**Shivaji University, Kolhapur**
**Second year undergraduate compulsory course in**
**ENVIRONMENTAL STUDIES**
**Syllabus**

**1. Nature of Environmental Studies.** (4 lectures)

Definition, scope and importance.
Multidisciplinary nature of environmental studies
Need for public awareness.

**2. Natural Resources and Associated Problems.** (4 lectures)

a) Forest resources: Use and over-exploitation, deforestation, dams and their effects on forests and tribal people.
b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams benefits and problems.
c) Mineral resources: Usage and exploitation. Environmental effects of extracting and using mineral resources.
d) Food resources: World food problem, changes caused by agriculture effect of modern agriculture, fertilizer-pesticide problems.
e) Energy resources: Growing energy needs, renewable and non-renewable energy resources, use of alternate energy sources. Solar energy, Biomass energy, Nuclear energy.
f) Land resources: Solar energy , Biomass energy, Nuclear energy, Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

Role of an individuals in conservation of natural resources.

**3. Ecosystems** (6 lectures)

Concept of an ecosystem.
Structure and function of an ecosystem.
Producers, consumers and decomposers.
Energy flow in the ecosystem.
Ecological succession.
Food chains, food webs and ecological pyramids.
Introduction, types, characteristics features, structure and function of the following ecosystem :-
a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem,
d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

**4. Biodiversity and its conservation** (6 lectures)

Introduction- Definition: genetic, species and ecosystem diversity.
Bio-geographical classification of India.
Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.
India as a mega- diversity nation.
Western Ghat as a biodiversity region.
Hot-spot of biodiversity.
Threats to biodiversity habitat loss, poaching of wildlife, man- wildlife conflicts.
Endangered and endemic species of India.
Conservation of biodiversity: In-situ and Ex-situ conservation of

biodiversity.

**5. Environmental Pollution** (6 lectures)

Definition: Causes, effects and control measures of: Air pollution, Water pollution, soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards.

Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of a individual in prevention of pollution.

**6. Social Issues and the Environment** (8 lectures)

Disaster management: floods, earthquake, cyclone, tsunami and landslides.

Urban problems related to energy

Water conservation, rain water harvesting, watershed management

Resettlement and rehabilitation of people; its problems and concerns.

Environmental ethics: Issue and possible solutions.

Global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.

Wasteland reclamation.

Consumerism and waste products.

**7. Environmental Protection** (8 lectures)

From Unsustainable to Sustainable development.

Environmental Protection Act.

Air (Prevention and Control of Pollution) Act.

Water (Prevention and control of Pollution) Act.

Wildlife Protection Act.

Forest Conservation Act.

Population Growth and Human Health, Human Rights.

**8. Field Work** (10 lectures)

Visit to a local area to document environmental assets-
River/Forest/Grassland/Hill/Mountain.

or

Visit to a local polluted site - Urban / Rural / Industrial /Agricultural.

or

Study of common plants, insects, birds.

or

Study of simple ecosystems - ponds, river, hill slopes, etc.

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23) Paryavaran Sahastra - Gharapure

(M) Magazine
(R) Reference
(TB) Textbook