Structure and Detailed Syllabus of the Four Year Undergraduate Programme (FYUGP) of **MULTIDISCIPLINARY COURSE (MU)** under NEP-2020

Department of Chemistry
JAGANNATH BAROOAH UNIVERSITY
Barpatra Ali, Jorhat-785001 (Assam)

SEMESTER –I & II & III

Paper Title : **CHEMISTRY IN EVERYDAY LIFE**
Category : **THEORY**
Paper Code : **CHMMU-011, CHMMU- 021 & CHMMU- 031**
Course No : **MU- 01**
Credits : **03**
No. of Classes : **45**
Total Theory Marks : **75 [End Semester: 50; In Semester: 25]**

Course Objective:

- To understand the chemical constituents in various day to day materials used by a common man like Tooth paste, Soaps, perfumes, hand sanitizers and detergents etc.
- To know the functions of Biomolecules such as carbodydrates, proteins, fats, vitamins
- To understand the functions and applicability of various drugs such as Analgesics, Antibiotics, Antacids, Antihistamines, Antimicrobials, Contraceptives, Antipyretics, Antiseptics
- To understand food additives and adulterants with health impact
- To understand the basic constituents and applications of petroleum products, polymers and fertilizers

Expected Learner Outcome: Students will gain an understanding of

- Uses and health impact of household chemicals
- Importance of biomolecules and their functions
- Different drugs and their use in daily life
- Why food additives in food items, food adulterants and health impact
- Composition of petroleum products, LPG, CNG and different fertilizers and polymer products

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UNIT- I: **Household Chemicals**: Common household chemicals and their applications. Tooth Paste, Sun Screen, Soaps, Detergents, Antifreeze, Bleach, Drain and Toilet Cleaners, Perfumes, Hand Sanitizer, Mosquito Sprays, Rat Poisons, Air fresheners, Major chemical ingredients; Harmful impacts

(8 Lectures; Marks: 10)

UNIT-II: **Biomolecules**: **Carbohydrates**–Definition, classification and functions, **Proteins** - Elementary idea of amino acids, definition classification and importance, **Fats**: Definition and functions; **Enzymes** - Basic idea and functions, **Hormones** - Elementary idea and functions, Some hormonal diseases; **Vitamins** - Classification and sources and deficiency diseases due to vitamins A, B, C, D, E and K. functions.

(7 Lectures; Marks: 08)

UNIT-III: **Pharmaceutical Compounds & Chemotherapy**: Drugs and their Classification; Therapeutic Action of Different Classes of the Drugs: Analgesics, Antibiotics, Antacids, Antihistamines, Antimicrobials, Contraceptives, Antipyretics, Antiseptics; Structure and Function of: ***Analgesics***: Aspirin, Paracetamol, Ibuprofen; ***Anthelmentic Drug***: Mebendazole; ***Antiallergic Drug:*** Chloropheneramine maleate; ***Antibiotics***: Pencillin-V, Chloromycetin, Streptomycin; ***Anti-infalmmatory Agent***: Oxypheno-butazone; ***Antimalarials***: Primazuine phosphate & Chloroquine.: ***Antacid***: Ranitidine.Medicinal values of curcumin (haldi), azadirachtin (neem), vitamin C. Brief idea on anti cancer drugs.

(10 Lectures; Marks: 10)

UNIT-IV: **Food Additives & Adulterants**: Definition of food additives, types and functions, examples of food additives; **Food Preservatives**: Definition, application of benzoates, propionates,

sorbates, disulphites. **Artificial Sweeteners**: Aspartame, saccharin, dulcin, sucralose and sodium cyclamate. **Flavouring Agents**: Vanillin, alkylesters and monosodium glutamate. **Food Adulterants:** Definition, Types, Common food adulterants in milk & dairy products, Oil & Fats, Sugar, Beverage, Sugar and Jaggery, Powdered Spices, Impact on health.

(10 Lectures; Marks: 10)

UNIT-V: Petroleum Products, Fertilizers and Polymers: Composition of Crude Petroleum; Diesel, Gasoline, LPG, CNG, E-20 fuel; **Fertilizers**: Classification and Functions of Fertilizers; Straight, Complex and Mixed fertilizers; Examples; Brief introduction on Urea, DAP and SSP; Fertilizer Grade. **Polymers**: Definition: Monomer and Polymers; Classifications; Natural, Synthetic and Semi-synthetic Polymers; Typical examples of polymers used as plastics, in textiles, in electronic and automobile components, in the medical and aerospace materials. Problems of plastic waste management.

(10 Lectures; Marks: 12)

Recommended Books and Study Materials

1. B. K. Sharma: Introduction to Industrial Chemistry, Goel Publishing, Meerut
2. Drugs and Pharmaceutical Sciences Series, Marcel Dekker, Vol. II, INC, New York
3. Foods: Facts and Principles. N. Shakuntala and S. Swamy, 4th Edition. New Age International
4. Chemistry in Daily Life: Singh K, 3rd Edition
5. SWAYAM
6. IGNOU
7. INFLIBET

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