



Curriculum: B. in Pharm 2019-2023

Program Level Course - PO Matrix Report

Program Outcomes (POs) & Program Specific Outcomes (PSOs) :

- 01 . 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.
- 02 . 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.
- 03 . Problem analysis: Utilize the principles of scientific inquiry, 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.
- 04 . Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
- 05 . Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when 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 wellbeing.
- 06 . 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).
- 07 . Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior 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.
- 08 . 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



Anjuman-I-Islam, Mumbai
 Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
 Department of AIKTC School of Pharmacy

09 . 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.

10 . 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.

11 . 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-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

Course Outcomes (COs) - Program Outcomes (POs) & Program Specific Outcomes (PSOs) matrices:-

Course Outcomes (COs):

Course: Human Anatomy and Physiology I - [BP101T] Term: 1 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2		1								
CO4	2		1								
CO5	2										

CO1: Explain the gross morphology, structure and functions of various organs of the human body.

CO2: Describe the various homeostatic mechanisms and their imbalances.

CO3: Identify the various tissues and organs of different systems of human body.

CO4: Perform the various experiments related to special senses and nervous system.

CO5: Appreciate coordinated working pattern of different organs of each system

Course Outcomes (COs):

Course: Pharmaceutical Analysis I - [BP102T] Term: 1 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

C04	2										
C05	2										
C01: Explain the role of pharmaceutical analysis in the field of pharmacy and industry and explain methods of expressing concentration and minimizing errors											
C02: Describe volumetric, acid base and non aqueous titration											
C03: Explain gravimetric, complexometric and precipitation titration and apply simple statistics to numerical data.											
C04: analyse different methods of redox titration											
C05: Understand principle and concept of potentiometry, polarography and conductometry											

Course Outcomes (COs):

Course: Human Anatomy and Physiology - [BP107P] Term: 1 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
C01	3										
C02	3										
C03	3		1								
C04	3		1								
C01: Perform rbc count, wbc count, hb content, esr, bleeding time, clotting time and interpret the results to correlate it with clinical conditions.											
C02: Record/ measure heart rate, pulse rate and blood pressure and interpret the results to correlate it with clinical conditions.											
C03: Distinguish and locate bones in human skeleton											
C04: Identify and describe the various body tissues and organs based on the structure and organization of cells											

Course Outcomes (COs):

Course: Pharmaceutical Inorganic Chemistry Lab - [BP110P] Term: 1 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
C01											
C02											
C03											
C04											



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO1: Identify different inorganic impurities in inorganic medicinal agents by performing pharmacopoeia limit test.

CO2: Perform identification test on inorganic pharmaceuticals.

CO3: Perform purity test on inorganic pharmaceuticals.

CO4: Prepare and purify inorganic pharmaceuticals.

Course Outcomes (COs):

Course: Human Anatomy and Physiology II - [BP201T] Term: 2 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										
CO4	2										
CO5	2										

CO1: Explain the gross morphology, structure and functions of various organs belongs to nervous system, endocrine system, digestive system, urinary system, respiratory system, reproductive system of the human body.

CO2: Describe the various homeostatic mechanisms and their imbalances.

CO3: Explain the coordinated working pattern of different organs of each system

CO4: Discuss the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body.

CO5: Discuss the concept of energetic and genetics of human body.

Course Outcomes (COs):

Course: Pharmaceutical Organic Chemistry I - [BP202T] Term: 2 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	1										
CO2	1										
CO3	1										
CO4	1										

CO1: Write the structure, name and the type of isomerism of the organic compound

CO2: write the reaction, name the reaction and orientation of reactions

CO3: Understand the reactivity/stability of compounds



Anjuman-I-Islam, Mumbai
 Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
 Department of AIKTC School of Pharmacy

CO4: Identify/confirm the identification of organic compound

Course Outcomes (COs):

Course: Biochemistry - [BP203T] Term: 2 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										

CO1: Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes

CO2: Understand the metabolism of nutrient molecules in physiological and pathological conditions

CO3: Understand the genetic organization of mammalian genome and functions of dna in the synthesis of rnas and proteins.

Course Outcomes (COs):

Course: Computer Applications in Pharmacy - [BP205T] Term: 2 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	1										
CO2	2										
CO3		1									

CO1: Students shall be able to know the various types of application of computers in pharmacy

CO2: Student shall be able to know the various types of data bases

CO3: Students shall be able to know the various applications of databases in pharmacy

Course Outcomes (COs):

Course: Environmental sciences - [BP206T] Term: 2 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1										2	2
CO2										2	2
CO3										2	2
CO4										2	2
CO5										2	2
CO6										2	2



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO1: Upon completion of the course the student shall be able to create the awareness about environmental problems among learners.

CO2: Impart basic knowledge about the environment and its allied problems

CO3: Develop an attitude of concern for the environment

CO4: Motivate learner to participate in environment protection and environment improvement.

CO5: Acquire skills to help the concerned individuals in identifying and solving environmental problems.

CO6: Strive to attain harmony with nature

Course Outcomes (COs):

Course: Human Anatomy and Physiology II Lab - [BP207P] Term: 2 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2		1								
CO2	2										
CO3	2										
CO4	2										

CO1: Perform to determine tidal volume, vital capacity, body temperature, basal mass index and different types of taste.

CO2: Describe the different systems of human body, family planning devices, pregnancy diagnosis test.

CO3: Identify vital organs and gonads by observing permanent slides.

CO4: Demonstrate the general neurological examination, visual acuity, reflex activity, total blood count by cell analyser and positive - negative feedback mechanism.

Course Outcomes (COs):

Course: Pharmaceutical Organic Chemistry_I Lab - [BP208P] Term: 2 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	1										
CO2	1										
CO3	1										
CO4	1										

CO1: Practice and follow safety rules and precautionary measures in laboratory and preparation of molecular models



Anjuman-I-Islam, Mumbai
 Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
 Department of AIKTC School of Pharmacy

CO2: Understand theoretical aspects of physical constant determination, detection of functional groups

CO3: characterize/ identify/spot monofunctional unknown organic compounds by physical constant, elemental analysis and functional group analysis

CO4: Prepare derivatives of organic compounds.

Course Outcomes (COs):

Course: Biochemistry Lab - [BP209P] Term: 2 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2			1							
CO3	2										

CO1: Students understand the importance of metabolism of substrates

CO2: Students will acquire knowledge in qualitative and quantitative estimation of biological macromolecules

CO3: Students will learn how to interpret data emanating from biochemical tests

Course Outcomes (COs):

Course: Pharmaceutical Organic Chemistry II - [BP301T] Term: 3 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										

CO1: Write the structure, name and the type of isomerism of the organic compound.

CO2: Write the reaction, name the reaction and orientation of reactions.

CO3: Account for reactivity and stability of compounds.

Course Outcomes (COs):

Course: Physical Pharmaceutics I - [BP302T] Term: 3 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	3										
CO2	3		2								
CO3	3										



Anjuman-I-Islam, Mumbai
 Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
 Department of AIKTC School of Pharmacy

CO1: Understand various physicochemical properties of drug molecules in the designing the dosage forms.

CO2: Know (explain) the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations

CO3: Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms

Course Outcomes (COs):

Course: Pharmaceutical Microbiology - [BP303T] Term: 3 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2											2
CO3	2	2									
CO4	2	2									
CO5	2	2									

CO1: Upon completion of topic, student shall be able to understand methods of identification, cultivation and preservation of microorganism by using various types of microscope. and also student learn about history of microbiology.

CO2: Upon completion of topic , student shall be able to understand the importance and implementation of sterilization technique in pharmaceutical processing and industry

CO3: Upon completion of topic, student shall be able to learn sterility testing of pharmaceutical products and various types of disinfectant.

CO4: Upon completion of topic, student shall be able to understand about aseptic area and carry out microbiological standardization of pharmaceuticals.

CO5: Upon completion of topic, student shall be able to understand various sources of contamination , types of spoilage, preservation of pharmaceutical products , the cell culture technology and its applications in pharmaceutical industries.

Course Outcomes (COs):

Course: Pharmaceutical Engineering - [BP304T] Term: 3 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2		1								
CO3	2										
CO4	2									1	



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

C05	2										1
CO1: Understand mechanics of fluid, fluid flow, and its measurements											
CO2: Explain basic principles and processes involved in unit operations such as size reduction, size separation, evaporation, distillation, filtration, mixing, drying and centrifugation and will be able to describe the equipment and accessories involved therein.											
CO3: Summarize construction material, discuss corrosion of equipment from pharmaceutical industry point.											
CO4: Define and categorize the different industrial hazards.											
CO5: To understand the material handling techniques.											

Course Outcomes (COs):

Course: Pharmaceutical Organic chemistry-II Lab - [BP305P] Term: 3 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2			1							
CO1: Students will be able to demonstrate different purification/analytical laboratory techniques.											
CO2: students will be able to determine oil values of unknown fat/oil sample.											
CO3: Students will be able to prepare compounds with different methods by understanding its reactions with mechanisms.											

Course Outcomes (COs):

Course: Physical Pharmaceutics-I Lab - [BP306P] Term: 3 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	3										
CO2	3										
CO3	3										
CO1: Understand (explain) various physicochemical properties of drug molecules in the designing the dosage forms											
CO2: Know (explain) the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations											
CO3: Demonstrate (explain) use of physicochemical properties in the formulation, development and evaluation of dosage forms											



Course Outcomes (COs):

Course: Pharmaceutical Microbiology Lab - [BP307P] Term: 3 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2		2	2		2					2
CO2	2	2	2	2		2					2
CO3	2		2	2		2					2
CO4	2		2	2		2					2
CO5	2		2	2		2					2

CO1: Know the principle, construction and working of various instruments and perform their operations and skill to handle microscope for observation of microbes

CO2: Learn how to prepare and sterilize nutrient broth, nutrient agar, slants, stabs and plates and adopt the skills required for maintaining strictly aseptic condition & handling inoculating loop, its sterilization and inoculation procedure

CO3: Skill of isolating microorganism by streak plate technique & count them by pour plate technique. develop skill to execute morphology of bacteria by simple staining, negative staining & gram staining

CO4: Adopt the technique involved to see motility of bacteria i.e. hanging drop technique. able to perform the broth dilution method to determine minimum inhibitory concentration and learn how to perform assay of antibiotic.

CO5: Understand the direct inoculation method to do sterility testing. and biochemical test (imvic reactions)

Course Outcomes (COs):

Course: Pharmaceutical Engineering Lab - [BP308P] Term: 3 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										
CO4	2		1								
CO5	2										

CO1: To know various unit operations used in pharmaceutical industries.

CO2: To understand the material handling techniques.

CO3: To perform various processes involved in pharmaceutical manufacturing process.

CO4: To carry out various test to prevent environmental pollution.



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO5: To appreciate the various preventive methods used for corrosion control in pharmaceutical industries.

Course Outcomes (COs):

Course: Pharmaceutical Organic Chemistry-III - [BP401T] Term: 4 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2		1								
CO3	2		1								
CO4	2										
CO5	2										

CO1: Explain the stereo-chemical aspects of organic compounds and stereo-chemical reactions

CO2: Describe chemistry of carbocyclic & heterocyclic compound including nomenclature

CO3: Understand the properties & methods of preparation of organic compounds

CO4: Explain named reactions for the synthesis of different functional groups

CO5: Enlist the medicinal uses & other applications of organic compounds

Course Outcomes (COs):

Course: Medicinal chemistry-I - [BP402T] Term: 4 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	3										
CO2	3										
CO3	3										
CO4	3										
CO5	3										
CO6	3										

CO1: Understand the physicochemical properties of drugs with respect to their biological activity.

CO2: Write the metabolic pathways and metabolites for drugs.

CO3: Classify the drugs based on their structures and therapeutic uses.

CO4: Understand the chemistry of drugs with respect to their mechanism of action and pharmacological activity.



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO5: Explain the structural activity relationships (sar) of different classes of drugs.

CO6: Write the chemical synthesis of some selected drugs.

Course Outcomes (COs):

Course: Physical Pharmaceutics-II - [BP403T] Term: 4 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2		1								
CO3	2										
CO4	2										
CO5	2										

CO1: Explain colloidal system and its properties

CO2: Know (explain) the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations

CO3: Demonstrate (describe) use of physicochemical properties in the formulation development and evaluation of dosage forms

CO4: Explain rheology of various systems and deformation of solids

CO5: Explain the properties of coarse dispersion and micromeritics

Course Outcomes (COs):

Course: Pharmacology-I - [BP404T] Term: 4 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	3		3								
CO2	3										
CO3	3										
CO4	3		3								

CO1: Students should be able to describe the basic concepts of pharmacology such as types of agonist and receptors, signaling mechanism, pharmacokinetic and pharmacodynamics of drugs, drug interaction, adverse drug reactions and drug discovery process etc.

CO2: Students should be able to describe the pharmacological actions of drugs belonging to different categories such as drugs acting on central and peripheral nervous system.



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO3: Students should be able to explain the mechanism of action of drugs acting on central and peripheral nervous system at organ system/sub cellular/ macromolecular levels.

CO4: Students should be able to apply the basic pharmacological knowledge in the prevention and treatment of various diseases affecting central and peripheral nervous system.

Course Outcomes (COs):

Course: Pharmacognosy-I - [BP405T] Term: 4 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2	1	1							1	1
CO2	2						1	1			
CO3	2			1	1			1			1

CO1: To know the techniques in the cultivation and production of crude drugs

CO2: To know the crude drugs, their uses and chemical nature

CO3: Know the evaluation techniques for the herbal drugs

Course Outcomes (COs):

Course: Medicinal Chemistry I - Practical - [BP406P] Term: 4 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	1										
CO2	2										
CO3	2		1								
CO4	1		1								
CO5		1						1			

CO1: Synthesize various drugs/ drug intermediates along with its recrystallization.

CO2: Explain principle of synthesized organic compounds.

CO3: Demonstrate the assay of various drugs as per ip.

CO4: Determine the partition coefficient of drugs.

CO5: Make report of experimental data of all organic synthesis and submit it on time.

Course Outcomes (COs):

Course: Physical Pharmaceutics II - Practical - [BP407P] Term: 4 - Semester



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO	01	02	03	04	05	06	07	08	09	10	11
C01	2										
C02	2										
C03	2										

C01: Understand various physicochemical properties of drug molecules in the designing the dosage forms

C02: Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations

C03: Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms

Course Outcomes (COs):

Course: Pharmacology I - Practical - [BP408P] Term: 4 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
C01											
C02											
C03											
C04											
C05											
C06											

C01: Perform in vitro experiment on cock ileum (tissue) to evaluate effect of drug (ach) and its dose on response (contraction) to comprehend and infer drug effects on receptors and its outcomes.

C02: State the principles behind plotting dose-response of drugs/agonist/antagonist and its applications

C03: Define p_{a2} value and calculate p_{a2} value of antagonist

C04: Summarize the impact of drugs on eye and gi and discuss their potential therapeutic utility.

C05: Observe and explain the mechanisms of action of neurotransmitters, drugs and ions on isolated frog heart.

C06: Knowledge of animal handling techniques and understanding of ethical guidelines governing animal experimentation.

Course Outcomes (COs):

Course: Pharmacognosy I - Practical - [BP409P] Term: 4 - Semester



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO	01	02	03	04	05	06	07	08	09	10	11
C01	3		2								
C02	3		2								
C03	3		2								
C04	3		2								

C01: 1. perform analysis of crude drugs by chemical test.

C02: 2. demonstrate the ability to determine stomatal number, stomatal index , vein islet, vein termination and palisade ratio of given sample.

C03: 3. perform size determination of starch grain,calcium oxalate crystals and fibres by using eye piece micrometer

C04: 4. evaluate crude drugs by physical methods of evaluation.

Course Outcomes (COs):

Course: Medicinal chemistry -II - [BP501T] Term: 5 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
C01	3										
C02	3										
C03	3										
C04	3										
C05	3										1

C01: Define the structural activity relationship of different classes of drugs along with their generic & iupac names etc.

C02: Students will be able to understand the chemistry of drugs with respect to their pharmacological activity

C03: Students will be able to understand & describe the drug metabolic pathways, adverse effects, and therapeutic value of drugs

C04: Students will be able to outline and interpret the chemical synthesis of selected drugs

C05: Students will be able to discuss and interpret the medication regimes utilized by patients for cardiovascular disease states

Course Outcomes (COs):

Course: Industrial Pharmacy - [BP502T] Term: 5 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
----	----	----	----	----	----	----	----	----	----	----	----



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

C01	2	2	1									
C02	2	2	1									
C03	2	2	1									
C04	2	2	1									
C05	2	2	1									
C06	2	2	1									1
C07	2	2	1									

C01: Explain out assessment of physicochemical properties of drugs as a tool in the optimization of solid and liquid dosage forms.

C02: Explain large scale preparation of tablets, capsules, parenteral and ophthalmic dosage forms and liquid orals using established procedures and technology

C03: Describe the facilities and standards necessary for the industrial production of sterile dosage forms.

C04: Summarize the pharmaceutical dosage forms for quality and stability and compare with standards prescribed in the pharmacopoeia

C05: Apply the knowledge in formulating cosmetics such as lipsticks, shampoos, cold cream and vanishing cream, tooth pastes, hair dyes and sunscreens

C06: Describe containers, closures, valves and propellants for different types of aerosol systems.

C07: Explain appropriate packaging materials for various pharmaceutical dosage forms.

Course Outcomes (COs):

Course: Pharmacology-II - [BP503T] Term: 5 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
C01	2										
C02	2										
C03	2										
C04	2		2								

C01: Describe the basic pharmacology of hormones and hormonal analogues at molecular/cellular/organ system and whole body levels

C02: Explain the basic pharmacology of cardiovascular drugs at molecular/cellular/organ system and whole body levels

C03: Apply the concepts of pharmacology to single disease state pharmacotherapy

C04: Discuss the bioassay which provide evidences on their pharmacological activities



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

Course Outcomes (COs):

Course: Pharmacognosy and phytochemistry II - [BP504T] Term: 5 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2	1							1	1	1
CO2	2	1				1	1	1			1
CO3	2									1	
CO4	2										

CO1: To describe the modern extraction techniques of herbal drugs and phytoconstituents

CO2: To understand isolation, identification, analysis, production, estimation and utilization of phytoconstituents and herbal drug interaction

CO3: To know the composition, chemistry and chemical classes of secondary metabolites

CO4: To discuss the metabolic pathways in higher plants and radioactive isotopes in investigation of biogenetic studies.

Course Outcomes (COs):

Course: Pharmaceutical jurisprudence - [BP505T] Term: 5 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										
CO4	2										
CO5	2										
CO6	2						1		1		

CO1: Define various indian pharmaceutical acts and laws.

CO2: Discuss pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals.

CO3: Explain the regulatory authorities and agencies governing the manufacture, sale and import of pharmaceuticals.

CO4: Explain the fundamental of intellectual property rights (ipr).

CO5: Describe the code of ethics during the pharmaceutical practice

CO6: Discuss offences & penalties concerned with laws for drugs and pharmaceuticals

Course Outcomes (COs):



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

Course: Industrial pharmacy I Practical - [BP506P] Term: 5 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2	1	1					1			
CO2	2	1	1					1			
CO3	2	1	1					1			
CO4	2	1	1					1			

CO1: Prepare and evaluate formulations of different dosage forms as per the batch formula

CO2: Select suitable packaging container for a dosage form

CO3: Operate different equipment's used in preparation of dosage forms

CO4: Interpret and communicate the results of the experiments

Course Outcomes (COs):

Course: Pharmacology II Practical - [BP507P] Term: 5 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2	1									
CO3	1										
CO4	2		1								
CO5	2										
CO6	2							2			

CO1: Distinguish different types of bioassays.

CO2: Record physiological responses based on bioassay using simulated software's and submit journal assignment in stipulated time.

CO3: Calculate unknown drug concentration based on different types of bioassays and given data.

CO4: Analyze and interpret given data on the pharmacological action of given drugs.

CO5: Discuss the preclinical models which provide evidences on drug and their pharmacological activities.

CO6: Prepare report on the experimental findings and effectively communicate the pharmacological concepts mentioned in the course.

Course Outcomes (COs):

Course: Pharmacognosy II - Practical - [BP508P] Term: 5 - Semester											
---	--	--	--	--	--	--	--	--	--	--	--



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2	1							1	1	1
CO2	2										
CO3	2			1							
CO4	2										

CO1: To carry out the isolation and detection of phytoconstituents using different extraction technique

CO2: To identify given crude drugs by chemical tests

CO3: To identify the drug by the morphology histology powder characteristic of crude drugs

CO4: To carry out distillation of volatile oils

Course Outcomes (COs):

Course: Pharmacology III -Theory - [BP602T] Term: 6 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2		1								
CO4	2										
CO5	2										

CO1: Explain the mechanism of drug action and its relevance in the treatment of different diseases.

CO2: Comprehend the principles of toxicology and treatment of various poisonings

CO3: Appreciate correlation of pharmacology with related medical sciences

CO4: Identify the drug based on their class and pharmacological action.

CO5: Discuss the basic concepts of chronopharmacology

Course Outcomes (COs):

Course: Herbal Drug Technology - Theory - [BP603T] Term: 6 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										
CO4	2										



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

C05	2										
C06	2										
CO1: Discuss herbs as a raw material and their biodynamic agricultural practices.											
CO2: Explain basic principles of indian medicinal systems with method of preparation and standardization of ayurvedic formulations											
CO3: Describe the potential role of nutraceuticals in various ailments and herb - drug interactions of few herbal drugs											
CO4: Explain the importance of herbs in preparation of cosmetics, formulations and as an excipient											
CO5: Illustrate who and ich guidelines for assessment, patenting and various regulatory aspects of herbal drugs.											
CO6: Discuss present status and prospects of herbal drug industry with special emphasis on good manufacturing practice for indian systems of medicine.											

Course Outcomes (COs):

Course: Biopharmaceutics and Pharmacokinetics - Theory - [BP604T] Term: 6 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
C01	2										
C02	2										
C03	2										
C04	2		1								
C05	2		1								
CO1: Explain the mechanism, physicochemical and physiological factors affecting drug absorption, distribution, metabolism and excretion											
CO2: Discuss non-linear pharmacokinetics in relation to causative factors and parameter estimation											
CO3: Describe dissolution, ba & be with regards to concepts and clinical methods for assesment											
CO4: Compare and contrast different pk model and based on that discuss model-based and model-independent approaches to characterize the pharmacokinetics of drugs											
CO5: Apply model-based methods to derive pk parameters and required dose for optimal effect											

Course Outcomes (COs):



Anjuman-I-Islam, Mumbai
 Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
 Department of AIKTC School of Pharmacy

Course: Pharmaceutical Biotechnology- Theory - [BP605T] Term: 6 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										
CO4	2										
CO5	2										
CO1: Explain the importance and scope of pharmaceutical biotechnology in the field of pharmacy.											
CO2: Discuss scientific application of biotechnology in the field of genetic engineering, medicine and fermentation technology											
CO3: Elaborate new biological revolutions in diagnosis, prevention and cure of diseases											
CO4: Explain the importance of monoclonal antibodies in industries											
CO5: Summarize the use of microorganisms and immobilized enzymes in fermentation technology											

Course Outcomes (COs):

Course: Pharmaceutical Quality Assurance- Theory - [BP606T] Term: 6 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										
CO4	2										
CO5	2										
CO6	2										
CO1: Explain the concept of qa, qc and tqm with respect to gmp and ich guidelines											
CO2: Elaborate the importance and scope of iso and nabl certification process											
CO3: Discuss the importance of organization & personnel, premises and equipment & raw material in gmp											
CO4: Summarize the important factors affecting the quality in the pharmaceuticals in relation with quality control and good laboratory practices											
CO5: Elaborate the importance and implementation of documentation and complaint management system											



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

CO6: Describe the principle, application and procedure of calibration and validation

Course Outcomes (COs):

Course: Medicinal chemistry III - Practical - [BP607P] Term: 6 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	3	2									
CO2	3										
CO3	3	2	2								
CO4	3			3							

CO1: Synthesize drugs/ drug intermediates along with recrystallization

CO2: Characterize the drug/ drug intermediate with the help of a melting point.

CO3: Analyze the purity of various drugs as per the pharmacopeial procedure.

CO4: Use the chemistry software for drawing the chemical structures and determining physicochemical properties.

Course Outcomes (COs):

Course: Pharmacology III - Practical - [BP608P] Term: 6 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2										
CO3	2										
CO4	2										
CO5	2								1		
CO6	2							2			

CO1: Discuss the preclinical models which provide evidences on drug and their pharmacological activity.

CO2: Interpret the given data and comment on mechanism of action of unknown drug.

CO3: Calculate dose, acute oral toxicity (ld50) and pharmacokinetic parameters of a drug from a given data.

CO4: Discuss and distinguish the biostatistics methods mentioned in curriculum

CO5: Estimate the serum biochemical parameters by using semi autoanalyser

CO6: Prepare report on the experimental findings and effectively communicate the pharmacological concepts mentioned in the course.



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

Course Outcomes (COs):

Course: Herbal Drug Technology - Practical - [BP609P] Term: 6 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2										
CO2	2		1								
CO3	2										
CO4	2		1					1			

CO1: Perform preliminary phytochemical screening of crude drugs and evaluation of natural excipients.

CO2: Determine alcohol content, aldehyde content, phenol content and total alkaloid content of given samples

CO3: Carry out monographic analysis of herbal drugs as per pharmacopoeias.

CO4: To prepare and evaluate herbal formulations

Course Outcomes (COs):

Course: Instrumental method of analysis-theory - [BP701T] Term: 7 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	2			1							
CO2	1			2							
CO3	1		1	1							
CO4	1			2							

CO1: Explain and learn the basic, basic principles and instrumentation and instrumentation of uv, ir, fluorimeter, flame photometer.

CO2: Learn basic principles involved separation and identification of compounds using tlc, column chromatography, paper chromatography and electrophoresis technique.

CO3: Understand and perform the separation of compounds by chromatographic techniques.

CO4: Explain theory and instrumentation of gc, hplc, gel chromatography, ion exchange chromatography and affinity chromatography.

Course Outcomes (COs):

Course: Industrial pharmacy II - [BP702T] Term: 7 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	3	1									
CO2	3	1									



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

C03	3										
C04	3										
C01: Know the process of pilot plant and scale up of pharmaceutical dosage forms											
C02: Understand the process of technology transfer from lab scale to commercial batch											
C03: Know different laws and acts that regulate pharmaceutical industry											
C04: Understand the approval process and regulatory requirements for drug products											

Course Outcomes (COs):

Course: Pharmacy Practice - [BP703T] Term: 7 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
C01	2										
C02	2										
C03	2										
C04	2										
C05	2		1						1		
C01: Explain different types of hospitals, the functions, layout, legal requirements, organization, drug procurement, storage and dispensing of medicines and different hospital health accessories in hospital pharmacy.											
C02: Discuss the role, responsibilities and functions of the pharmacist in different setups like clinics, hospital pharmacies, patient counselling, tdm, adr, di, medication adherence and patient education, and training.											
C03: Discuss different aspects of pharmacy and therapeutic committee, hospital formulary, drug information services, legal requirements, and documentation in the hospital and community pharmacy.											
C04: Describe type of adverse drug reaction, different aspects of tdm, potential drug-drug interaction, methods for detecting drug interactions.											
C05: Apply the knowledge of pharmacy practice to recognise possibility of risk, adverse drug reaction, potential drug-drug interaction in prescription medicines given to the particular patient.											

Course Outcomes (COs):

Course: Novel drug delivery system - [BP704T] Term: 7 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
C01	3	1									
C02	3	1									



Anjuman-I-Islam, Mumbai
Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
Department of AIKTC School of Pharmacy

C03	3	1									
C04	3	1									
C05	3	1									
CO1: Understand the basic concept of ndds											
CO2: Discuss the various principles governing controlled release drug delivery systems											
CO3: Elaborate on concept and mechanism of microencapsulation technique and implantable systems											
CO4: Summarize the concepts of targeting and active & passive targeting based drug delivery											
CO5: Discuss the different ndds components for different routes-oral, transdermal, gastroretentive, ocular, transmucosal, intraureteral use											

Course Outcomes (COs):

Course: Instrumental method of analysis-practical - [BP705P] Term: 7 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
C01	1		2								
C02	1		2	1							
C03	1		2	2							
C04	1		1	1							
CO1: Record the absorbance and calculate concentration of analyte in formulation or as an api by use of a (1%, 1cm), single point and double point standardization by uv spectrophotometer.											
CO2: Relate and construct linear regression analysis data for colorimetric assays and operate a colorimeter instrument.											
CO3: Record and calculate the concentration of an analyte by measure of fluorescence of an analyte in absence and presence of quenching agent.											
CO4: Understand the sample preparation technique for hplc and gc.											

Course Outcomes (COs):

Course: Social and Preventive Pharmacy - [BP802T] Term: 8 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
C01	2		1								
C02	2										
C03	1					1					



Anjuman-I-Islam, Mumbai
 Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
 Department of AIKTC School of Pharmacy

C04	1					1		1		
C05	2					1		1		

C01: Recognize the concepts and evaluation of public health in relation to disease, deficiencies and it's preventions for nutrition, socio-cultural factors and hygiene

C02: Explain the principles on the prevention and control of communicable and non-communicable diseases.

C03: Identify national health programs with its objectives, functioning and outcomes

C04: Discuss national health intervention program for family and social welfare and role of who in it

C05: Describe the community services in rural, urban and school health with respect to sanitation, health promotion and education

Course Outcomes (COs):

Course: Pharmacovigilance - [BP805ET] Term: 8 - Semester

CO	01	02	03	04	05	06	07	08	09	10	11
C01	2							1	1		
C02	2					1		1	1		
C03	2					1		1			
C04	2					1		1			
C05	2					1		1			
C06	2					1		1			

C01: Discuss the importance of drug safety monitoring and the development of pharmacovigilance program with its prevalence in different setups and the terminologies used

C02: Identify the different facets of adr along with pharmacogenomics of it in normal as well as in special populations with their relation to pharmacovigilance methods for drug evaluation

C03: Apply knowledge of international standards for classification of diseases and drug

C04: Describe the development and establishment of the pharmacovigilance program in an organization

C05: Recognize various methods of drug safety surveillance and communication in pharmacovigilance

C06: Explain the methods to generate safety data during the phases of clinical trial and recognize the role of ich and gcp guidelines.



Anjuman-I-Islam, Mumbai
 Anjuman-I-Islam's Kalsekar Technical Campus, New Panvel
 Department of AIKTC School of Pharmacy

Course: Cosmetics - [BP809ET] Term: 8 - Semester											
CO	01	02	03	04	05	06	07	08	09	10	11
CO1	3	1									
CO2	3	1									
CO3	3	1									
CO4	3	1									
CO5	3	1									
CO6	3	1									

Course Outcomes (COs):

CO1: Describe and summarize history ,regulatory aspects and excipients in cosmetics industry.

CO2: Understand the anatomy of skin and hair and problems associated with oral cavity

CO3: Explain the building blocks of skin and hair products,oral hygiene based products,anti-perperspirants and syndet soap bars

CO4: Elaborate on role of various herbs in skin,hair and oral care products

CO5: Discuss different principles of cosmetic evaluation and bis specifications of certain cosmetics.

CO6: Elaborate on various skin and hair associated problems related to cosmetics.