

ROLE OF CHEMISTRY IN EVERYDAY LIFE

Semester	Subject Code	Category	Lecture hours		Theory hours		Practical hours		Credits
			Per week	Per sem.	Per week	Per sem.	Per week	Per sem.	
III	21SCH3A	Skill based-I	2	30	2	30	-	-	2

COURSE OBJECTIVES:

The students will be able to

- Gain knowledge about the role of Chemistry in various fields in everyday life such as nutrients and food adulterants, organic pharmaceutical aids, dyes and fuels, applications of NPK fertilizers, soaps and detergents.

COURSE OUTCOMES:

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Understand about the importance of food and nutrition as well detection of food adulterants.	K4
CO2	Know about the biological role of organic pharmaceutical aids and lipids.	K2
CO3	Understand about applications of dyes and fuels.	K4
CO4	Gain knowledge about the applications of NPK fertilizers and some first aids.	K4
CO5	Learn about the preparation of cosmetics, toiletries, soaps and detergents.	K4

*CO – Course Outcomes

Knowledge Level: K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze.

MAPPING WITH PROGRAMME OUTCOMES:

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	S	S	M
CO2	S	S	M	M	S	S
CO3	S	S	M	S	S	S
CO4	S	S	S	S	S	S
CO5	S	S	S	S	S	S

(S – Strong; M – Medium; L – Low)

UNIT-I: Nutrients and Adulterants

6 Hours

- 1.1 Food and Nutrition: Carbohydrates, Proteins, Fats, Minerals (Na, K, Fe) and Vitamins – Definitions, sources and their physiological importance – Balanced diet.
- 1.2 Adulterants: Definition – Identification of adulterants present in milk, ghee, oil, coffee powder, tea, asafoetida, chilli powder, pulses and turmeric powder.

UNIT-II: Organic Pharmaceutical Aids and Lipids

6 Hours

- 2.1 Organic pharmaceutical aids: Definition, uses and examples of preservatives, antioxidants, colouring, flavouring and sweetening agents.
- 2.2 Lipids: Definition – Classification – Functions and significance of fatty acids – Saturated and unsaturated fatty acids – Significance of unsaturated fatty acids – Biological importance of fatty acids – Cholesterol – Biological importance – Classification of oils - saponification value and Iodine number.

UNIT-III: Dyes and Fuels

6 Hours

- 3.1 Dyes: definition – Terms used – Chromophore, chromogen, auxochrome – Bathochromic and hypsochromic shifts – Hyperchromic and hypochromic effects– Classification of Dyes based on applications – Preparation and uses of methyl orange, triphenyl methane dyes and malachite green.
- 3.2 Fuels: Definition – Classification – Solid, liquid and gaseous fuels - Requirements of a good fuel – Composition and uses of LPG, gohar gas, water gas and natural gas.

UNIT-IV: Fertilizers and First Aid

6 Hours

- 4.1 Fertilizers: Fertilizers used as natural sources – Urea, NPK and super phosphates – Need, uses and hazards.
- 4.2 First aid: Definition – Treatments for Cuts and Wounds – Burning – Eyes affected by chemicals – Poisonous gas and vapours – Fire in the Laboratory – Caustic Alkali falls on cloth – Swallowing of poisonous substances.

UNIT-V: Cosmetics and Toiletries

6 Hours

- 5.1 Cosmetics: Composition and formulation of cream: Crack cream, Anti-aging cream, Moisturising cream, perfume, Talcum powder, deodorants, shampoos, eye liner and nail polish.
- 5.2 Toiletries: Soap – Classification – Toilet soap – Industrial soap – Detergents – Surfactants – Classification with an example – Builders – Example – Composition and formulation of toilet cleaner, cleaning powder, hand wash and floor cleaner.

Demonstration experiments:

- Preparation of Hand wash
- Preparation of Toilet soap
- Preparation of Eye liner
- Preparation of sanitizers
- Preparation of Crack cream
- Preparation of Anti-aging cream
- Identification of adulterants in some common food items like asafoetida, chilli powder, pulses and turmeric powder.

TEXT BOOKS:

S. No.	Authors	Title	Publishers	Year of publication
1.	B. Srilakshmi	Food Science	New age International Publishers	2005
2.	Jayashree Ghosh	Fundamental Concepts of Applied Chemistry	S. Chand and Co. Ltd., New Delhi	2009

REFERENCE BOOKS:

S. No.	Authors	Title	Publishers	Year of publication
1.	B. K. Sharma	Industrial Chemistry	Goel Publishing house, Meerut	2011
2.	L. H. Meyer	Food Chemistry	CBS publishers and distributors	2004
3.	André O. Barel, Marc Paye and Howard I. Maibach	Handbook of Cosmetic Science and Technology	S. Chand and Co. Ltd., New Delhi	2010
4.	K. Bagavathi Sundari	Applied Chemistry	MJP publishers	2006
5.	Ernest W. Flick	Cosmetic and Toiletry Formulations	Noyes Publications	1992

TEACHING METHODOLOGY:

- Chalk and Board
- Power Point Presentations
- Assignments
- Animated videos
- Internet sources
- Demonstrations
- Group project