications in the various fields.

2. Demonstrate the various concepts of end point detection and also importance of various medicinal gases, trace elements and radio pharmaceuticals in the pharmaceutical / medicinal / clinical purposes.

3. Analyse the standardization & purity evaluation of various pharmaceutical inorganic compounds as per IP with possible principle behind assays and the limit tests.

Remedial Mathematics (17T00106)

1. Define Trigonometry, Analytical geometry, Matrices, Determinant, Integration, Differential equation, Laplace transform and their applications;

2. Solve the problems of different types by applying theory

3. Appreciate the important applications of mathematics in pharmacy.

Remedial Biology (17T00106)

1. State about Morphological features fruits, Seeds, Modification of Leaf, Stem, Roots

2. List about General organization of plants and its inclusions.

3. Recognize the Histological structures and explain the importance of Plants and Animals

4. Graduates will be able to have imperative knowledge on management in poisonous

Second year:

Pathophysiology (17T00201)

1. Define the basic terminology related to pathophysiology.

2. Describe the etiology and pathogenesis of the selected disease states.

3. Name the signs, symptoms and complications of the diseases.

4. Define the basic approach to diagnosis and diagnostic procedures of human diseases.

5. Correlate the Pathophysiology with prognosis, medical treatment of the diseases.

6. Evaluate medical journals, health articles and other forms of data related to Pathophysiology.

Pharmaceutical Microbiology (17T00202)

1. Graduates will be able to know the anatomy, identification, growth factors and sterilization of microorganisms.

2. Assess the mode of transmission of disease causing microorganism, symptoms of disease, and treatment aspect.

3. Propose the reasons for microbial culture sensitivity testing.

Pharmacognosy and Phytopharmaceuticals (17T00203)

1. Record the basic principles of cultivation, collection and storage of crude drugs;

2. List the source, active constituents and uses of various naturally occurring drugs

3. Relate the applications of primary and secondary metabolites of the plant

4. List the adulteration and its evaluation for the crude drugs

Pharmacology – I (17T00204)

1. Classify the drugs used in the treatment of various diseases.

2. Describe the mechanism of actions, pharmacological actions, pharmacokinetics, route of administration, uses, dose, adverse effects, contra indications and drug interactions.

3. Describe the mechanism of different types of receptors

4. Apply the importance of pharmacology as a basis of therapeutics.

Community pharmacy (17T00205)

1. Effectively use the pharmacy's prescription filling software to fill prescriptions, check for drug interactions, retrieve patient profiles and retrieve drug information.

2. Demonstrate the proper usage of the commonly used blood glucose meters and train patients how to use them properly.

3. Proper usage of OTC products and explain to patients how to use them properly.

4. Collaborate with physicians and other health care providers to provide recommendations to drug therapy to enhance quality of care and the patients quality of life.

5. The schedules of control substances, storage requirements and dispensing and inventory procedures.

Pharmacotherapeutics – I (17T00206)

1. The pathophysiology of selected disease states and the rationale for drug therapy;

2. The therapeutic approach to management of these diseases;

3. The controversies in drug therapy;

4. The importance of preparation of individualised therapeutic plans based on diagnosis;

5. 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);

6. Describe the pathophysiology of selected disease states and explain the rationale for drug therapy;

7. Summaries the therapeutic approach to management of these diseases including reference to the latest available evidence;

8. Discuss the controversies in drug therapy;

9. Discuss the preparation of individualized therapeutic plans based on diagnosis; and

10.   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).

Third year

Pharmacology-II (17T00301)

1. Classify the drugs used in the treatment of various diseases.

2. Describe the mechanism of actions, pharmacological actions, pharmacokinetics, route of administration, uses, dose, adverse effects, contra indications and drug interactions.

3. Apply the knowledge of gene study in the treatment of various diseases.

4. Apply the importance of pharmacology as a basis of therapeutics.

Pharmaceutical Analysis (17T00302)

1. Define the fundamentals on conventional methods of drug analysis used in laboratories and also the basic principles of other analytical techniques used in analytical industry.

2. Demonstrate the applications of various analytical methods to the drugs &pharmaceuticals as per the standards.

3. Analyse various chromatographic techniques for the separation of mixtures.

4. Apply the analytical data of various spectroscopic techniques for their identification, quantification and in structural illustration.

Pharmacotherapeutics II (17T00303)

1. The pathophysiology of selected disease states and the rationale for drug therapy;

2. The therapeutic approach to management of these diseases;

3. The controversies in drug therapy;

4. The importance of preparation of individualised therapeutic plans based on diagnosis;

5. 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);

6. Describe the pathophysiology of selected disease states and explain the rationale for drug therapy;

7. Summaries the therapeutic approach to management of these diseases including reference to the latest available evidence;

8. Discuss the controversies in drug therapy;

9. Discuss the preparation of individualized therapeutic plans based on diagnosis; and

10. 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).

Pharmaceutical Jurisprudence (17T00304)

1. Students understand laws and procedures regarding manufacturing and sale of drugs and dosage forms and acquire knowledge of various schedules and ethical responsibilities of registered pharmacist

2. Practice the Professional ethics;

3. Understand the various concepts of the pharmaceutical legislation in India;

4. Know the various parameters in the Drug and Cosmetic Act and rules;

5. Know the Drug policy, DPCO, Patent and design act;

6. Understand the labelling requirements and packaging guidelines for drugs and cosmetics;

7. Be able to understand the concepts of Dangerous Drugs Act, Pharmacy Act and Excise duties Act; and

8. Other laws as prescribed by the Pharmacy Council of India from time to time including International Laws.

Medicinal chemistry (17T00305)

1. Define the drug targets and molecular mechanism action.

2. Encourage the development of problem – solving skills and knowledge related to chemotherapy which is necessary to provide pharmaceutical care.

3. Build a knowledge base of chemotherapy principles for various disease states.

4. Applied the knowledge in discussing principles of drug discovery, drug development, drug/receptor interactions and structure/activity relationships.

Pharmaceutical formulations (17T00306)

1. Define various types of pharmaceutical dosage forms and Novel drug delivery system.

2. Explain principles involved in formulation and preparation of various pharmaceutical preparations

3. Apply the principles for preparation of dosage forms with highest standards.

4. Evaluate of pharmaceutical dosage forms by various official tests.

Fourth Year

Pharmacotherapeutics III (17T00401)

1. The pathophysiology of selected disease states and the rationale for drug therapy;
2. The therapeutic approach to management of these diseases;
3. The controversies in drug therapy;
4. The importance of preparation of individualized therapeutic plans based on diagnosis;
5. 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);
6. Describe the pathophysiology of selected disease states and explain the rationale for drug therapy;
7. Summarize the therapeutic approach to management of these diseases including reference to the latest available evidence;
8. Discuss the controversies in drug therapy;
9. Discuss the preparation of individualized therapeutic plans based on diagnosis; and
10. 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).

Hospital Pharmacy (17T00402)

1. Abide by the policies and procedures, as well as rules and regulations affecting general pharmacy operations including inventory management.
2. Describe the role of the pharmacist on hospital committees that have pharmacist representation and its impact or application to patient care.

3. Demonstrate good aseptic technique to compound sterile dosage forms and IV medications.

4. Professionally communicate and document recommendations and interventions to various healthcare professionals.

Clinical Pharmacy (17T00403)

1. Monitor drug therapy of patient through medication chart review and clinical review and counsel the patients.

2. Detection, assessment, monitoring, reporting and documentation of ADR's.

3. Interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states and designing appropriate drug therapy regimen.

4. Identify and resolve drug related problems.

5. Clinical design making.

Bio-Statistics and Research Methodology (17T00404)

1. Define Research Methodology, Biostatistics, data graphics, Basics of Testing of hypothesis

2. Recognize types of clinical studies, types of data distribution, and Data graphics Statistical and computer applications in Pharmacy.

3. Formulate Students test, chi-square test, Analysis of variance (One-way and two-ways)

Biopharmaceutics & Pharmacokinetics (17T00405)

1. Underline the basic concepts of pharmacokinetics and biopharmaceutics.

2. Explain the physiological, physicochemical and dosage form-related factors that affects drug absorption from different dosage forms.

3. Describe the different pharmacokinetic models.

4. Differentiate between compartmental and non-compartmental analysis.

5. Estimate the basic pharmacokinetic parameters that describe drug absorption and disposition.

Clinical Toxicology (17T00406)

1. Discuss the epidemiologic and demographic parameters that characterize toxic exposures in the United States.

2. Discuss the role of the pharmaco-therapist in the evaluation and management of poisoned patients

3. Utilize historical information and clinical patient assessments in the evaluation of the poisoned patient.

4. Formulate a treatment plan based on history, time course of the exposure, presenting symptomatology, toxidrome recognition, and assessment of toxic potential.

5. Discuss current philosophies, and cite the risks associated with, the use of various methods of gastrointestinal decontamination for ingested toxins. Choose the appropriate modality for specific poisoned/overdosed patients.

6. Initiate appropriate diagnostic laboratory analyses and recommend the appropriate laboratory and physical assessments to aid in monitoring the progress of the toxic or suspected toxic exposure, correctly interpreting the results of such interventions.

7. Discuss the indications for use and the risks associated with the various methods utilized to enhance elimination in the poisoned patient. Select the appropriate therapy based on the exposure and symptoms.

8. Develop a therapeutic management and monitoring plan when the use of a pharmacologic antidote is indicated for the poisoned/overdosed patient.

9. Define economic and therapeutic outcomes in poisoned patients

First year (Pharm –D P.B) Pharmacotherapeutics I & II (17T00411)

1. The pathophysiology of selected disease states and the rationale for drug therapy;

2. The therapeutic approach to management of these diseases;

3. The controversies in drug therapy;

4. The importance of preparation of individualized therapeutic plans based on diagnosis;

5. 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);

6. Describe the pathophysiology of selected disease states and explain the rationale for drug therapy;

7. Summarize the therapeutic approach to management of these diseases including reference to the latest available evidence;

8. Discuss the controversies in drug therapy;

9. Discuss the preparation of individualized therapeutic plans based on diagnosis; and

10. 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).

Fifth Year

Clinical Research (17T00501)

1. These courses provide students with a theoretical and practical understanding of the issues involved in the design, conduct, analysis and interpretation of preclinical and clinical trials in living beings.

2. Skills to examine information, for critical analyses and carry out research, and to communicate effectively.

3. Develop the capacity to understand and analyse the application of ICH – GCP guidelines clinically.

Pharmacoepidemiology and Pharmacoeconomics (17T00502)

1. Epidemic measures and outcome measures in drug use

2. Application of Pharmacoepidemiology

3. Designing of Pharmacoepidemiological methods

4. Special application of Pharmacoepidemiological methods

5. Sources of data to conduct Pharmacoepidemiological studies

6. Usage Pharmacoeconomic tools in various conditions

7. Application of Pharmacoeconomic principles in decision making

8. Software's used in pharmacoeconomics and Pharmacoepidemiology

Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring (17T00503)

1. Define important concepts of clinical pharmacokinetic and pharmacodynamic.

2. Understand the effect of pharmacokinetics and pharmacodynamic parameters and the observed drug concentration and clinical response.

3. Recommend dose adjustments of drugs based on renal and hepatic functions.
4. Provide patient-specific initial dosage recommendations for therapeutically monitored drugs and dosage adjustment based on plasma concentration.