

**KAKATIYA UNIVERSITY**  
**B.SC I YEAR SEMESTER-I - CBCS**  
**Ability Enhancement Compulsory Course (AECC)**

**ENVIRONMENTAL STUDIES**

(2 hrs./week)

Credits – 2

**UNIT - I : Ecosystem, Biodiversity & Natural Resources**

( 15 hrs. )

1. Definition, Scope & Importance of Environmental Studies.
2. Structure of Ecosystem – Abiotic & Biotic components Producers, Consumers, Decomposers, Food chains, Food webs, Ecological pyramids)
3. Function of an Ecosystem :Energy flow in the Ecosystem ( Single channel energy flow model )
4. Definition of Biodiversity , Genetic,Species & Ecosystem diversity , Hot-spots of Biodiversity, Threats to Biodiversity , Conservation of Biodiversity (Insitu & Exsitu )
5. Renewable & Non – renewable resources, Brief account of Forest , Mineral & Energy (Solar Energy & Geothermal Energy) resources
6. Water Conservation , Rain water harvesting & Watershed management.

**UNIT – II: Environmental Pollution , Global Issues & Legislation**

(15 hrs.)

1. Causes, Effects & Control measures of Air Pollution, Water Pollution
2. Solid Waste Management
3. Global Warming & Ozone layer depletion.
4. Ill – effects of Fire- works
5. Disaster management – floods, earthquakes & cyclones
6. Environmental legislation :-  
(a) Wild life Protection Act (b) Forest Act (c) Water Act (d) Air Act
7. Human Rights
8. Women and Child welfare
9. Role of Information technology in environment and human health

❖ **Field Study:**

(5 hours)

- Pond Ecosystem
- Forest Ecosystem

**REFERENCES:**

- Environmental Studies - from crisis to cure – by R. Rajagopalan (Third edition) Oxford University Press.
- Text book of Environmental Studies for undergraduate courses (second edition) by Erach Bharucha
- A text book of Environmental Studies by Dr.D.K.Asthana and Dr. Meera Asthana



**Dr. G. SHAMITHA**  
Chairperson  
Board of Studies  
Department of Zoology & Sericulture Unit  
KAKATIYA UNIVERSITY - WGL-506009 (T.S)

Chemistry in every day life

2020-21.

**B.Sc., III YEAR CHEMISTRY**

**SEMESTER-VI**

**DSE-A: Chemistry Paper-VI**

*(Medicinal Chemistry)*

**(04 credits)**

**60 Hrs (04 Hrs/week)**

**Unit- I: Introduction and Terminology (15 Hrs)**

**S6-E-A-I: Diseases:** Common diseases, infective diseases—insect borne, air-borne, water-borne and hereditary diseases.

**Terminology in Medicinal Chemistry:** Drug, Active Pharmaceutical Ingredient (ADI), Pharmaceuticals, Pharmacology, Pharmacophore, Pharmacodynamics, Pharmacokinetics, metabolites, anti metabolites and therapeutic index.

**Drugs:** Nomenclature: Chemical name, Generic name and Trade names with examples; Classification: Classification based on structures and therapeutic activity with examples.

**ADMET:** a) Absorption: Definition, absorption of drugs across the membrane – active and passive absorption, routes of administration of drugs. b) Distribution: definition and effect of plasma protein binding. c) Metabolism: definition, phase I and phase II reactions. d) Elimination: definition and renal elimination. Toxicity.

**Unit-II: Enzymes and Receptors (15 Hrs)**

**S6-E-A-II: Enzymes: Introduction,** Mechanism and factors affecting enzyme action, Specificity of enzyme action (including stereo specificity), Enzyme inhibitors and their importance. Types of inhibition - reversible, irreversible and their subtypes with examples.

**Receptors:** Introduction, Drug action-receptor theory, Mechanism of drug action, concept of agonists and antagonists with examples. Drug receptor interactions involved in drug receptor complex. Binding role of -OH group, -NH<sub>2</sub> group, quaternary ammonium salts and double bond. Structure – activity relationships of drug molecules, explanation with sulfonamides.

**Unit- III: Synthesis and Therapeutic Activity of Drugs (15 Hrs)**

**S6-E-A-III:** Introduction, synthesis and therapeutic activity of:

**Chemotherapeutics:** Sulphanilamide, dapsone, Penicillin-G (semi synthesis), Chloroquin, Isoniazid, Cisplatin and AZT.

**Drugs to treat metabolic disorders:** Anti diabetic - Tolbutamide; Anti-inflammatory – Ibuprofen; Cardiovascular- Glyceryl trinitrate; Antipyretic (paracetamol, aspirin) and Antacid- Omeprazole.

*Prof. J. M. S.*

*N. M. D.*