



Samarth Rural Educational Institute's  
**SAMARTH INSTITUTE OF PHARMACY, BELHE.**

Approved by P.C.I. New Delhi, D.T.E., Govt. of Maharashtra &  
Affiliated to D.B.A.T.U. Lonere & M.S.B.T.E. Mumbai.  
On Kalyan Nagar Highway A/P-Belhe, Tal- Junnar, Dist-Pune Pin: 412410  
Email:samarthiop@gmail.com, Web: iop.sreir.org

## **SEMESTER-III**

**Subject: PHARMACEUTICAL ORGANIC CHEMISTRY-II**

**Subject Code: BP301T**

<b>Course Outcome</b>	<b>Description</b>
<b>BP301.1.</b>	To understand preparation and reactions of some organic compounds. Reactivity of organic compounds are also studied here. The syllabus emphasizes on mechanisms and orientation of reactions. Chemistry of fats and oils are also included in the syllabus.
<b>BP301.2.</b>	To write the structure, name and the type of isomerism of the organic compound
<b>BP301.3.</b>	To write the reaction, name the reaction and orientation of reactions
<b>BP301.4.</b>	To account for reactivity/stability of compounds,
<b>BP301.5.</b>	To prepare organic compounds

**Subject: PHYSICAL PHARMACEUTICS-I**

**Subject Code: BP302T**

<b>Course Outcome</b>	<b>Description</b>
<b>BP302.1.</b>	To study various physical and physicochemical properties, and principles involved in dosage forms/formulations.
<b>BP302.2.</b>	To learn theory and practical components of the subject help the student to get a better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.
<b>BP302.3.</b>	To understand various physicochemical properties of drug molecules in the designing the dosage forms
<b>BP302.4.</b>	To know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations
<b>BP302.5.</b>	To demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.

**Subject: PHARMACEUTICAL MICROBIOLOGY**

**Subject Code: BP303T**

<b>Course Outcome</b>	<b>Description</b>
<b>BP303T.1</b>	To study of all categories of microorganisms especially for the production of alcohol antibiotics, vaccines, vitamins enzymes etc..
<b>BP303T.2</b>	To understand methods of identification, cultivation and preservation of various microorganisms
<b>BP303T.3</b>	To understand the importance and implementation of sterilization in pharmaceutical processing and industry
<b>BP303T.4</b>	To learn sterility testing of pharmaceutical products.
<b>BP303T.5</b>	To Carry out microbiological standardization of Pharmaceuticals.
<b>BP303T.6</b>	To understand the cell culture technology and its applications in pharmaceutical industries.



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**Subject: PHARMACEUTICAL ENGINEERING**

**Subject Code: BP304T**

<b>Course Outcome</b>	<b>Description</b>
BP304T.1	To impart a fundamental knowledge on the art and science of various unit operations used in pharmaceutical industry.
BP304T.2	To know various unit operations used in Pharmaceutical industries.
BP304T.3	To understand the material handling techniques.
BP304T.4	To perform various processes involved in pharmaceutical manufacturing process.
BP304T.5	To carry out various test to prevent environmental pollution.
BP304T.6	To appreciate and comprehend significance of plant lay out design for optimum use of resources.
BP304T.7	To appreciate the various preventive methods used for corrosion control in Pharmaceutical industries.

**Subject: PHARMACEUTICAL ORGANIC CHEMISTRY-II Subject Code: BP305P**

<b>Course Outcome</b>	<b>Description</b>
BP305P.1	To understand practical aspects of recrystallization and distillation techniques.
BP305P.2	To synthesize pharmaceutically important organic compounds using various organic reactions.

**Subject: Pharmaceutics-I**

**Subject Code: BP306P**

<b>Course Outcome</b>	<b>Description</b>
BP306P.1	To understand practical aspects of various important parameters required during development of various pharmaceutical dosage forms.
BP109P.2	To understand use of important physical parameters in developing formulation.

**Subject: PHARMACEUTICAL MICROBIOLOGY Subject Code: BP307P**

<b>Course Outcome</b>	<b>Description</b>
BP307P. 1	To understand hands on training on sterilization techniques in pharmaceutical processing and industry
BP307P. 2	To learn Sub culturing of bacteria and fungus, Nutrient stabs and slants preparations and staining methods.

**Subject: Pharmaceutical Inorganic Chemistry**

**Subject Code: BP308P**

<b>Course Outcome</b>	<b>Description</b>
BP308P. 1	To understand practical aspects of various unit operations and processes carried out during development of various pharmaceutical dosage forms.
BP110P. 2	To gain knowledge of the newer techniques and pharmaceutical process parameters and operations



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## **SEMESTER-IV**

**Subject: PHARMACEUTICAL ORGANIC CHEMISTRY-II**

**Subject Code: BP401T**

<b>Course Outcome</b>	<b>Description</b>
BP401.1.	Explain the stereo chemical aspects of organic compounds and stereo chemical reactions in Optical isomerism.
BP401.2.	Understand the methods of preparation and properties of organic compounds
BP401.3.	Know the medicinal uses and other applications of organic compounds.
BP401.4.	To Study reaction mechanism of some name reactions.
BP401.5.	Explain the stereo chemical aspects of organic compounds and stereo chemical reactions in Geometric isomerism.

**Subject: PHARMACEUTICAL ORGANIC CHEMISTRY-II**

**Subject Code: BP406T**

<b>Course Outcome</b>	<b>Description</b>
BP406P.1	To understand practical aspects of preparation of various pharmaceutically important drugs and intermediates
BP406P.2	To perform assays of pharmaceutically important drugs using various titrimetric methods

**Subject: MEDICINAL CHEMISTRY - I Subject Code: BP402T**

<b>Course Outcome</b>	<b>Description</b>
BP402.1.	Understand history and basic principles, physicochemical properties of Medicinal Chemistry.
BP402.2.	Learn classification, mechanism of action, structure activity relationship and uses of drugs acting on Autonomic nervous system.
BP402.3.	Study of classification, mechanism of action, Structure activity relationship and uses of drugs acting on Central Nervous System
BP402.4.	Study of centrally and peripherally acting analgesic drugs.

**Subject: PHARMACEUTICAL MICROBIOLOGY Subject Code: BP407P**

<b>Course Outcome</b>	<b>Description</b>
BP407P.1	Explain principal & Synthesize various drugs/ drug intermediates along with its recrystallization with the help of physical properties
BP407P.2	Demonstrate the assay of various drug as per pharmacopoeia
BP407P.3	Determine partition coefficient of drug



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**Subject: Physical Pharmaceutics -II      Subject Code: BP403T**

Course Outcome	Description
BP403T.1	Know the types properties, purification, stabilization & application of colloids in formulation
BP403T.2	Illustrate the different types of flow in order to identify & choose suitable characteristics for the formulation & study of deformation of solids
BP403T.3	Demonstrate the behavior, physiochemical properties, mechanism of drugs & excipients in formulation, development & evaluation of dosage form.
BP403T.4	Understand the properties of particles & pharmaceutical powder, their significance in formulating pharmaceutical products & the common method of characterizing these properties & application in Pharmacy.
BP403T.5	Distinguish the principle of chemical kinetics & use them for stability testing determination of expiry date of formulation.

**Subject: Physical Pharmaceutics -II      Subject Code: BP407P**

Course Outcome	Description
BP407P.1	Student should able to understand various physico chemical properties of powder, liquid , in designing the dosage form
BP407P.2	Students should be able to explain physico chemical properties in the formulation and development and evaluation of dosage forms
BP407P.3	Students should be able to identify and describe various instrument handling technique.
BP407P.4	students should be able to explain principle of chemical kinetics and to use them for stability of drug

**Subject: Pharmacology -I      Subject Code: BP404T**

Course Outcome	Description
BP404T.1	Understand the pharmacological actions of different categories of drugs.
BP404T.2	Explain the mechanism of drug action at organ system/ subcellular/ macromolecular level macro molecular levels.
BP404T.3	Basic pharmacological knowledge in the prevention and treatment of various diseases.
BP404T.4	Observe the effect of drugs on animals by simulated experiments.
BP404T.5	Appreciate correlation of pharmacology with other biomedical sciences.

**Subject: Pharmacology -I      Subject Code: BP408T**

Course Outcome	Description
BP408P.1	To understand the pharmacological actions of different categories of drugs.
BP408P.2	To study in detailed about mechanism of drug action at organ system/sub cellular/



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	macromolecular levels.
BP408P.3	To understand the application of basic pharmacological knowledge in the prevention and treatment of various diseases.
BP408P.4	To observed the effect of drugs on animals by simulated experiments.

**Subject: Pharmacognosy and Phytochemistry-I Subject Code: BP405T**

Course Outcome	Description
BP405T.1	To Understand basic knowledge of fundamentals of Pharmacognosy & To know the evaluation techniques & quantitative microscopy of herbal drug.
BP405T.2	To know the techniques in the cultivation, processing & production of crude drugs.
BP405T.3	Describe the concept of plant tissue culture.
BP405T.4	Understand & inculcate knowledge of Traditional system of medicine & Secondary metabolites.
BP405T.5	To understand knowledge of Primary metabolites.

**Subject: Pharmacognosy and Phytochemistry-I Subject Code: BP409P**

Course Outcome	Description
BP409P.1	To perform analysis of crude drugs by chemical test.
BP409P.2	Determine Quantitative Microscopic measurement with the help of Camera Lucida.
BP409P.3	Able to determine size of cellular content by micrometry technique using eye piece micrometer.
BP409P.4	To perform Qualitative evaluation parameters of crude drugs.