

D.PHARMACY Allopathic (Diploma in Pharmacy)

Program Outcomes

PO1. 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.

PO2. Problem analysis: Utilize the principles of scientific enquiry, thinking 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.

PO3. Design/development of solutions: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.

PO4. Conduct investigations of complex problems: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.

PO6. 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

PO7. 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.

PO8. Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behaviour that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions

PO9. Individual and team work: Function effectively as an individual, and as a member or leader in teams, and gain multidisciplinary knowledge through innovative projects, industrial training.

PO10. 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.

PO11. Project management and finance: Demonstrate knowledge and understanding of Pharmacy and management principles and apply these to one's own work, as a member and leader in a team. Manage projects in multidisciplinary environments.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-access and use feedback effectively from others to identify learning needs and to satisfy these needs on an on-going basis.

D. Pharmacy 1st Year:

Course Code : ER20-11T

Title of the course : PHARMACEUTICS (Theory)

Course Outcomes: This course is designed to impart a fundamental knowledge on the preparatory pharmacy with arts and science of preparing the different conventional dosage forms. Upon successful completion of this course, the students will be able to

CO1: Describe about the different dosage forms and their formulation aspects

CO2: Explain the advantages, disadvantages, and quality control tests of different dosage forms

CO3: Discuss the importance of quality assurance and good manufacturing practices.

Course Code : ER20-11P

Title of the course : PHARMACEUTICS (Practical)

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1: Calculate the working formula from the given master formula

CO2: Formulate the dosage form and dispense in an appropriate container

CO3: Design the label with the necessary product and patient information

CO4: Perform the basic quality control tests for the common dosage forms

Course Code : ER20-12T

Title of the course : PHARMACEUTICAL CHEMISTRY (Theory)

Course Outcomes: This course is designed to impart a fundamental knowledge on the preparatory pharmacy with arts and science of preparing the different conventional dosage forms. Upon successful completion of this course, the students will be able to

CO1: Describe the chemical class, structure and chemical name of the commonly used drugs and pharmaceuticals of both organic and inorganic nature

CO2: Discuss the pharmacological uses, dosage regimen, stability issues and storage conditions of all such chemical substances commonly used as drugs

CO3: Describe the quantitative and qualitative analysis, impurity testing of the chemical substances given in the official monographs

CO4: Identify the dosage form & the brand names of the drugs and pharmaceuticals popular in the market place.

Course Code : ER20-12P

Title of the course : PHARMACEUTICAL CHEMISTRY (Practical)

Course Outcomes:

Upon successful completion of this course, the students will be able to

CO1: Perform the limit tests for various inorganic elements and report

CO2: Prepare standard solutions using the principles of volumetric analysis

CO3: Test the purity of the selected inorganic and organic compounds against the monograph standards

CO4: Synthesize the selected chemical substances as per the standard synthetic scheme

CO5: Perform qualitative tests to systematically identify the unknown chemical substances

Course Code : ER20-13T

Title of the course : PHARMACOGNOSY (Theory)

Course Outcomes: In this student learns about the scope of Pharmacognosy includes the history, scope and its various other traditional system. It also includes the Occurrence, distribution, Organoleptic evaluation, chemical constituents including tests wherever applicable and therapeutic efficacy of following categories of drugs. Upon successful completion of this course, the students will be able to

CO1: Identify the important/common crude drugs of natural origin

CO2: Describe the uses of herbs in nutraceuticals and cosmeceuticals

CO3: Discuss the principles of alternative system of medicines

CO4: Describe the importance of quality control of drugs of natural origin

Course Code : **ER20-13P**

Title of the course : **PHARMACOGNOSY (Practical)**

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1: Identify the given crude drugs based on the morphological characteristics

CO2: Take a transverse section of the given crude drugs

CO3: Describe the anatomical characteristics of the given crude drug under microscopical conditions

CO4: Carry out the physical and chemical tests to evaluate the given crude drugs

Course Code : **ER20-14T**

Title of the course : **HUMAN ANATOMY AND PHYSIOLOGY (Theory)**

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1: Describe the various organ systems of the human body

CO2: Discuss the anatomical features of the important human organs and tissues

CO3: Explain the homeostatic mechanisms regulating the normal physiology in the human system

CO4: Discuss the significance of various vital physiological parameters of the human body.

Course Code : **ER20-14P**

Title of the course : **HUMAN ANATOMY AND PHYSIOLOGY (Practical)**

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1: Perform the haematological tests in human subjects and interpret the results

CO2: Record, monitor and document the vital physiological parameters of human subjects and interpret the results

CO3: Describe the anatomical features of the important human tissues under the microscopical conditions

CO4: Discuss the significance of various anatomical and physiological characteristics of the human body

Course Code : ER20-15T

Title of the course : SOCIAL PHARMACY (Theory)

Course Outcomes: This course is designed to impart basic knowledge on public health, epidemiology, preventive care, and other social health related concepts. Also, to emphasize the roles of pharmacists in the public health programs. Upon successful completion of this course, the students will be able to

CO1: Discuss about roles of pharmacists in the various national health programs

CO2: Describe various sources of health hazards and disease preventive measures

CO3: Discuss the healthcare issues associated with food and nutritional substances

CO4: Describe the general roles and responsibilities of pharmacists in public health

Course Code : ER20-15P

Title of the course : SOCIAL PHARMACY (Practical)

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1: Describe the roles and responsibilities of pharmacists in various National health programs

CO2: Design promotional materials for public health awareness

CO3: Describe various health hazards including microbial sources

CO4: Advice on preventive measures for various diseases

CO5: Provide first aid for various emergency conditions

D. Pharmacy 2nd Year:

PHARMACOLOGY – THEORY

Course Code: ER20-21T

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1: Describe the basic concepts of pharmacokinetics and pharmacodynamics

CO2: Enlist the various classes and drugs of choices for any given disease condition

CO3. Advise the dosage regimen, route of administration and contraindications for a given drug

CO4. Describe the common adverse drug reactions

PHARMACOLOGY – PRACTICAL

Course Code: ER20-21P

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1. Study and report the local anaesthetic, mydriatic and mitotic effects of the given drug on the rabbit eye

CO2. Choose appropriate animal experiment model to study the effects of the given drugs acting on the central nervous system and submit the report

CO3. Perform the effects of given tissues (simulated) on isolated organs / tissues and interpret the results

CO4. Interpret the dose dependent responses of drugs in various animal experiment models

COMMUNITY PHARMACY AND MANAGEMENT – THEORY

Course Code: ER20-22T

Course Outcomes: Upon successful completion of this course, the students will be able to

C01. Describe the establishment, legal requirements, and effective administration of a community pharmacy

C02. Professionally handle prescriptions and dispense medications

C03. Counsel patients about the disease, prescription and or non-prescription medicines

C04. Perform basic health screening on patients and interpret the reports in the community pharmacy settings

COMMUNITY PHARMACY AND MANAGEMENT – PRACTICAL

Course Code: ER20-22P

Course Outcomes: Upon successful completion of this course, the students will be able to

- CO1.** Handle and fill prescriptions in a professional manner
- CO2.** Counsel patients on various diseases and minor ailments
- CO3.** Counsel patients on prescription and or non-prescription medicines
- CO4.** Design and prepare patient information leaflets
- CO5.** Perform basic health screening tests

BIOCHEMISTRY & CLINICAL PATHOLOGY – THEORY

Course Code: ER20-23T

Course Outcomes: Upon successful completion of this course, the students will be able to

- CO1.** Describe the functions of biomolecules
- CO2.** Discuss the various functions of enzymes in the human system
- CO3.** Explain the metabolic pathways of biomolecules in both physiological and pathological conditions
- CO4.** Describe the principles of organ function tests and their clinical significances
- CO5.** Determine the biomolecules / metabolites in the given biological samples, both qualitatively and quantitatively
- CO6.** Describe the clinical pathology of blood and urine

BIOCHEMISTRY & CLINICAL PATHOLOGY – PRACTICAL

Course Code: ER20-23P

Course Outcomes: Upon successful completion of this course, the students will be able to

- CO1.** Qualitatively determine the biomolecules / metabolites in the given biological samples
- CO2.** Determine the normal and abnormal constituents in blood and urine samples and interpret the results of such testing

PHARMACOTHERAPEUTICS - THEORY

Course Code: ER20-24T

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1. Help assessing the subjective and objective parameters of patients in common disease conditions

CO2. Assist other healthcare providers to analyze drug related problems and provide therapeutic interventions

CO3. Participate in planning the rational medicine therapy for common diseases

CO4. Design and deliver discharge counseling for patients

PHARMACOTHERAPEUTICS – PRACTICAL

Course Code: ER20-24P

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1. Write SOAP (Subjective, Objective, Assessment and Plan) notes for the given clinical cases of selected common diseases

CO2. Counsel the patients about the disease conditions, uses of drugs, methods of handling and administration of drugs, life-style modifications, and monitoring parameters.

HOSPITAL AND CLINICAL PHARMACY – THEORY

Course Code: ER20-25T

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1. Explain about the basic concepts of hospital pharmacy administration

CO2. Manage the supply chain and distribution of medicines within the hospital settings

CO3. Assist the other healthcare providers in monitoring drug therapy and address drug related problems

CO4. Interpret common lab investigation reports for optimizing drug therapy

HOSPITAL AND CLINICAL PHARMACY – PRACTICAL

Course Code: ER20-25P

Course Outcomes: Upon completion of the course, the students will be able to

CO1. Professionally handle and answer the drug information queries

CO2. Interpret the common laboratory reports

CO3. Report suspected adverse drug reactions using standard procedures

CO4. Understand the uses and methods of handling various medical/surgical aids and devices

CO5. Interpret and report the drug-drug interactions in common diseases for optimizing the drug therapy

PHARMACY LAW AND ETHICS – THEORY

Course Code: ER20-26T

Course Outcomes: Upon successful completion of this course, the students will be able to

CO1. Describe the history and evolution of pharmacy law in India

CO2. Interpret the act and rules regulating the profession and practice of pharmacy in India

CO3. Discuss the various codes of ethics related to practice standards in pharmacy

CO4. Interpret the fundamentals of patent laws from the perspectives of pharmacy