PROGRAMME NAME	B.Sc. HONOURS IN ENVIRONMENTAL SCIENCE
PROGRAMME SPECIFIC OUTCOME	Environmental Science is the branch of biology concerned with the relations between organisms and their environment. Environmental Science is an interdisciplinary academic field that integrates physical and biological sciences, (including but not limited to Ecology, Physics, Chemistry, Biology, Soil Science, Geology, Atmospheric Science and Geography) to the study of the environment, and the solution of environmental problems. Environmental Science provides an integrated, quantitative, and interdisciplinary approach to the study of environmental systems. Environment has been the greatest source of life for the living beings on earth. Be it food, shelter, clothes, water, sunlight, air, or any other substance for supporting life, everything is provided to us by the environment. The rapid growth in urbanization and industrialization, however, has badly disturbed and destroyed the balance of our environment, as a result of which there has been unsustainable growth and development. Though temporarily, this growth may seem beneficial to us but in the long run, this will prove dangerous. Owing to this, there has now been greater realization and effort to protect and conserve the environment and its precious substances or components. The process of cleaning air, noise abatement, water protection, pollution control, waste management etc., calls for new services and goods and services have helped in

	creating numerous jobs. A career in Environmental Science promises wonderful employment opportunities, for the environmental scientists, environmental engineers, environmental modelers, environmental biologists, environmental journalists and many more. Environmental Science is basically the study of conservation of energy, biodiversity, climatic change, ground water and soil contamination and also the many technologies developed for treating air pollution, water pollution, sound pollution, industrial pollution, vehicular pollution and plastic menace. Lately, Environmental Science has emerged as a sought after career since people all over the globe have become more aware about keeping the environment clean and protected.

HONOURS COURSE OUTCOMES			
SEMESTER	**COURSE CODE**	**COURSE TITLE**	**COURSE OUTCOME**
I	CC-1	Fundamentals of Environment	Provide students with the scope to develop knowledge base covering all attributes of the environment and enable them to attain scientific / technological capabilities to find answers to the fundamental questions before the society with regards to human action and environmental effects with due diligence and also enhance the ability to apply this knowledge and proficiency to find solutions relating to environmental concerns of varied dimensions of present times
I	CC-2	Environmental Biology	Environmental Biology focuses on the relationships between organisms and their habitat. Waste management, wildlife management, resource management and environmental law are few career option if study Environmental Biology
I	AECC-1	COMPULSORY ENVS	AECC-1 is a compulsory general paper of 1st year undergraduate student. In this paper we teach the fundamentals of environmental studies. This paper introduces the fundamental principles and concept of environmental science, ecology and related interdisciplinary subject such as policy, law, Economics, pollution control, resource management etc.

II	CC-3	Environmental Chemistry	Environmental Chemistry focuses on the chemical processes influencing the composition and chemical speciation of natural systems (air, water and soil) the chemical fate and mobility of contaminants in the environment. Environmental Chemistry helps to develop methods and procedures to reduce the contaminants or the chemicals in the air, water, soil which improves the quality
II	CC-4	Environmental Physics	After the course the student shall - understand how mathematics and physics can be applied in the environmental areas
II	AECC-2	COMMUNICATIVE ENGLISH/MIL (BENGALI/FRENCH)	COURSE OUTCOME GIVEN SHEET CONTAINING IN ENGLISH, BENGALI, FRENCH AECC-2 (SEMESTER-2)
III	CC-5	Earth Science	Earth Science helps students to identify common rocks and minerals and how they form and describe and interpret the development of landforms and geological structure
III	CC-6	Environmental Resources	Natural resources are naturally occurring substances that are valuable to humans. So, Environmental Resource study finds new ways to protect natural resources. Without biodiversity food, medication, industry,

			habitats, and ecosystems will falter. So, Biodiversity study helps students to understand how life functions and the role of each life in sustaining ecosystem
III	CC-7	Green Chemistry & Environmental Applications	Students learn the basic Principles of green and sustainable chemistry. They must be able to do and understand stoichiometric calculations and relate them to green process metrics. They learn alternative solvent media and energy source for chemical processes. Instrumental methods help to detect/identify elements and compounds in a small amount of sample
III	SEC-1	(OR) Remote Sensing & Geographical Information System (GIS)	To provide exposure to students in gaining knowledge on concepts and applications leading to modeling of earth resources management using Remote Sensing and also to acquire skills in storing and development. GIS is used as an inquiry driven, problem-solving, standards-based set of tasks that incorporates fieldwork and provides career pathways that are increasingly in demand
IV	CC-8	Ecotoxicology & Environmental Biotechnology	Students will gain knowledge and understanding of basic principles in ecotoxicolgy. They will learn about the

			toxic effects of pollutants on different levels of biological organization and how to assess toxicity
IV	CC-9	Environmental Laws, Policies & Environmental Impact Assessment	To protect the environment, it is important to have some legislation in place. The environmental laws provide guidelines so that we can take care of the environment in an effective manner. The objective of environmental law is to preserve and protect the nature's gifts from pollution. The purpose of these environmental laws is to prevent, minimize, remedy and punish actions that threaten or damage the environment and those that live in it. The learning outcomes of studying Environmental Laws is to understand judicial response to environmental issues in India
IV	CC-10	Natural Hazards & Management & Waste Management	Upon completion of this lesson, students will be able to define 'natural disaster', identify different types of natural disaters and give at least one key fact for each type of natural disaster. Upon successful completion of studying Waste Management, students will be able to learn basic concepts of solid waste management, beginning from source generation to waste disposal in a system of municipality organizational structure

IV	SEC-2	(OR) Microbiological Techniques	Microbiological techniques are the techniques that are used for studying about microbes also including bacteria, fungi and the protists. Mostly, they include the methodologies for conducting survey, culture, identify, stain, and manipulate microbes. Many microbes are harmless to humans, others can cause serious problems. They can even spoil food, introduce toxins, cause disease and lead to a host of other problems. So, through microbiological testing students should learn how quickly identify these contaminants and treat them before they do irreversible damage
V	CC-11	Environmental Pollution	Students will learn how to assess pollution sources, study exposure pathways and fate, and evaluate consequences of human exposure to pollution and its impacts to environmental quality. Providing the evidence base to support decision and policy making, students should be able to understand pollution problems, consider ways to respond to them, and propose appropriate solutions/actions to reduce pollution risks when necessary
V	CC-12	Environmental Engineering & Statistics	While studying Environmental Engineering, Students learn about basic

			engineering principles, ecosystem processes, transporting organic contaminants, air quality control technologies and principles of sustainability
V	DSE-1	Environmental Pollution & Monitoring Techniques	The main objective of the course is to provide students with theoretical knowledge about Environmental Monitoring techniques. Students learn procedure sto establish environmental monitoring. They are able to choose the appropriate type of environmental monitoring both in terms of choice of sampling locations and measured parameters as well as in terms of choice of medium
V	DSE-2	Environmental Health & Stress Physiology	Environmental health is the branch of public health that: focuses on the relationships between people and their environment; promotes human health and well-being; and fosters healthy and safe communities. Environmental health is a key part of any comprehensive public health system. Students will apply knowledge of the sciences within an interdisciplinary context in solving environmental issues such as environmental health
VI	CC-13	Environmental Economics & Management	Environmental Economics will help us to understand some important and controversial issues – such as climate change policy,

			nuclear power, recycling policy, and traffic congestion charging. In very broad terms, environmental economics looks at how economic activity and policy affect the environment in which we live. Students will apply economic approaches to analyze policy options to better manage the environment at both the local and global levels
VI	CC-14	Wildlife Management & Conservation	The course deals with the survey & management of captive and wild animals. The purpose of conservation; management of endangered species
VI	DSE-3	(OR) Atmosphere & Global Climate Change	Learning objectives to investigate the issue of climate change through discussion, experimentation and observation in order to further students understanding of the topic and the impact their own activities have on their surroundings, as well as, encouraging students to take action to prevent further climate change
VI	DSE-4	(OR) Solid Waste Management	Upon successful completion of this course, students will be able to learn basic concepts of solid waste management, beginning from source generation to waste disposal in a system of municipality organizational structure and also students will be able to evaluate the subject from the

			technical, legal and economical points by learning of all terms related to general solid waste management