



GOVERNMENT POLYTECHNIC, KORAPUT
DEPARTMENT OF MECHANICAL ENGINEERING

Discipline:
MECHANICAL
ENGG

Semester:
3RD

Name of the Teaching Faculty *Snidhara Moharana.*

Subject:
ENVIRONMENTAL
STUDIES

No. of days/per week class allotted: 04

Semester From date: *01/08/2023* To Date: *30/11/2023.*

No. of Weeks: 15

COURSE OUTCOMES

After completion of study of environmental studies, the student will be able to:

1. Acquire knowledge about our natural environment, its importance in our life & its benefits.
2. Gather adequate knowledge of different pollutants, their sources and shall be aware of solid waste management systems and hazardous waste and their effects.
3. Develop awareness in society & towards preservation of environment.

Week	Class Day	Theory
1 ST	1 ST	-A general discussion with students about their basic knowledge on the topic Environment. -Definition & The Multidisciplinary nature of environmental studies.
	2 ND	-Scope and importance of EVS.
	3 RD	-Need for public awareness.
	4 TH	-Overall discussion and note preparation.
2 ND	1 ST	-Natural Resources, types of natural resources. -Renewable and nonrenewable resources with examples. -Introduction of forest resources.
	2 ND	- Use and over-exploitation of forest resources. - Deforestation, case studies. - Timber extraction mining, dams and their effects on forests and tribal people. - A general discussion on the local cases & importance of conservation of forest resources.
	3 RD	-Water resources, percentage of saline and fresh water present in nature. -Use and over-utilization of surface and ground water.
	4 TH	-Definition of floods, drought. - Conflicts over water, dam's benefits and problems. -Cases observed in local level.
3 RD	1 ST	-Definition of Mineral Resources. Various mineral found from earth crusts. -Use and exploitation. - environmental effects of extracting and using mineral resources
	2 ND	-Food Resources, World food problems.

		-In order to increase the production, changes caused in agriculture and effects of modern agriculture: fertilizers- pesticides. -Problems due to overgrazing, water logging, salinity.
	3 RD	-Energy Resources, Energy found in various form. -Growing energy need, renewable and non-renewable energy sources - Use of alternate energy sources case studies.
	4 TH	-Land Resources, why it is considered as an important resource. -Land degradation, man induced landslides, soil erosion, and desertification. -Problems arises due to above reasons and precaution.
4 TH	1 ST	-Role of individual in conservation of natural resources. -Equitable use of resources for sustainable life styles.
	2 ND	-Summarization of the chapter and related question discussion.
	3 RD	-Concept of an eco-system, The origin and meaning of the term Ecosystem. -Structure of an eco-system
	4 TH	-Function of an eco-system with proper chart. -Definition of Producers, consumers, decomposers with example.
5 TH	1 ST	-Energy flow in the eco systems: Laws applicable in the transfer of energy. -Ecological succession, types of succession.
	2 ND	-Food chains, food webs with 2-3 examples.
	3 RD	-Ecological pyramids. -Types of Ecological pyramids and their characteristics.
	4 TH	-Introduction, types, characteristic features, structure and function of the Forest ecosystem, ponds ecosystem.
6 TH	1 ST	- Characteristic features, structure and function of the streams, lakes.
	2 ND	- Rivers, estuaries & oceans ecosystem. - Related question discussion.
	3 RD	-Meaning of Biodiversity, Introduction-Definition of biodiversity. -Genetics, species and ecosystem diversity.
	4 TH	- Biogeographically classification of India with geographical identification.
7 TH	1 ST	-Value of biodiversity: consumptive use, productive use, social ethical,
	2 ND	-Aesthetic and opting values. - Biodiversity at global level.
	3 RD	-Biodiversity at National and local level.
	4 TH	-Threats to biodiversity: Habitats loss, poaching of wild life.
8 TH	1 ST	- Man wildlife conflicts. -Cases observed, Reason of conflict. -Discussion regarding the possible solution. -Summarization of the chapter and related question discussion.
	2 ND	-Environmental Pollution: discussion about what we already know about pollution. - Definition of pollution. -Types of pollutant responsible for pollution.
	3 RD	-Causes, effects and control measures of Air pollution.
	4 TH	- Causes, effects and control measures of Water pollution.
9 TH	1 ST	- Causes, effects and control measures of Soil pollution.
	2 ND	- Causes, effects and control measures of Marine pollution.
	3 RD	-Causes, effects and control measures of Noise pollution.
	4 TH	-Causes, effects and control measures of Thermal pollution
10 TH	1 ST	-Causes, effects and control measures of Nuclear hazards.
	2 ND	-Solid waste Management. - Causes, effects and control measures of urban and industrial wastes.
	3 RD	-Role of an individual in prevention of pollution. -What is Disaster, men made and natural Disaster.

11 TH	4 TH	-Disaster management: Floods, Earth quake.
	1 ST	- Disaster management of cyclones and landslides -Summarization and overall discussion of the chapter.
	2 ND	Social issues and the Environment. -Discussion on various social issues arising out related to environment. -Form unsustainable to sustainable development with some basic example.
	3 RD	-Urban problems related to energy. -Summarization of resource of water. -Water conservation.
12 TH	4 TH	- Rain water harvesting, water shed management.
	1 ST	-Resettlement and rehabilitation of people. - Its problems and concern.
	2 ND	-Environmental ethics: issue and possible solutions. -Climate change.
	3 RD	-Acid rain, ozone layer depletion. - Global warming.
13 TH	4 TH	-Nuclear accidents and holocaust. -case studies, Various incident in the past.
	1 ST	- Air prevention and control of pollution Act. - Water prevention and control of pollution Act.
	2 ND	-Public awareness regarding cause effect and control of environmental pollution. -Summarization of the chapter with related question.
	3 RD	-Human population and the environment: Discussion on current population of different countries. - Population growth and variation among nations.
14 TH	4 TH	-Population explosion. - Causes responsible for population explosion. -Problems arising out of population explosion.
	1 ST	- Family welfare program. -Various program carried out by the Govt. of India.
	2 ND	- Environment and human health. - Human rights.
	3 RD	-Value of education. -Summarization of the chapter.
15 TH	4 TH	-Doubt clearing and discussion of topics.
	1 ST	- Doubt clearing and discussion of topics.
	2 ND	-Probable question discussion for the semester exam.
	3 RD	-Probable question discussion for the semester exam.
	4 TH	-Probable question discussion for the semester exam.

LEARNING RESOURCES:

1. Fundamental concepts in Environmental Studies by D.D. Mishra, S.Chand & Co-Ltd publication.
2. Text book of Environmental Studies by K. Raghavan Nambiar, SCITECH Publication Pvt. Ltd.

WEBSITE RESOURCES:

1. Wikipedia.
2. YouTube Channel "Lets studies" by Himanshi Singh.

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18/12/23

Sign. Of Faculty
concerned

hd
04/8/23

Sign. Of HOD I/C

Principal

