Faculty of Computer Science & Applications
Bachelor of Computer Applications in Data Science
(W. E. F.: 2023-24)
Document ID: SUTEFCAB-01

Name of Faculty	:	Faculty of Computer Science & Applications
Name of Program	:	Bachelor of Computer Applications in Data Science
Course Code	:	1BES01
Course Title	:	Environmental Science & Sustainable Development
Type of Course	:	Value Added (VA)
Year of Introduction	:	2023-24

Prerequisite	:	A keen interest in the natural systems that support life on earth
Course Objective	:	To promote environmental principles that result in pro-conservation behaviour.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	Explain multi-disciplinary nature of environment, its component and degradation
	CO2	Identify the types of pollution in society along with their sources
	CO3	Realize the global environmental issues
	CO4	Implement the concept of recycle and reuse in all fields of engineering
	CO5	Understand sustainability and identify major sustainability challenges

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	SEE	CIA	SEE	CIA	
2	0	0	2	50	25	0	0	75

Legends: ***L****-Lecture;* ***T****–Tutorial/Teacher Guided Theory Practice;* ***P*** *– Practical,* ***C*** *– Credit,* ***SEE*** *– Semester End Examination,* ***CIA*** *- Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.))*

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with CO
1	**Concept of Environmental Science:** Definition, Principles & Scope of environmental science. Structure and composition of atmosphere- troposphere, stratosphere, mesosphere and thermosphere; Hydrosphere, lithosphere-horizon, nutrients in soil, nitrogen pathways and biosphere	5	16%	CO1
2	**Environmental Pollution:** Types of Environmental Pollution:	10	36%	CO1 CO2 CO3

	Water Pollution: Introduction to Water Quality Standards, Sources of Water Pollution: Industrial, Agricultural, Municipal; Classification of water pollutants, Effects of water pollutants, Eutrophication Marine pollution Air Pollution: Composition of air, Structure of atmosphere, Ambient Air Quality Standards, Classification of air pollutants, Sources of common air pollutants like PM, SO2, NOX, Natural & Anthropogenic Sources, Effects of common air pollutants Land Pollution: Land uses, Land degradation: Causes, Effects and Control, Soil Erosion Noise Pollution: Introduction, Sound and Noise, Noise measurements, Causes and Effects Thermal Pollution: Causes and effects, Role of individual in the prevention of pollution			
3	**Global Environment Issues:** Global Environmental problems: Ozone layer depletion, sea level rise, Acid rain, global warming, Forest fire, Global Warming and Green House Effect.	5	16%	CO3
4	**Concept of 4R's:** Principles, Application of 4R's	2	6%	CO4
5	**Sustainable Development:** Meaning, Definition, Goals, Achieving Sustainable Development.	8	26%	CO5

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	**40**	**40**	**20**	**0**	**0**	**0**

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Suggested Learning Websites

Sr. No.	Name of Website
1	https://moef.gov.in/en/
2	https://nptel.ac.in/

Reference Books

Sr. No.	Name of Reference Books
1	Basics of Environmental Studies by Prof Dr N S Varandani, LAP -Lambert Academic Publishing, Germany.
2	Environmental Studies by R. Rajagopalan, Oxford University Press.
3	Environmental Studies by Dr. Suresh K Dhameja, S K Kataria & Sons New Delhi.
4	Basics of Environmental Studies by U K Khare, Tata McGraw Hill.
5	Environmental Studies by Anindita Basak ,2009 Publisher: Drling Kindersley (India)Pvt. Ltd. Pearson.
6	Textbook of Environmental Studies by Deeksha Dave & S S Kateva, Cengage Publishers.
7	Textbook of Environmental Studies for Undergraduate Courses by Erach Bharucha. Secondedition,2013 Publisher: Universities Press (India) Private Ltd, Hyderabad.
8	Environmental Studies by Benny Joseph, TMH publishers.