



**Sarvodaya Kelavani Samaj managed,
Shri Manibhai Virani and Smt. Navalben Virani Science College
(Autonomous)**

(Affiliated to Saurashtra University, Rajkot)

Re-Accredited at 'A' Level by NAAC

STAR college Scheme & Status by MST-DBT

UGC-College with Potential for Excellence (CPE)

UGC-DDU KAUSHAL Kendra

GAAA –Grade A-1 by KCG, Government of Gujarat

GPCB-Government of Gujarat approved Environment Audit Center

Nodal Center for capacity building by GSBTM

Department of Chemistry

B.Sc. Chemistry

Transdisciplinary Elective

of

B. Sc. CHEMISTRY

(w.e.f. June 2021)

Department of Chemistry

Part II			
Transdisciplinary Elective-II			
For the students admitted from A.Y. 2021-22 onwards			
Offering Department:	Offered to:		
Chemistry	Students across the University for whom at least 80% of this course content is not covered in one or more courses, which are part of their regular curriculum.		
Semesters: IV-V (3 year program) / VI-VII (4 year program)			
Course Code	Course Title	Credit	Hr/Wk
	Chemistry in Everyday Life	2	2

Prerequisite:

Awareness about various types of diseases, drug-receptor interaction, SAR and basic knowledge of terminologies used in medicinal chemistry, Cleansing, Coloring and Cosmetic Chemistry

Course Objective:

This course aims to provide fundamental, classification & application of anticancer, anti-infections, cardiovascular and metabolic disorder drugs. Illustrate classification & synthesis of CNS acting agents, anti-inflammatory drugs and anesthetic agents to choose physical and chemical test for analysis of oils and fats; and categorize bio molecules with their source & structure. This course focuses on understanding the important the chemistry involved in the compound of the daily life. The course aims to address SDG-3: Good Health and Well-Being

Course Content:

Modules	Hours
<p>Module-I: Drugs and their Classification:</p> <ul style="list-style-type: none"> • Cancer and infectious diseases • Cardiovascular and metabolic diseases • Central Nervous system diseases • Analgesic and anti inflammatory drugs <ul style="list-style-type: none"> ➤ Non-steroidal anti-inflammatory drugs (NSAIDs) ➤ Antipyretic analgesics • Anesthetics drugs <ul style="list-style-type: none"> ➤ General Anesthetic ➤ Local Anesthetic 	7
<p>Module-II: Chemicals in food products:</p> <ul style="list-style-type: none"> • Introduction & type of food additives:- Preservatives, Antioxidants, Artificial sweeteners, Flavors and flavors enhancers, Stabilizers, Thickening and jelling agents • Pesticides: analysis of organophosphorous and organochlorine pesticide. • Determination of pesticide residues in grain, fruits, vegetables, milk and milk products. 	6

<ul style="list-style-type: none"> • Pigments and synthetic dyes: natural pigment – Carotenoids, Anthocyanin, flavones, Chlorophyll – their occurrence, characteristic properties • Permitted synthetic dyes & non-permitted synthetic dyes used by industries, Harmful effects of non-permitted dye 	
<p>Module-III: Cleansing Agents:</p> <p>Soap</p> <ul style="list-style-type: none"> • Introduction of soap • Cleaning Action of soap • Raw materials for manufacturing of soap • Soap Manufacturing <ul style="list-style-type: none"> ➤ Continuous process for the manufacture of soap ➤ Batch process for the manufacture of soap • Type of Soap • Advantages and disadvantage of soap <p>Detergent</p> <ul style="list-style-type: none"> • Introduction of detergent • Raw materials for manufacturing of detergent • Type of detergents • Detergent manufacturing • Advantages and disadvantage of detergents 	5
<p>Module-IV: Coloring Agents:</p> <ul style="list-style-type: none"> • Introduction of Coloring Agent • Era of natural dyes • Era of synthetic dyes • Classification of dyes according to application <ul style="list-style-type: none"> ➤ Acid dyes. ➤ Basic or cationic dyes. ➤ Direct dyes ➤ Azoic dyes ➤ Vat dyes. • Classification of dyeing <ul style="list-style-type: none"> ➤ Direct dyeing ➤ Vat dyeing ➤ Mordant dyeing ➤ Disperse dyeing 	6
<p>Module-V: Chemistry of Cosmetic Materials:</p> <ul style="list-style-type: none"> • Classification of cosmetic • Cosmetic for Skin <ul style="list-style-type: none"> ➤ Function of Skin ➤ Composition of Skin ➤ Cleansing cream ➤ White, emulsified cold cream 	6

<ul style="list-style-type: none"> ➤ Liquefying cleansing creams ➤ Face Powders • Cosmetic for Dental <ul style="list-style-type: none"> ➤ Dental care preparation ➤ Tooth pastes • Cosmetic for Hair <ul style="list-style-type: none"> ➤ Function of hair ➤ Shampoos 	
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Pedagogic Tools:

1. Chalk & Talk
2. PPTs & Videos
3. Assignments
4. Group discussion

Reference Books:

1. RSC Food Analysis Monographs, edited by: Peter Belton and Roger Wood, RSC Publication, Print ISSN:1757-7098
2. Chemical Analysis of Food: Techniques and Application, 1st Edition by Y Pico; 2012, Elsevier; ISBN:9780123848635
3. Ashutosh Kar (2018, 7th Edition), Medicinal Chemistry. New Age International (P) Ltd. (ISBN: 978-9386649720)
4. Chemical formulation an overview of surfactant – based preparation used in everyday life – Tony Hargreave, Royal Society of Chemistry, 2003
5. Cosmetic and Toiletry Formulations - Vol. 2, Ernest W. Flick, Noyes Publication

Suggested MOOCs:

1. <https://nptel.ac.in/>
2. <https://nptel.ac.in/>
3. <https://in.coursera.org/>

Methods of Assessment & Tools:

Components of CIA: 100 marks

Sr.	Component	Content	Duration (if any)	Marks
1	Attendance	---	---	10
2	Assignment-1	---	---	10
3	Assignment-2	---	---	10
4	Test-1	Module I & II	1.5 Hours	20 (set for 30)
5	Test-2	Module I to V	2.5 Hours	50 (set for 50)
			Total	100