



SILVER OAK UNIVERSITY

Engineering and Technology (Diploma)

All Departments

Subject Name: Environmental Science

Semester: 1st Year

Prerequisite:

NIL

Objective:

To aware the students about our environment and to conserve environment. To use renewable energy so can reduce pollution and protect our earth. Smart city green building concept help students about social awareness.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Evaluation Scheme				Total Marks
L	T	P		Internal		External		
				Th	Pr	Th	Pr	
2	1	0	0	40	--	60	--	100

Content:

Unit No.	Course Contents	Teaching Hours	Weightage %
1	Introduction to Environment and Environmental Studies: Definition and Components of Environment, Relationship between the different components of Environment, Man and Environment relationship, Impact of technology on Environment, Environmental	5	16
2.	ENVIRONMENTAL POLLUTION: a.) Water Pollution: Introduction – Water Quality Standards, Sources of Water Pollution: Industrial, Agricultural, Municipal; Classification of water pollutants, Effects of water pollutants, Eutrophication b.) Air Pollution: Composition of air, Structure of atmosphere, Ambient Air Quality Standards, Classification of air pollutants, Sources of common air pollutants like PM, SO ₂ , NO _x , Natural & Anthropogenic Sources, Effects of common air pollutants. c.) Noise Pollution: Introduction, Sound and Noise, Noise measurements, Causes and Effect	10	35

3.	Solar Power Features of solar thermal and PV systems Types of solar cookers and solar water heaters Solar PV systems and its components and their working Types of solar PV cells Solar PV and solar water heaters, rating and costing	5	17
4.	Sustainable Development Sustainable Development, Concept of waste management and recycling Climate Change, Global Warming and Green House Effect, Acid Rain, Depletion of Ozone layer	5	16
5.	BASIC CONCEPT OF GREEN BUILDING AND SMART CITIES Green Building: Introduction, Objectives, Fundamental Principles, Benefits of Green Building, Examples of Green Building Smart Cities: Concept	5	16

Course Outcome:

Sr. No.	CO statement	Unit No
CO-1	To know about environments and its components	1
CO-2	To get aware about the various pollutions and its control methods	2
CO-3	To get knowledge of renewable energy and its practical application	3
CO-4	To get knowledge of basic sustainable development and effect of climate change	4
CO-5	To update with basic concepts of green buildings and smart cities	5

Teaching & Learning Methodology: -

Chalk/Board

PPT

Documentaries and videos

List of Experiments/Tutorials:

1. Introduction to Environment
2. Water Pollution
3. Air Pollution
4. Solid Waste
5. Concept of Green Building
6. Concept of Smart Cities

Books Recommended: -

1. Basics of Environmental Studies by Prof Dr N S Varandani ,2013 Publisher: LAP -Lambert Academic Publishing , Germany
2. Textbook of Environmental Studies by Deeksha Dave & SSKateva , Cengage Publishers.
3. Environmental Studies by R. Rajagopalan, Oxford University Press
4. Environmental Studies by Benny Joseph, TMH publishers
5. Environmental Studies by Dr. Suresh K Dhameja, 2007 Published by : S K Kataria& Sons New Delhi
6. Basics of Environmental Studies by U K Khare, 2011 Published by Tata McGraw Hill
7. Renewable Energy Sources and Emerging Technologies Kothari, D.P. Singal, K.C., Ranjan, Rakesh PHI Learning, New Delhi, 2009

List of Open Source Software/learning website:**List of Software/Learning Websites**

- i. http://www.nrel.gov/learning/re_solar.html
- ii. <http://www.mnre.gov.in/schemes/grid-connected/solar-thermal-2/>