

Course – Plan

School : School of Science
Department : Environmental Science
Course Code : ES 551
Course Title : Fundamentals of Environmental Science

L2-T0-P0-CR2

Instructor(s): Dr. Nirmali Gogoi
Dr. Nayanmoni Gogoi

Abstract: This course emphasizes on the concept of environmental science, various environmental processes, theories and regulations associated with it viz. environmental systems, environmental concerns, theories and concepts, sustainable development and resources management. The course will be evaluated in terms of environmental principles in relation to living beings, motivated towards impact assessment, mitigation and sustainable development.

Objective:

1. Understand the definitions and concepts in environmental science
2. Discuss the various environmental processes, theories, regulations, strategies and management
3. Develop a constructive approach in learning environmental science

Prerequisites of the course:

There are no prerequisites for this course, however preliminary knowledge on the concept of environmental science will be helpful

Course outline:

Introduction-Definitions and concepts in environmental science; Principles and scope of environmental science; Components of environment-atmosphere, hydrosphere, pedosphere, biosphere.

Environmental systems- Environmental interactions, bio-geochemical cycles; Albedo and heat capacity; Greenhouse effect.

Environmental concerns- pollution, population growth, human health, ozone depletion, climate change, global warming etc.

Theories and concepts- Gaia theory, Environmental Kuznet's curve, Ecological foot print, Environmental ethics, Environmental conventions and treaties.

Sustainable development-Ecology and environmentalism, Concept of sustainable development; Environmental degradation and sustainable development. Environmental Impact Assessment.

Resources management- Land & water; Agriculture, Forest and Wetland; Common Property Resources (CPRs).

Suggested Books:

1. Wright R.T. & Nebel, B. J., Environmental Science: Toward a Sustainable Future, 10th Ed. Pearson Educational, 2007
2. Manahan S. E., Environmental Science & Technology – A sustainable approach to Green Science and Technology, Taylor & Francis, 2006
3. Allaby M., Basics of Environmental Science, Taylor & Francis, 1996

Pedagogy:

Lectures, assignment, presentation

Time Plan:

Lecture(s)	Topic/syllabi
1	Introductory lecture: Overview of the course, explaining the evaluation components, announcing the tentative dates for submission of term paper, the scope and objective of the course
2-7	Introduction: Definitions and concepts in environmental science; Principles and scope of environmental science; Components of environment-atmosphere, hydrosphere, pedosphere, biosphere
8-11	Environmental systems: Environmental interactions, bio-geochemical cycles; Albedo and heat capacity; Greenhouse effect
12-14	Environmental concerns: Pollution, population growth, human health, ozone depletion, climate change, global warming etc.
15-16	Theories and concepts: Gaia theory, Environmental Kuznet's curve, Ecological foot print, Environmental ethics, Environmental conventions and treaties
17-18	Sustainable development: Ecology and environmentalism, Concept of sustainable development; Environmental degradation and sustainable development. Environmental Impact Assessment
19-20	Resources management: Land & water; Agriculture, Forest and Wetland; Common Property Resources (CPRs)

Evaluation Plan:

Test/Assignment	Marks
Test I	20
Major I	30
Test II	20
Major II	50

Expected outcome:

It is expected that at the end of the course each student will be able to understand the scope and objectives of this course, various concepts in environmental science, components of the environment, and its management.

Course instructor(s):

(Nirmali Gogoi)

(Nayanmoni Gogoi)
