

FACULTY OF SCIENCES

SYLLABUS FOR

CERTIFICATE COURSE

IN

CHEMISTRY FOR ENTREPRENEURSHIP AND PRODUCTION

Session: 2022-23



The Heritage Institution

KANYA MAHA VIDYALAYA JALANDHAR

(Autonomous)

Scheme of Studies and Examination

Certificate Course: Chemistry for Entrepreneurship and Production

Duration: 30 Contact hours

Credits: 1-0-1

Marks: 50

Eligibility: Senior Secondary, Undergraduate (B.Sc. (Medical/Non-Medical/Physics (Hons.)/ Bio-tech) and Post graduate students.

Method of Delivery: Theory and Practical

Examination pattern: Written and practical Exam

Course Code	Course Name	Course Type	Marks			Examination Time (hrs)
			Total	Ext.		
				L	P	
CCCM-1081	Chemistry for Entrepreneurship and Production	C	50	30	20	3
Total			50			

Chemistry for Entrepreneurship and Production

Programme Outcomes: Upon Completion of this course, the student will be able:

PO1: To understand importance of chemistry in daily life.

PO2: To develop better understanding and reasoning of facts.

PO3: To skill up various laboratory techniques used in pharmaceutical and chemical industries

PO4: hands on experience for manufacturing industries.

Certificate Course Title: Chemistry for Entrepreneurship and Production

Course Code: CCCM-1081

Time Allowed: 3 hrs
Credits: 1-0-1

Max Marks: 50
(Theory: 30, Practical: 20)

Unit 1 (6 hrs)

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)

Unit 2 (6 hrs)

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.

Unit 3 (6 hrs)

Cosmetics

Oils, fats, and waxes - Introduction, physical and chemical properties, their use in cosmetics, Preservatives-Introduction, properties, types and their significance.

Unit 4 (6 hrs)

Transition to Greener approach

Importance and Principles of Green Chemistry, bio-enzymes as disinfectants, green cosmetics-make up, shampoo, face pack, face mask, lipsticks.

Practicals: (6 hrs)

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.

Suggested Readings:

1. New Cosmetic Science by Takeo Mitsui
2. Cosmetic Science and Technology by Sargin C.B
3. Surfactants in personal care products and decorative cosmetics-Third edition by Linda D. Rhein, Anthony O'Lenick.
4. Handbook on Synthetic detergents by B.P. Sen.
5. Liquid Detergents, 2nd Edition by Kuo-Yann Lai.
6. Soap-Making Manual A Practical Handbook on the Raw Materials, Their Manipulation, Analysis and Control in the Modern Soap Plant (E-Book) by Mylene Stedmen.