NU | NIIT UNIVERSITY

COURSE HANDOUT

Session: 2025-2026 **Sub Session:** Semester II (Jan-Jun)

Course Name: Environmental Science (ENV 301) **L/T/P/C:**3/0/0/3

Course Incharge: Prof. Deepak Khanna

Course Faculty:

Prof. Deepak Khanna (DEEPAK.KHANNA@NIITUNIVERSITY.IN)

Registered Batches:

B.Tech. - AI and DS 2024 , CSE 2024 , CYS 2024 , ECE 2024

Course Description

The Multidisciplinary Nature of Environmental Studies- Definition, scope and importance
Need for public awareness.

Course Outcomes

S.No.	Description
CO1	Understanding problems of pollution, loss of forests, solid waste disposal, degradation of the environment, issues like loss of economic productivity and climate refugees.
CO2	Researching what the world environmentalists are doing about the environmental issues. SDGs Sustainable development Goals; Environmental protection and resource conservation.
CO3	Exploring the Global Trends help students to ensure they are ready for the future. Comprehend the technological solutions being experimented to combat the disruptive forces that humanity faces.
CO4	Analysis of real time data. Evaluation and realisation of the real impact of climate change over the years in a students own residential area.
CO5	Application of the knowledge gained through environmentally important practical visits and project presentations to save the environment.

Course outcome mapping with Programme Outcomes:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	1	1	1	1	1	2	3	2	1
CO2	2	2	3	1	1	2	1	1	1	2	2	2
CO3	2	2	3	2	2	2	1	2	2	2	1	2
CO4	2	2	3	3	2	2	1	2	1	2	1	2
CO5	2	2	3	2	3	1	1	1	2	2	-	2
Max.	3	2	3	3	3	2	1	2	2	3	2	2

3 is High, 2 is Moderate, 1 is Low & - is Not Applicable

AC Approved Course Content

The Academic Council approved course content will be filled in this section by the Academic Office.

Tentative Lecture Plan/ Activities

Units	Syllabus Details	Hours required to complete	Course Outcome
1	Introduction to Ecosystem Carbon Hydrogen Nitrogen cycles	7	CO1, CO2, CO3
2	THE AMAZON RAINFOREST ECOSYSTEM IN DETAIL	3	CO1, CO2, CO3
3	Industrial revolution and its impact on the environment	2	CO1, CO2, CO3
4	Population growth and natural resource exploitation Global environmental change WITH VIDEOS	2	CO1, CO2, CO3
5	WATER TREATMENT AND WATER CONSERVATION PAST AND PRESENT	3	CO1, CO2, CO4
6	VISIT TO STP FACILITY IN NU and REPORT ACTIVITY 1	1	CO1, CO2, CO4, CO5
7	Energy resources Sources of energy and their classification, renewable and nonrenewable sources	2	CO1, CO2, CO4, CO5
8	Conventional energy sources coal oil natural gas nuclear energy Non-conventional energy	2	CO2, CO3
9	sources solar, wind, tidal, hydro, wave, ocean thermal, geothermal, biomass, hydrogen and fuel cells	2	CO2, CO3
10	Implications of energy use on the environment	2	CO2, CO3
11	VISIT TO EAT TO SEE EFFICIENCY IN ENERGY USE and REPORT ACTIVITY 2	1	CO2, CO3
12	Pollution Impact of sectoral processes on Environment Types of Pollution air, noise, water, soil, thermal,	5	CO2, CO3
13	Radioactive and municipal solid waste, hazardous waste transboundary air pollution acid rain smog.	1	CO1, CO2, CO3, CO4, CO5
14	DEFORESTATION AND REFORESTATION	1	CO1, CO2, CO3, CO4, CO5
15	VISIT UP THE KALEE PAHADEE TO SEE REFORSESTATION EFFORTS and REPORT ACTIVITY 3	1	CO1, CO2, CO3, CO4, CO5
16	SOLAR POWER PLANTS	1	CO1, CO2, CO3, CO4, CO5
17	BIO FUELS	1	CO1, CO2, CO3, CO4, CO5
18	THE CURSE OF PLASTICS	1	CO1, CO2, CO3, CO4, CO5
19	LOSS OF BIODIVERSITY	1	CO2, CO3
20	OZONE LAYER DEPLETION	1	CO2, CO3
21	VISIT TO CLIMATE CLOCK , GROUND WATER LEVEL MEASUREMENT POINT RAIN WATER HARVESTING POINTS IN NU	1	CO2, CO3
22	ELECTRIC CARS VARIOUS TYPES OF FUELS ISSUES WITH ADOPTION	1	CO1, CO2, CO4
23	ELECTRIC CAR CHARGING POINTS TYPES AND FUTURE	1	CO1, CO2, CO4
24	Urbanisation ADVANTAGES AND DISADVANTAGES	1	CO1, CO2, CO3, CO4, CO5
25	SUSTAINABLE DEVELOPMENT GOALS NATIONALLY DETERMINED CONTRIBUTIONS	4	CO1, CO2, CO4
26	VISIT TO HERO MOTOCORP AS WELL AS NEEMRANA BAAWREE WATERWELL FOR SUSTAINABILITY LESSONS and REPORT SITE VISIT	1	CO1, CO2, CO4
0	TOTAL	48	
Total lectures/activities required		**97***	

***Number of lectures/activities may vary.**

Book Details

Text Books

P. Sivashanmugam - Basics of Environmental Science and Engineering-NIPA (2007)

Reference Books

Botkin D B & Keller E A. Environmental Science – Earth as a living Planet, John Wiley & Sons, Student Edition.2007
Environmental Science & Engineering. Anandan P & Kumaravelam R. Scitech Publication (India) PVT LTD. 2009

Online course work/ Massive Open Online Course/ Open source web material

NPTEL
https://nptel.ac.in/courses/120/108/120108004/#
https://nptel.ac.in/courses/122/102/122102006/
https://nptel.ac.in/courses/120108002/

Evaluation Scheme (Theory/ Practical)

Evaluation Component	Exam Month	Exam Duration (in Hrs)	Mode of Examination	Weighted Marks
Attendance	Not Applicable	Not Applicable	Not Applicable	10.00
Activity 1	Not Applicable	Not Applicable	Not Applicable	5.00
Activity 2	Not Applicable	Not Applicable	Not Applicable	5.00
Activity 3	Not Applicable	Not Applicable	Not Applicable	5.00
Site Visit	Not Applicable	Not Applicable	Not Applicable	5.00
Project 1	Not Applicable	Not Applicable	Not Applicable	10.00
Project 2	Not Applicable	Not Applicable	Not Applicable	10.00
Mid Semester Examination	March	1	Online	20.00
Comprehensive Examination	May	2	Online	30.00

Course outcome mapping with evaluation components:

CO	Activity 1	Activity 2	Activity 3	Comprehensive Examination	Mid Semester Examination	Project 1	Project 2	Site Visit
CO1	2	3	3	3	3	3	3	3
CO2	1	2	2	3	3	3	3	2
CO3	3	1	1	3	2	3	3	1
CO4	2	1	2	3	2	3	3	2
CO5	3	3	3	3	1	3	3	3
Max.	3	3	3	3	3	3	3	3

3 is High, 2 is Moderate, 1 is Low & - is Not Applicable

Make up Policy

Students who are likely to miss a component of evaluation due to any genuine reason may be given a make-up for that component by the Course In-Charge. The students are required to approach the Course In-Charge immediately for the same before the conduct of the evaluation component. It is the responsibility of the student to approach the Course In-Charge. The Course In-Charge will not allow makeup, if a student approaches 7 days after the evaluation component (Student Handbook R 35).

Plagiarism

We are committed to uphold the standards of academic integrity and honesty. Plagiarism in any form is unacceptable and will be treated seriously (Student Handbook R 49).

Grading Policy

The marks obtained in all evaluation components will be aggregated, and the total will be converted into a letter grade or report in accordance with NIIT University's guidelines. Grading is relative and is generally aligned with the class average. Mid-Semester grades will be announced after the evaluation of the Mid-Semester Examination, as outlined in the Student Handbook (R 40 and R 41).

University Attendance Policy

As per attendance policy of NIIT University. For more details, kindly refer to the attendance policy in the student handbook.

Consultation Hours

Students may approach the Course instructor between 1:30-3:30 PM on any wednesday for removing difficulties; otherwise also students are free to approach the Course instructor on any day and any time during the University hours.