

DEPARTMENT OF CHEMISTRY				CLASS: II UG				
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
IV	NME	20U4CNM2	Chemistry in Everyday life	2	2	25	75	100

Nature of Course				
Knowledge and skill			Employability oriented	
Skill oriented	✓		Entrepreneurship oriented	

Objectives: *The objective of this course is to make the student*

- (i) *To create awareness about the various chemical industries*
- (ii) *To know elementary concepts of chemistry about dairy and textile industries*
- (iii) *To give exposure about basic process of leather industry*
- (iv) *To learn about food spoilage. Processing and their nutritional importance*
- (v) *To gain knowledge of few popular Medicinal plants and their medicinal uses*

Unit	Description	Hours	K-Level	CLO
I	Unit – I: Dairy Chemistry Milk- lipids-terminology only General composition of milk - factors affecting the gross composition of milk, physio-Chemical change taking place during -boiling pasteurization- sterilization and homogenization.	6	K2	CLO-1
II	Unit – II: Textile Chemistry General classification of fibers-, production (outline procedure only), properties and uses of the following natural fibers - natural cellulose fibers - (cotton and jute) natural protein fiber - (wool and silk) - synthetic fibers (Rayon and nylon)	6	K2	CLO-2
III	Unit – III: Leather Chemistry Leather Definition Curing, preservation and tanning of hides and skins, process of dehairing and dyeing. Treatment oftannery effluents. homogenization	6	K2	CLO-3
IV	Unit – IV: Food Chemistry Food spoilage, courses of food spoilage, types of Food spoilage, food preservation, and processing by heating- sterilization and pasteurization. Adulteration in foods – milk, tea, coffee and turmeric.	6	K2	CLO-4
V	Unit-V: Medicinal chemistry Various sources of drugs, pharmacologically active constituents in plants - Indian medicinal important of plants – tulsi, neem, keezhanelli – Classification of drugs based on biological and chemical uses - Examples: Paracetamol, Dettol and aspirin (structure and preparation not needed)	6	K2	CLO-5

Books for Study:

1. Text Book of Applied Chemistry- K.Kapur. New Delhi: H.TataPublications,1994
2. Industrial Chemistry by O P Vermani new age international (p)limited
3. B.K. Sharma - Industrial Chemistry – (Goel Publishing House,Meerut)

Books For reference:

1. Principles of Dairy Chemistry-Robert Jenness & S.Patorm.. John Wiley & Sons Inc (1 December 1959);
2. Textile Chemistry –Vol .IIR. H.Peters, Elsevier, Avesterdam.
3. S. Lakshmi Pharmaceutical Chemistry, S.Chand& Sons, New Delhi,2004
4. P. Parimoo, — A Text Book of Medicinal Chemistry, CBS publishers,New Delhi, 2006
5. Seema Yadav: —Food Chemistry, Anmol publishing (P) Ltd ,New Delhi
6. Sivasankar – Food Processing and Preservation PHI.(Eastern Economy Editions).

Web Resources:

1. <http://www.agrimoon.com/wp-content/uploads/CHEMISTRY-OF-MILK.pdf>
2. <http://library.umac.mo/ebooks/b28050332.pdf>
3. <http://www.agrimoon.com/wp-content/uploads/Food-Chemistry.pdf>
4. <https://nzic.org.nz/app/uploads/2017/10/5C.pdf>
5. https://www.academia.edu/36903466/An_Introduction_to_Medicinal_Chemistry_Fifth_Edition-_Graham_L._Patrick

Rationale for Nature of the course

This course will enable the students to get exposure on industries of dairy and textile products. Further the course will enable the students to know the principles of combustion and gain the basic knowledge about food chemistry, medicinal plants. It helps to know the various techniques involved in processing the food, medicine, leather and textile products.

Activities having direct bearing on Knowledge and Skill / Skill oriented / Employability Oriented/ Entrepreneurship Oriented

- Practical classes on pasteurization
- Field visit to nearby textile and milk industry.
- Hands on training will be given to identify adulteration

Pedagogy

- Chalk-Talk class room activities
- Group Discussion
- Seminar/Assignment
- Quiz through ICT- Mode

Lesson Plan

Unit	Descriptions	Hours	Lecture Mode
Unit – I: Dairy industry			
1	Milk lipids-terminology and definitions only General composition of milk	2	BB
2	Factors affecting the gross composition of milk,	2	BB/PPT
3	Physio-Chemical change taking place during - boiling pasteurization- sterilization and homogenization.	2	BB
Unit – II: Textile Chemistry			
1	General classification of fibers-, production (outline procedure only	2	BB/PPT
2	properties and uses of the following natural fibers (a) natural cellulose fibers (cotton and jute)	2	BB/ PPT
3	(b) natural protein fiber(wool and silk).and	1	BB /PPT
4	(c)synthetic fibers (Rayon and nylon)	1	BB/PPT
Unit – III: Leather industry			
1	Leather: Definition Curing, preservation and tanning of hides and skins,	3	BB
2	Process of dehairing and dyeing. Treatment of tannery effluents.	3	BB/PPT
Unit – IV: Food Industry			
1	Food spoilage, courses of food spoilage, types of Food spoilage,	2	BB/PPT
2	Food preservation, preservation and processing by heating- sterilization, pasteurization.	2	BB/PPT
3	Sources , requirement deficiency diseases of A, D, E, K , B and C	2	BB/PPT
Unit-V: Medicinal chemistry			
1	Various sources of drugs, pharmacologically active constituents in plants	2	BB/PPT/Animated Videos
2	Indian medicinal plants – tulsi, neem, keezhanelli – their importance	2	BB/PPT/Animated Videos
3	Classification of drugs based on biological and chemical uses - Examples: Paracetamol, Dettol and aspirin (structure and preparation not needed)	2	BB/PPT/Animated Videos
Total Hours		30	

BB-Block board/Chalk and Talk

PPT-Power point presentation

Course learning outcome: After complete successful of this course, the student will be able to

CLOs	CLO Statement	Knowledge level
CLO1	Understand basic concepts of milk	Up to K2
CLO2	Know the general properties of fibers and their uses	Up to K2
CLO3	Study the preparation and processing of leather	Up to K2
CLO4	Understanding of food spoilage , food preservation and vitamins	Up to K2
CLO5	Gain the knowledge of medicinal plants and drug interaction	Up to K2

PO and CLO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5
CLO1	2	1	1	1	2
CLO2	2	1	1	1	2
CLO3	2	1	1	2	2
CLO4	2	1	1	1	2
CLO5	2	1	1	2	2

3-Strong correlation; 2-Medium correlation; 1-Weak Correlation

PLO and CLO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
CLO1	1	2	-	2	-	3	-
CLO2	1	2	-	2	-	3	-
CLO3	1	2	-	2	-	3	-
CLO4	1	2	-	2	-	3	-
CLO5	1	2	-	2	-	3	-

3-Advance application; 2-Intermediate level; 1-Basic level

Learning Outcome Based Education (LOBE) & Assessment Formative Examination - I & II -Blue Print Articulation Mapping - K Levels with Course Outcomes (CLOs)

S.No.	CLOs	K- Level	Section A		Section B (Either/or Choice)	Section C (Open Choice)
			Short Answers			
			No. of Questions	K- Level		
1	CLO x	Up to K 2	2	K1, K1	2 (K2 &K2)	1(K1)
2	CLO y	Up to K 2	3	K1, K1,K1	2 (K2 &K2)	2(K1, K1)
No. of Questions to be asked			5		4	3
No. of Questions to be answered			5		2	2
Marks for each question			2		5	10
Total Marks for each section			10		10	20

K1- Remembering and recalling facts with specific answers

K2- Basic understanding of facts and stating main ideas with general answers.

Learning Outcome Based Education (LOBE) & Assessment
Summative Examination – Blue Print
Articulation Mapping-K Levels with Courses Learning Outcomes (CLOs)

Units	CLOs	K- Level	Section A		Section B		Section C (open Choice)
			Short answers		(Either/or Choice)		
			No. of Questions	K- Level	No. of Questions	K- Level	
1	CLO 1	Up to K 2	1	K1	2	(K2&K2)	1(K1)
2	CLO 2	Up to K 2	1	K1	2	(K2&K2)	1(K1)
3	CLO 3	Up to K 2	1	K1	2	(K2&K2)	1(K1)
4	CLO 4	Up to K 2	1	K1	2	(K2&K2)	1(K1)
5	CLO 5	Up to K 2	1	K1	2	(K2&K2)	1(K1)
No. of Questions to be asked			5		10		5
No. of Questions to be answered			5		5		3
Marks for each question			2		7		10
Total Marks for each section			10		35		30

K1- Remembering and recalling facts with specific answers

K2- Basic understanding of facts and stating main ideas with general answers.

Distribution of Section-wise marks with K-levels

K Levels	Section A (No Choice)	Section B (Either / or)	Section C (Open Choice)	Total Marks	% of Marks without choice	Consolidated
K1	10		50	60	46	46
K2	-	70		70	54	54
Total marks	10	70	50	130	100	100

Name of the course Designer

- Prof .S. Selvakumar