Smt. Champaben Vasantbhai Gajera Pharmacy Mahila College, Amreli

2.6.1. Pos and Cos

Program Outcomes:

PO1: Gain knowledge on basic of biology, structure & function of various systems of human body, fundamental &principles of analytical chemistry, basics and preparation of different dosage forms, monographs of inorganic drugs& pharmaceuticals, soft-skills management, and problem solving in pharmacy.

PO2: Understand stability, reactivity, standardization & medicinal uses of organic compounds. Physical, physic-chemical properties & unit operation involved in dosage forms. Basics and pharmaceutical application of microbiology.

PO3: Gain knowledge of physic- chemical properties of drug substances, formulations, manufacturing, evaluation and packaging of various solid, liquid and semi-solid dosage forms.

PO4: Gain knowledge in drug design techniques, chemistry, assay, mechanism of action, structure activity relationship & pharmacology of various categories of drugs. Experimental screening models for drug discovery. Bio pharmaceutics & pharmacokinetic application in pharmacotherapy. Learn about raw material, formulations, quality control, patenting & regulatory requirement of nutraceuticals & herbal cosmetics.

PO5: Use of statistical principles in research and development of pharmaceuticals. Knowledge of national health program and pharmacist role.

PO6: Able to understand physiology, pathophysiological mechanisms, biochemical processes, diagnosis of various pathological conditions, understand metabolism of bioactive molecules, performing hematological tests & biochemical

tests. Basic understanding of organic reactions, identifications, preparations, awareness of environmental problems, application of databases in pharmacy.

Course Outcomes:

CO1 Human anatomy and physiology I: perform the various experiments related to special senses and nervous system, Should understand the coordinated working patterns of different organs of each system, and should understand various homeostics mechanisms and their imbalances, Should identify the various tissues and organs of human body.

CO2 Pharmaceutical analysis I: Learning this subject content will develop the ideas with the fundamental chemistry of indicator and aqueous, non aqueous acid base titrations, Understand and perform estimation of metal ions, primary aromatic amines and quantitative determination of analytes.

CO3 HUMAN ANATOMY AND PHYSIOLOGY-I: Summarize the composition, functions and circulation of lymph, lymph node (structure and function), spleen (structure and function), Summarize the composition and function of blood, formation of rbc,wbc,and their physiological role, mechanism of blood coagulation and blood groups. Summarize the cell physiology, structure and function of plasma membrane and cell organelles. Summarize different types of tissues and its characterisation. Summarize the anatomy of respiratory organs and their functions, exchange gases, transport of respiratory gases, regulation of respiration, respiratory volumes and vital capacity.

CO4 Remedial Mathematics: solve the different types of problems by applying theory. Know the theory and their application in pharmacy. Appreciate the importance application of mathematics in pharmacy.

CO5 Remedial Biology: understand the basic components of anatomy & physiology of plant. Understand the basic components of anatomy & physiology animal with special reference to human.

CO6 Communication skills: Develop leadership qualities and essentials, develop interview skills, understand the behavioral needs for a pharmacist to function

effectively in the areas of pharmaceutical operation, communicate effectively verbally and non verbally.

CO7 Pharmaceutical engineering: perform various experiments related to heat transfer, ability to determine end point of drying and loss of drying and moisture content of a wet sample by constructing drying rate curve, Understand the construction working and application of various equipments by practical demonstration.

CO8 Pharmaceutical Organic Chemistry I: Graduate will acquire an adequate knowledge in nomenclature isomerism and physical properties of certain important classes of organic compounds which impart a foundation for the future study of various medicinal compounds, The account for reactivity orientation and stability of the compounds attribute to the influence towards predicting the prognosis of certain reactions, Mechanisms of synthetic tools in generating newer products and intermediates can be correlated with novel drug design and development in future.

CO9 HUMAN ANATOMY AND PHYSIOLOGY-II: Illustrate the anatomy and physiology of organs of digestive system. role of salivary glands, stomach, small intestine, large intestine, pancreas and liver in digestion and absorption of carbohydrate, protein and fats. Explain anatomy and physiology of urinary system, structure of nephron, formation of urine, micturition, and rennin angiotensin system. Sketch the structure and function of skin and explain regulation of body temperature. Explain the anatomy and physiology of special senses. Outline the physiology of hormones of hypothalamus-pituitary gland, adrenal gland, thyroid gland, pancreas and gonads.

CO10 Computer application in Pharmacy: To know the various types of application of computer in pharmacy, know the various database, know the various applications of databases in pharmacy.

CO11 Environmental studies: Create the awareness about environmental problems among learners, develop an attitude of concern for the environment, Acquire skills to help the concerned individuals in identifying and solving environmental

problems, Motivate learners to participate in environment protection and improvement.

CO12 PHARMACEUTICAL CHEMISTRY-II (ORGANIC): Outline the concept of electronic configuration, hybridization, electro negativity, various bonds, sources and properties of molecules. Illustrate the concept of isomerism, various projections, configurations, strain
theory. Explain various methods of detection and estimation of elements, formulae's,
nomenclature and uses of various compounds. Explain the concept of chemical reactions, functional groups, types of reaction.

CO13 Physical pharmaceutics I: Acquire detail knowledge on different types of solubility's and their application in the development of delivery system, Describe the pharmaceutical relevance of different states of matter to drug delivery system, Describe analyze distinguish the types of complex & correlate to drug action and protein binding.

CO14 Biochemistry: Upon completion of the course student shall be able to understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes, metabolism of nutrient molecules in physiological and pathological conditions, genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins, qualitative and quantitative analysis of biochemical constituents of blood and urine.

CO15 Pathophysiology: Upon completion of the course the students shall be able to understand etiology, pathogenesis, signs, symptoms, complications & diagnosis of selected diseases

CO16 PH.ORG CHEMISTRY II: The student shall be able to know the physical and chemical properties of aromatic compounds, phenols, amines, polynuclear hydrocarbons. Stability and reactions of cycloalkanes. Analyze fats and oils and prepare some aromatic compounds.

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09/1/2023

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CO17 Medicinal Chemistry III: Able to summarize the importance of drug design and different approaches of drug design, chemistry of drugs with respect to their biological activity, metabolism, adverse effects and therapeutic value of drugs, SAR and QSAR of drugs

CO18 PHYSICAL Pharmaceutics CEUTICS II: Gain knowledge of physico-chemical properties of drug molecules, principles of chemical kinetics and stability testing.

CO19 PH.COLOGY I: Understand the basic principles of drug action, pharmacology of drugs, prevention and treatment of various diseases.

CO20 PHARMACEUTICALJURISPRUDENCE: Gain the knowledge of Drugs and Cosmetic Act and Rules, Pharmacy Act, Narcotic Drugs and Psychotropic Substances Act, practice of professional ethics, Pharmaceutical Legislationof India, magic remedies act, prevention of cruelty to animals and pricing of dosage forms,

CO21 MEDICINAL CHEMISTRYII: Upon completion of course students are able to summarize the chemistry of drugs with theirpharmacological action, drug metabolism, adverse drug interactions and therapeutic value ofdrugs, Structure activity relationship studies (SAR) of different classes of drugs and chemical synthesis of some drugs.

CO22 PHARMACOLOGY II: Understand the pharmacodynamics and their application in the pharmacotherapy of various drugs used in the treatment of cardiovascular, endocrine disorders. Know the experimental techniques and models used for the pharmacological study of drugs.

CO23 PH.COGNOSY & PHYTOCHEMISTRY II: Gain knowledge of how the secondary metabolites are produced in the crude drugs, how to isolate and identify and produce them industrially, producing the plants and phytochemicalsthrough plant tissue culture, drug interactions and basic principles of traditional system of medicine.

09/10/2023

PRINCIPAL/DIRECTOR

CO24 PHARMACEUTICAL BIOTECHNOLOGY: Upon completion of course student shall be able to apply scientific knowledge ofbiotechnology in the field of genetic engineering medicine and fermentation technology.

CO25 MEDICINAL CHEMISTRYIII: Able to summarize the importance of drug design and different approaches of drug design, chemistry of drugs with respect to their biological activity, metabolism, adverse effects and therapeutic value of drugs, SAR and QSAR of drugs.

CO26 HERBAL DRUG TECHNOLOGY: gain knowledge of herbal drug industry, the quality of raw material, guidelines for quality of herbal drugs, herbal cosmetics, natural sweeteners, nutraceutical etc. and Good Manufacturing Practices (GMP), patenting and regulatory issues of herbal drugs.

CO27 BIOPHARMACEUTICS & PHARMACOKINETICS: Able to understand the factors influencing the absorption, disposition of drugs and to optimizefor safer and efficacious treatment. Pharmacokinetic modeling and non linear pharmacokinetics.

CO28 INDUSTRIAL PHARMACYI: Able to learn the role of pre formulation studies, product formulation and quality control testsfor different dosage forms and knowledge of packaging materials.

CO29 INSTRUMENTAL METHOD OF ANALYSIS: Able to explain the instrumentation, principles, procedures of UV-Visible fluorescence and IR spectroscopic techniques and chromatographic techniques for qualitative and quantitative analysis of pharmaceutical compounds. Students also able to demonstrate and use flame photometry, nepheloturbidometry and electrophoresis techniques and their applications in pharmaceutical industry.

CO30 INDUSTRIAL PHARMACYII: Able to understand the process of technology transfer from lab scale to commercial batch,regulations and approval process in pharmaceutical industry.

CO31 PHARMACY PRACTICE: Shall know the organization of hospital and hospital pharmacy, significance, role of hospitaland clinical pharmacist in

providing better patient care.

CO32 NOVEL DRUG DELIVERYSYSTEM: To understand criteria for selection of drugs, polymers, development and evaluation of noveldrug delivery systems.

CO33 QUALITY ASSURANCE: Gain knowledge of quality assurance systems, in process quality control, quality systems,audits, documentation, calibration & validation in pharmaceutical industry.

CO34 BIOSTATISTICS &RESEARCH METHODOLOGY: learn the concepts and able to use various statistical tests, software tools for validation ofpharmaceutical research data.

CO35 SOCIAL AND PREVENTIVE PHARMACY: understand the importance of community health; know about national and international community health programs, role of pharmacist in creating awareness and improving the community health.

CO36 PHARMA MARKETINGMANAGEMENT: Able to implement the marketing principles, concepts, techniques in pharmaceutical industry.

CO37 COSMETIC SCIENCE: Able to understand the regulations, building blocks, manufacturing and evaluation of cosmetics for skin, hair, nail and teeth. Also the use of herbs in cosmetic preparations andknowledge of cosmeceuticals.

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09/01/2023

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