

Programme code:	M.Sc	Programme Title :		Master of Chemistry	
Course Code:	23PCY2VA	Value Added Course: Entrepreneurial Ventures in Chemistry		Batch	2023-2025
				Semester	II / IV
Lecture Hrs/Week:	2	Total Hrs/Sem	30	Credits:	2

Course Objectives

- * To provide knowledge of household products to address the needs of chemical industry.
- * Able to synthesize house hold Cleaning agents, formulation of cosmeceuticals and hygiene products.
- * To enhance student sense of enthusiasm for chemistry and to involve them in an intellectually stimulating experience of learning in a supportive environment.
- * To impart knowledge on marketing approaches on studying consumer need, need gaps and global markets.

Employability

- * To provide worldwide opportunity to study household products.
- * Students have the opportunity to undertake an optional placement and enhance their entrepreneur skill by offering valuable experience.

Advantages

Students will be familiar with the different exposure of chemicals used in day to day life such as Cleaning agents, surfactants and Insect repellent one can design and practice ecofriendly cosmetics of their own.

Course Outcomes

- * To acquire basic information about the possibilities and limitations of household products, their importance and marketing.
- * To familiarize the authorized ingredients for household products, their origin, chemical nature and importance.
- * Develop new innovations in Chemical, pharmaceutical, cosmetics and allied chemical industries and successfully implement them at an industrial scale.
- * Hands on experience for manufacturing industries.

Units	Content	Hrs
Unit I	Cleaning agents: Soaps and detergents: Types (cationic and anionic), physical and chemical characteristics, advantages and disadvantages. Examples of Commercially available cleaning agents (shampoo, hand wash, face-wash)	6
Unit II	Disinfectants: Introduction, types, physical and chemical properties, classification (acids, alcohols, aldehydes, alkalis, halogens, phenols) Sanitizers: Sanitizers-Introduction, types, raw material used in making professional hand sanitizer with properties, WHO recommendations for hand sanitizers.	6
Unit III	Cosmetics: Oils, fats, and waxes - Introduction, physical and chemical properties, their use in cosmetics, Preservatives-Introduction, properties, types and their significance. Transition to Greener approach: Importance and Principles of Green Chemistry, bio-enzymes as disinfectants, green cosmetics-make up, shampoo, face pack, face mask, lipsticks.	12
	Practicals 1. Preparation of Soaps. 2. Preparation of liquid detergent using animal fat. 3. Preparation of Hand-Sanitizers. 4. Preparation of Disinfectants. 5. Preparation of cleaning agents using bio-enzymes.	6
	Total Contact Hrs	30

Pedagogy

Direct Instruction, Flipped Class, Digital Presentation

Assessment Methods:

Seminar, Quiz, Assignments, Group Task.

23PCYV01

Text Book

S.NO	AUTHOR	TITLE OF THE BOOK	PUBLISHERS \ EDITION	YEAR OF PUBLICATION
1	Takeo Mitsui	New Cosmetic Science	Elsevier Science Ltd.	1997
2	Sargin C.B	Cosmetic Science and Technology	Wiley India Pvt Ltd; 2 nd Edition	2008
3	Linda D.Rhein, Anthony O'Lenick.	Surfactants in personal care products and decorative cosmetics	CRC Press, 3 rd Edition.	2020

S.NO	AUTHOR	TITLE OF THE BOOK	PUBLISHERS \ EDITION	YEAR OF PUBLICATION
1	Kuo-Yann Lai	Liquid Detergents	CRC Press, 2 nd Edition	2020
2	Mylene Stedmen	Soap-Making Manual A Practical Handbook on the Raw Materials, Their Manipulation, Analysis and Control in the Modern Soap Plant(E-Book)	Dhanpat Rai Publishing Company, 15 th Edition	2018

118