HAJEE KARUTHA ROWTHER HOWDIA COLLEGE

(An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai.)

Uthamapalayam, Theni District. Pin Code: 625 533.

DEPARTMENT OF CHEMISTRY

PART – IV NME CHEMISTRY

SYLLABUS

Choice Based Credit System – CBCS

(As per TANSCHE/MKU Guidelines)

(Academic Year 2020 -2021 onwards)

Details of Course Category, Code, Credits & Title

Course Category	Course Code	Course Title	Hrs	CIAE	TEE	Max. Marks	Credits
Semester - I							
Part – IV							
NME - I	20UCHN11	Chemistry in Every Day Life-I	2	25	75	100	2
Semester – II							
Part – IV							
NME - II	20UCHN21	Chemistry in Every Day Life-II	2	25	75	100	2

Course Code	Course Title	Category	Total Hours	Credits
20UCHN11	Chemistry in Every Day Life-I	NME-I	30	2

Nature of Course	
Knowledge Oriented	✓
Skill Oriented	✓
Employability Oriented	✓
Entrepreneurship Oriented	

Course Relevance	
Local	
Regional	
National	
Global	✓

Preamble

To gain knowledge about dyes, cosmetics, insecticides, pesticides, polymers and nuclear power plants.

Syllabus

UNIT I 6 Hours

Dyes and Dyeing process: Difference between dye and pigment, Witt's colour theory, classification of dyes based on application (Direct, Vat, Acid, Reactive, Mordant and Disperse)

UNIT II 3 Hours

Cosmetics: Preparation of washing Powder, Cleaning Powder, soap oil, shampoo, liquid blue, face powder and pain balm.

UNIT III 9 Hours

Insecticides and Pesticides: Definition – Classification – pest control methodsInorganic Pesticides- Lead Arsenate, sodium fluoride, mercurous chloride, organic pesticides – Synthetic - DDT –BHC-Malathion- Fungicides – Bordeaux Mixturerepellants – Adverse effects and preventing methods of using pesticide.

UNIT IV 8 Hours

Polymer chemistry: Polymers - definition - Natural rubber – composition of natural rubber - Synthetic rubber- Neoprene and SBR.– polyethylene – PVC – Teflon - Polyester – Bakelite, urea formaldehyde, Nylon-66.

UNIT V 4 Hours

Nuclear power plants: Nuclear power plants in India- energy production - principle of nuclear fission and atom bomb- principle of nuclear fusion and hydrogen bomb–hazards of nuclear power plants (Chernobyl disaster).

- Visit to various Industries and submission of report - 5 marks (Internal)

Reference Books

B.K. Sharma, ***Industrial Chemistry***, Goel Publishing House, Meerut

K. BagavathiSundari, ***Applied Chemistry***, MJP Publishers, Chennai, 2006, First edition

Pedagogy

Chalk & Talk, E-Resources, Group Discussion

Teaching aids

Black Board, LCD Projector

Course Contents and Lecture Schedule

Module No.	Topic	No. of Lectures	Content Delivery Methods
UNIT - I			
1.1	Difference between dye and pigment, Witt's colour theory,	3	E-Resources
1.2	classification of dyes based on application (Direct, Vat, Acid, Reactive, Mordant and Disperse)	3	E-Resources
UNIT - II			
2.1	Preparation of washing Powder, Cleaning Powder, soap oil, shampoo, liquid blue, face powder and pain balm	3	E-Resources
UNIT - III			
3.1	Insecticides and Pesticides: Definition – Classification – pest control methodsInorganic Pesticides	3	E-Resources
3.2	Lead Arsenate, sodium fluoride, mercurous chloride, organic pesticides – Synthetic - DDT – BHC - Malathion	3	E-Resources
3.3	Fungicides – Bordeaux Mixturerepellants – Adverse effects and preventing methods of using pesticide	3	Chalk & Talk
UNIT - IV			
4.1	Natural rubber – composition of natural rubber - Synthetic rubber- Neoprene and SBR.	4	E-Resources
4.2	Polymers- definition – polyethylene – PVC – Teflon - Polyester – Bakelite, urea formaldehyde, Nylon-66.	4	Chalk & Talk

UNIT - V			
5.1	Nuclear power plants in India - energy production	1	E-Resources
5.2	Principle of nuclear fission and atom bomb	1	Chalk & Talk
5.3	Principle of nuclear fusion and hydrogen bomb	1	E-Resources
5.4	Hazards of nuclear power plants (Chernobyl disaster).	1	E-Resources
	Total	**30**	

Course Designer
Dr. K. Shahul Hameed
Assistant Professor of Chemistry

Course Code	Course Title	Category	Total Hours	Credits
20UCHN21	Chemistry in Every Day Life-II	NME-II	30	2

Nature of Course	
Knowledge Oriented	✓
Skill Oriented	✓
Employability Oriented	✓
Entrepreneurship Oriented	

Course Relevance	
Local	
Regional	
National	
Global	✓

Preamble

To be familiar with health and hygiene, food, drugs and its uses, antibiotics, vitamins and water pollution.

Syllabus

UNIT I 6 Hours

Health: Definition - Food Pyramid – Health – Hygiene - mal, under and over nutrition, their causes and remedies, sanitation.

UNIT II 6 Hours

Food chemistry: Food - classification and functions - Digestion in mouth, stomach and intestine. Absorption - spoilages, preservation techniques (canning, dehydration, freeze-drying. salting, pickling, pasteurizing, fermenting and carbonating).

UNIT III 6 Hours

Drugs: Types of drugs-depressant, anticonvulsant, narcotics, antipyretics, antibiotics, antiseptics, analgesics, muscle relaxants and cardiovascular and vasodepressants, steroids (Only Applications).

UNIT IV 6 Hours

Antibiotics: Definition - uses of Antibiotics - Ampicillin, streptomycin, tetracyclin, Erythromycin.

Vitamins: Classifications of vitamins - vitamins deficiency diseases. (Vitamins A, B_1, B_2, B_3, B_6, B_{12}, C, D, E and K).

UNIT V 6 Hours

Water Chemistry: Characteristics of water, soft water and hard water - removal of hardness - Purification of water by ion exchange and reverse osmosis methods. Water pollution**:** Sources and effects of water pollution (Domestic, Industrial, Agricultural) -Eutrophication.

Reference Books

Albert Burger, ***Medicinal Chemistry***, Wiley, Publisher**.**
G. R. Chatwal, ***Pharmaceutical chemistry***, Himalaya Publishing House.
Singh and VK Kapoor, ***Organic Pharmaceutical Chemistry***, Vallabh Publications
S. Lakshmi, ***Pharmaceutical Chemistry***, S. Chand Publishing

Pedagogy

Chalk & Talk, E-Resources, Group Discussion

Teaching aids

Black Board, LCD Projector

Course Contents and Lecture Schedule

Module No.	Topic	No. of Lectures	Content Delivery Methods
UNIT - I			
1.1	Definition: Food, Food Pyramid - Health-Hygiene	3	E-Resources
1.2	Mal, under and over nutrition, their causes and remedies, sanitation.	3	E-Resources
UNIT - II			
2.1	Food classification and functions-Digestion in mouth, stomach and intestine. Absorption	3	E-Resources
2.2	Spoilages, preservation techniques (canning, dehydration, freeze-drying. salting, pickling, pasteurizing, fermenting and carbonating).	3	E-Resources
UNIT - III			
3.1	Types of drugs-depressant, anticonvulsant, narcotics	2	E-Resources
3.2	antipyretics, antibiotics, antiseptics, analgesics	2	E-Resources
3.3	Muscle relaxants and cardiovascular and vasodepressants, steroids (Only Applications).	2	Chalk & Talk
UNIT - IV			
4.1	Antibiotics: Definition - uses of Antibiotics - Ampicillin, streptomycin, tetracyclin, Erythromycin.	3	E-Resources

4.2	Vitamins: Classifications of vitamins - vitamins deficiency diseases. (Vitamins A, B_1, B_2, B_3, B_6, B_{12}, C, D, E and K).	3	Chalk & Talk
UNIT - V			
5.1	Water - Characteristics of water, soft water and hard water	1	Chalk & Talk
5.2	Removal of hardness - Purification of water by ion exchange and reverse osmosis methods.	2	E-Resources
5.3	Water pollution**:** Sources and effects of water pollution (Domestic, Industrial, Agricultural) -Eutrophication.	3	E-Resources
	Total	**30**	

Course Designer
Dr. S. Sivakumar
Assistant Professor of Chemistry