



SILVER OAK UNIVERSITY

Silver Oak Institute of Science

Bachelor of Science Physics

Course Name: Pharmaceutical Products

Course Code: 2050263103

Semester: 1st

Prerequisite:

1. Basic knowledge of significance of quality in Pharmaceutical Chemistry.

Course Objectives:

1. To make students understand the quality in pharmaceutical chemistry and overall pharmaceutical process.
2. To equip them with basic computing skills that will enhance their employability in general.

Teaching Scheme:

Teaching Scheme				
L	T	P	Contact Hours	Credit
4	0	0	4	4

Contents:

Unit	Topics	Teaching Hours	% Weightage
1	<p>Introduction to Pharmaceutical: History of the profession of Pharmacy in India in relation to Pharmacy education, industry, pharmacy practice, and various professional associations. Pharmacopoeia: Introduction to IP, BP, USP, NF and Extra Pharmacopoeia. Salient features of Indian Pharmacopoeia Packaging materials: Types, selection criteria, advantages and disadvantages of glass, plastic, metal, rubber as packaging materials Pharmaceutical aids: Organoleptic (Coloring, flavoring, and sweetening) agents Preservatives: Definition, types with examples and uses.</p>	14	25
2	<p>Unit Operations: Definition, objectives/applications, principles, construction, and workings of: Size reduction: hammer mill and ball mill Size separation: Classification of powders according to IP, Cyclone separator, Sieves and standards of sieves Mixing: Double cone blender, Turbine mixer, Triple roller mill and Silvers on mixer homogenizer Filtration: Theory of filtration, membrane filter and sintered glass filter Drying: working of fluidized bed dryer and process of freeze drying Extraction: Definition, Classification, method and applications</p>	14	25
3	<p>Basic structure, layout, sections, and activities : of pharmaceutical manufacturing plants Quality control and quality assurance: Definition and concepts of quality control and quality assurance, current good manufacturing practice (GMP), Introduction to the concept of calibration and validation.</p>	14	25

4	Tablets – coated and uncoated, various modified tablets: (sustained release, extended-release, fast dissolving, multi layered.) Capsules - hard and soft gelatine capsules Liquid oral preparations - solution, syrup, elixir, emulsion, suspension, dry powder for reconstitution Topical preparations - ointments, creams, pastes, gels, liniments and lotions, suppositories, and pessaries Powders and granules - Insufflations, dusting powders, effervescent powders, and effervescent granules ,3 Sterile formulations – Injectables, eye drops Immunological products: Sera, vaccines, toxoids, and their manufacturing methods.	14	25
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Course Outcomes:

Sr. No.	CO Statement	Unit
CO-1	Understand the fundamentals of Pharmaceutics.	1
CO-2	Identify the different dosage forms and their formulation aspects.	2
CO-3	Realize the advantages, disadvantages, and quality control tests of different dosage forms.	3
CO-4	Learn the various forms of and preparative methods for pharmaceutical products.	4

Teaching & Learning Methodology:

1. Problem based learning
2. Experiment centric teaching methods
3. Competency based learning
4. Cooperative based learning

Books Recommended:

1. Dr. Harikishan Singh, History of Pharmacy in India
2. B.M. Mithal, Vallabh Prakashan. A Text book of Pharmaceuticals Formulation
3. Bentleys' Textbook of Pharmaceutics, Editor E.A. Rawlins, Elsevier Int.,.

List of Open-Source Software/learning website:

1. <http://silveroakuni.ac.in/video-lecture>

CO-PO-PSO Matrix:

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO-1	1	-	-	-	-	3	1	-	-	-	3	-	-
CO-2	2	-	-	-	-	2	1	-	-	-	3	-	-
CO-3	3	1	1	2	-	2	1	-	-	-	3	-	-
CO-4	3	1	1	2	-	3	1	-	-	-	3	-	-