COURSE PLAN

Department	: Civil Engineering
Course Name & code	: Environmental Studies (CIE-1052)
Semester & branch	: II Semester (Physics cycle)
Name of the faculty	: Anup Wilfred Sebastian (Co-ordinator)
No of contact hours/week	: 2 Hours/week (Credits 2)

ASSESSMENT PLAN

Course Outcomes (CO's)

At the end of this course, the student should be able to:

CO1: Discuss the role of Environmental Science, its multidisciplinary nature in conservation of global environment.
CO2: Describe the natural resources, utility and the role of ecosystems in maintaining planetary cycles.
CO3: Discuss types, sources, and prevention and control measures of pollution.
CO4: Discuss laws, acts and policies related to environmental protection in India.
CO5: Describe types, mitigation and management techniques of disaster.

PART A - THEORY

Chapter 1: Introduction of the subject: Meaning, objectives, major environmental issues, Sustainable development, Environment as a global concern. **[CO1]**

Chapter 2: Natural Resources: Renewable and non-renewable resources – Resource consumption & conservation methods. Availability of water resources, Forest, Land and Mineral resources, Energy – Different types of energy, Conventional sources & Non-Conventional sources of energy, solar energy, Hydro electric energy, Wind Energy, Nuclear energy, Biomass & Biogas, Fossil Fuels, Hydrogen as an alternative energy. **[CO2]**

Chapter 3: Ecosystem: Meaning, structure and functions, biotic and abiotic components, Tropic levels, Energy flow in an ecosystem, Biodiversity and its conservation – in situ & ex situ, IUCN redlist. **[CO2]**

Chapter 4: Environmental Pollution - water, air, land, noise, solid waste, biomedical waste, nuclear pollution, marine pollution. **[CO3]**

Chapter 5: Environmental laws and legislations: Related to general, air, water, biodiversity and forests, Pollution control Boards: Central & State - Roles and responsibilities, Environmental impact assessment (EIA). **[CO4]**

Chapter 6: Disaster Management: Meaning, classification of disasters, Disaster risk formula, Disaster management phases – Disaster management cycle, Emergency response and recovery, Hazardous waste spills and dangers posed. **[CO5]**

PART B – CASE STUDIES

Case study 1: Sundarbans Vanishing Shores. **[CO1]**
Case study 2: How Ballari was laid waste? **[CO2]**
Case study 3: Chennai Floods, A Man-made Natural Disaster. **[CO2/CO5]**
Case study 4: The Cost of Green Revolution. **[CO3]**
Case study 5: How to define an electrified village? Current distress. **[CO2/CO4]**
Case study 6: Citizen Conservation, Limitations of traditional conservation measures and the role of technology in mitigating them. **[CO2/CO3]**

PART C – EVS ACTIVITY

Activity 1: To describe the Environmental problems of your locality and suggest a remedy. **[CO1/CO2]**
Activity 2: To prepare the list of plants and animals which are used for making meals at your home on any one day and to comment on the habit and the habitat of each. **[CO3]**
Activity 3: To describe: a) Climate of your area b) Yearly variation in the suspended particulate matter in the same area. **[CO2]**
Activity 4: To make an audit of the Electrical energy consumption by various household appliances at your home. **[CO2/CO3]**

References:

1. Mohan kanda, Disaster Management in India evolution of institutional arrangements & operational strategies. (2017)
2. Y.Anjaneyulu, Introduction to Environmental science (2017).
3. R.K.Trivedy, Handbook of Environmental laws, acts, guidelines, compliances & standards, 3rd edition, 2nd volume. (2017)
4. Benny Joseph, Environmental Studies, Tata McGraw-Hill Publishing Company Ltd., New Delhi (2008).

5. Aloka Debi, "Environmental Science and Engineering", Universities Press (India) Pvt. Ltd. (2012).
6. R.J.Ranjit Daniels and Jagadish Krishnaswamy, "Environmental Studies", Wiley India Private Ltd., New Delhi. (2009).
7. G.Swarajya Lakshmi, Environmental science: A Practical Manual, (2010).
8. *Student guide*: Environment Reader for Universities, based on UGC syllabus published by Centre for Science and Environment, (2017).

Submitted by: Mr.Anup Wilfred Sebastian
EVS Co-ordinator