



UNIVERSITY OF CALCUTTA

Notification No. CSR/96/2025

It is notified for information of all concerned that in terms of the provisions of Section 54 of the Calcutta University Act, 1979, (as amended), and, in the exercise of his powers under 9(6) of the said Act, the Vice-Chancellor has, by an order dated 10.12.2025, approved PSO (Program Specific Outcome) and CO (Course Outcome) of Environmental Science, under CCF, 2022, as laid down in the accompanying Pamphlets.

The above PSO & CO have been framed under the new revised syllabus of Environmental Science, as Published under University Notification No. CSR/89/2025, dt.28.11.2025

SENATE HOUSE

Kolkata-700073

30.12.2025

 30-12-2025
Prof.(Dr.) Debasis Das

Registrar

ENVIRONMENTAL SCIENCE

(PROGRAMME SPECIFIC OUTCOMES, COURSE OUTCOMES)

Environmental Science is considered as an interdisciplinary subject. Therefore students of Environmental science acquire in depth knowledge and skills from several disciplines like natural resource management, biodiversity conservation, environmental geoscience environmental chemistry, environmental impact assessment, environmental management, waste management, pollution control, green technologies and sustainable development etc.

The programmes – Environmental Science (Honours) and Environmental Science (Multidisciplinary) was initiated with two basic goals. The first was aimed to spread awareness regarding environmental degradation and its' impact on human civilization, while the second one is to spread capacity building for implementation of policies and strategies with regards to environmental protection in general and environment sustenance in particular.

The specific outcome of the programme are:

- I. To make students well informed on all the components of environment and their changing dynamics in the climate change regime.
- II. To create informed human resource available to assess and manage the degradation of environment.
- III. To create a group of sensitive young work force who will be the next generation crusader for sustainable development.

COURSE OUTCOMES

ENVIRONMENTAL SCIENCE (HONOURS) (Under CCF 2022)

CORE COURSES

Sl No.	Semester	Course Code, Paper Code	Course Name	Course Outcomes After completion of the Following courses students will be able to-
1.	I	DSCC-1	Fundamentals of Environment	Acquire in depth knowledge related to environment and its components and their inter relationships. Understand the Principle, Scope and Multidisciplinary approach of Environmental Science Acquire in depth knowledge of various global environmental issues. Develop the basic concept of sustainable development and its various operational attributes. Prepare assignments on various Global environmental issues

2.	II	DSCC-2	Principles of Ecology	Acquiredetailedknowledgeonvarious componentsofecology including (Population ecology, Community ecology and Ecosystem ecology etc.) andlearnecological methodologies and related techniques. Develop the ability to judgeecologicaldynamicsand regulationof vital processes in the environment Able to apply lessons learned from field experiencevis-à-visecological dynamics of nature. Record biotic and abiotic components and interactions and develop ecological hypotheses anddesigningstudiesinthe field and laboratory settings.
3.	III	DSCC-3	Environmental Chemistry	Understand the fundamental concepts related to Environmental Chemistry Acquire detailed knowledge on the chemical processes of the various components of the environment (Air, water, soil etc.) and processes responsible for alteration of the same. Understand the concept and techniques of green chemistry and its various applications To learn the basic techniques and consecutively perform analysis of physio-chemical parameters of water and soil.
4.	III	DSCC-4	Environmental Physics and Climate Science	Understand in detail fundamental conceptsrelatedto Environmental Physics and its associated aspects and models vis-à-vis pollutant dispersal. Develop sound knowledge of climate sciences including climatic parameters, climate classification atmospheric process, ocean circulation and ocean atmosphere interactions. Record Atmospheric temperature, Atmospheric pressure, Relative Humidity, Wind speed and Rainfall.

5	IV	DSCC-5	Environmental Geosciences	Learn basic composition of geologic materials and Earth's dynamic processes. Acquire detailed knowledge on rock cycle and learn general structures & properties of rocks and minerals Learn the general concept of geomorphology and its allied aspects Develop skills for mapping and toposheet interpretation.
6	IV	DSCC-6	Environmental Pollution	Gain knowledge on cause and effects of pollution of different spheres including case studies and its control measures involving reclamation strategies of various types of pollution. Develop analytical skills for quantitative estimation of water and air quality parameters and physico-chemical and microbiological parameters of soil.
7	IV	DSCC-7	Biodiversity and Conservation	Develop sound knowledge on Biodiversity and its importance, its threats and conservation measures. Acquire skills related to measurement of biodiversity and interpreting it in the context of conservation of biodiversity
8	IV	DSCC-8	Environmental Microbiology & Biotechnology	Learn various attributes of Environmental Microbiology and Environmental Biotechnology Understand in detail Microbiology of Air, Water and Soil. Learn various biotechnological applications and processes particularly biotechnological applications in wastewater and solid waste treatment and other safe processes Acquire skills in performing microbial staining techniques, MPN and preparing review papers on

				various topics related to Environmental Biotechnology.
9	V	DSCC-9	Hydrology and Pedology	Develop sound knowledge and enhance skills on water resource and its management. Learn all fundamentals of soil science including soil physico-chemical and biological parameters, Soil resistance and resilience and fertilizer management Gain knowledge on land resources its degradation and management techniques Develop analytical skills for quantitative analysis of water and physico-chemical parameters of soil.
10	V	DSCC-10	Energy and Environment	Acquire detailed knowledge on environmental implications of energy use, future aspects of energy use and energy conservation. Develop sound knowledge on energy demand, energy resources and its interrelationship with environment. Develop skills in calculating energy efficiency and conduct energy audit
11	V	DSCC-11	Environmental Legislation and Policy	Procure an insight into the international law and response towards global environmental issues and enforcement of international protocols to combat the issues. Learn Constitutional provisions, Legislations of and Policy framework of India related to environment and its conservation. Develop skills in reviewing of Law: Case studies on Environmental Issues

12	V	DSCC-12	Environmental Impact Assessment	Develop sound knowledge on basics of environmental impact assessment and various attributes of environmental management plan, Hazop study and emergency preparedness Learn environmental impact assessment methodologies Understand in detail the EIA Regulations in India Acquire skills in preparation of preliminary environmental impact assessment report
13	VI	DSCC-13	Remote Sensing and GIS	Learn basics of remote sensing GPS and GIS and consequently its application in water resource management, land use planning, forest resources, marine and atmospheric studies. Acquire skills on the various attributes of QGIS and its applications
14	VI	DSCC-14	Environmental Management	Learn various aspects of Environmental Management System its tools and strategies. Acquire in depth knowledge of Corporate framework of environmental management and its attributes. Acquire skills in preparation of an Environmental Management Plan and reviewing case studies on corporate social responsibility
15	VI	DSCC-15	Waste Management	Gain in depth knowledge on all aspects of waste management including various types of Solid waste management Learn techniques involved in resource recovery Learn concept of energy recovery

				from waste, integrated waste management and circular economy Understand in detail policies for solid waste management in India Learn practically the management of waste by visiting waste management site
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SKILL ENHANCEMENT COURSES

SIN o.	Semester	Course Code Paper Code	Course Name	Course outcomes After completion of the following courses students will be able to-
1	I or II or III	SKILL ENHANCEMENT COURSE	Urban Environmental Management	Understand in detail the concept and various aspects of urbanization, urban transformation urban dwellings including housing, slums, urban infrastructure, urban health problems and urban natural forest ecosystem Understand the concept of controlled nature, green belts and green city Acquire knowledge on all attributes of green buildings including LEED and GRIHA certification Understand national and international efforts in urban management

On successful completion of Undergraduate programme in Environmental Science 4 year (Honours) (Under CCF, 2022) from University of Calcutta, students will acquire knowledge and develop skills for the above mentioned programme specific outcomes and course outcomes