

Course Code	Course Name	Credits
26CH954	SKILL DEVELOPMENT IN HOME AND PERSONAL CARE PRODUCT FORMULATION	02

Course Description

This course provides a comprehensive introduction to formulation science with special emphasis on home and personal care products. It covers the scientific principles, raw materials, safety regulations, and practical techniques involved in the preparation of products such as soaps, detergents, hand washes, candles, perfumes, and air fresheners.

Course Objectives

- This course aims to equip learners with hands-on skills and fundamental knowledge required for formulating a range of home and personal care products, including soaps, detergents, hand wash, candles, and perfumes.
- It is designed to foster an understanding of raw materials, safety practices, and production techniques while encouraging entrepreneurial thinking.
- The course also emphasizes quality control, hygiene standards, and sustainable practices.

Skill Enhancement Outcomes

On successful completion of this course, the learner will be able to:

- Develop practical formulation skills in the preparation of home and personal care products such as soaps, detergents, hand wash, candles, perfumes, and air fresheners using standard laboratory procedures.
- Apply the principles of formulation chemistry including saponification, surfactant action, emulsification, thickening, preservation, and fragrance blending in product development.
- Demonstrate safe laboratory and manufacturing practices by following hygiene standards, proper raw material handling, equipment uses, and legal safety regulations.
- Evaluate product quality parameters such as pH, stability, texture, fragrance retention, and packaging suitability for consumer use and market standards.

Course Content and Practical Training

- Lecture: Introduction to Formulation Science: Introduction to home and personal care products, Role of surfactants, emulsifiers, thickeners, and preservatives, Safety, hygiene, and legal regulations in manufacturing, Tools, equipment, and raw material handling.
- Experiment 1: Soap Making (Cold Process & Melt-and-Pour): Chemistry of soap: Saponification; Selection of oils, lye, additives, and fragrance; Step-by-step soap-making methods; Safety practices and troubleshooting; Curing, cutting, and packaging.
- Experiment 2: Detergent Powder and Liquid Making: Types of detergents and their uses; Role of builders, enzymes, optical brighteners; Formulation of detergent powder and liquid; Mixing, drying, and packaging techniques; Quality parameters and pH testing.
- Experiment 3: Hand Wash and Liquid Soap Preparation Ingredients: surfactants, thickeners, moisturizers, antimicrobials; Formulation techniques for gel and liquid hand washes; Fragrance addition and color stability; Bottling and labelling.
- Experiment 4: Candle Making: Types of candles: pillar, container, gel, scented; Wax types and wick selection; Color and fragrance addition; Molding and finishing techniques; Safety and fire standards.
- Experiment 5: Perfume and Air Freshener Making: Fragrance notes and composition; Essential oils and solvents; Blending techniques; Spray and roll-on preparations; Natural vs synthetic fragrances

Learning Outcome

Upon successful completion of this course, students will be able to formulate, prepare, and evaluate home and personal care products such as soaps, detergents, hand wash, candles, perfumes, and air fresheners by applying the principles of formulation science, safety standards, and quality control techniques.