SILVER OAK UNIVERSITY

Silver Oak Institute of Science

Bachelor of Science Physics

Course Name: Climate Change and Sustainable Development

Course Code: 2050253103

Semester: 1st

Prerequisite:

1. Students should have a strong foundation in basic biology for comprehending the historical origin and evolution of life, as well as fundamental concepts in biology.

Course Objectives:

1. The objective of this course is to introduce students to the concept of sustainable development and related concepts of global environmental problems.
2. It also aims to educate students about environment conservation techniques.
3. It seeks to create public awareness about the problems related to sustainable development.

Teaching Scheme:

Teaching Scheme				
L	T	P	Contact Hours	Credit
4	0	0	4	4

Contents:

Unit	Topics	Teaching Hours	% Weightage
1	**Pollution: Definition;** Causes and Effects of Air Pollution, Water Pollution, Soil Pollution, Marine Pollution & Noise Pollution, Role of an individual in Prevention of Pollution. **Disaster Management:** Floods, Earthquakes, Cyclones & Landslides.	14	25
2	**Climate Change:** Climate Change, Global Warming, Acid Rain, Ozone Layer Depletion Nuclear Accidents & Nuclear Holocaust. Basics of climate change; impacts on various sectors; responses and mitigation efforts by the state and non-state agencies; debates and critiques, Sectoral implications of climate change – Agriculture and Forestry; Transportation; Buildings; Energy Industry and Manufacturing the Environment Protection Act, Issues involved in Enforcement of Environmental Legislation., Public Awareness.	14	25
3	**Sustainable Development:** Sustainable development basics, SDGs, challenges and opportunities the business case and leadership for action Regulatory environment and international policy; Integrated Reporting Framework of Sustainability Production and consumption; Design, technology, and planning of sustainability Communication and marketing; Collaboration and partnerships, Relationship between socioeconomic and environmental drivers of change (e.g. globalization, urbanization, land degradation inefficient use of water, climate change) and sustainable development with a focus on the specific situation in Central Asia.	14	25

4	**Social Issues:** From Unsustainable to Sustainable Development. Urban Problems Related to Energy. Water Conservation, Rainwater Harvesting and Watershed Management, Resettlement & Rehabilitation of People: It' Problems & Concerns Human Population: Population Growth, Population Explosion. Environment & Human Health. Role of Information Technology in Environment & Human Health	14	25

Course Outcomes:

Sr. No.	CO Statement	Unit
CO-1	Develop basic understanding of pollution and its causes.	1
CO-2	Describe basics of climate changes and impacts.	2
CO-3	Describe basics of Sustainable development for better society.	3
CO-4	Develop better understanding and provide effective solutions on social Issues.	4

Teaching & Learning Methodology:

1. Problem based learning
2. Experiment centric teaching methods
3. Competency based learning
4. Cooperative based learning

Books Recommended:

1. Erach Barucha,, "Text book of Environmental Studies for undergraduate Courses" Publisher University Press,University Grants Commission..
2. Joachim Monkelbaan. Governance for the Sustainable Development Goals, Book · Springer International Publishing, Nature Singapore Pte Ltd, 2019.Willey.
3. Suraj Mal, R.B. Singh, Christian Huggel, Editors. Climate Change, Extreme Events and Disaster Risk Reduction, Towards Sustainable Development Goals. Book · Springer International Publishing AG 2018.

List of Open-Source Software/learning website:

1. http://silveroakuni.ac.in/video-lecture

CO-PO-PSO Matrix:

CO. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO-1	1					3	1				3		
CO-2	2					2	1				3		
CO-3	3	1	1	2		2	1				3		
CO-4	3	1	1	2		3	1				3		