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| **Course** | **Course Name** | **L-T-P** | **Credits** |
| **EVS1142** | **Environmental Studies** | **3-1-0** | **4** |

**Unit 1: Introduction to environmental studies (2 Lectures)**

Multidisciplinary nature of environmental studies; components of environment –

atmosphere, hydrosphere, lithosphere and biosphere.

Scope and importance; Concept of sustainability and sustainable development.

**Unit 2: Ecosystems (6 Lectures)**

What is an ecosystem? Structure and function of ecosystem; Energy flow in an

ecosystem: food chain, food web and ecological succession. Case studies of the

following ecosystems:

Forest ecosystem

Grassland ecosystem

Desert ecosystem

Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

**Unit 3: Natural Resources: Renewable and Non-renewable Resources (8 Lectures)**

Land Resources and land use change; Land degradation, soil erosion and

desertification.

Deforestation: Causes and impacts due to mining, dam building on environment,

forests, biodiversity and tribal populations.

Water: Use and over-exploitation of surface and ground water, floods, droughts,

conflicts over water (international & inter-state).

Heating of earth and circulation of air; air mass formation and precipitation.

Energy resources: Renewable and non-renewable energy sources, use of alternate

energy sources, growing energy needs, case studies.

**Unit 4: Biodiversity and Conservation (8 Lectures)**

Levels of biological diversity: genetic, species and ecosystem diversity; Biogeography

zones of India; Biodiversity patterns and global biodiversity hot spots

India as a mega-biodiversity nation; Endangered and endemic species of India

Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts,

biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of

biodiversity.

Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic

and Informational value.

**Unit 5: Environmental Pollution (8 Lectures)**

Environmental pollution: types, causes, effects and controls; Air, water, soil, chemical

and noise pollution

Nuclear hazards and human health risks

Solid waste management: Control measures of urban and industrial waste.

Pollution case studies.

**Unit 6: Environmental Policies & Practices (7 Lectures**)

Climate change, global warming, ozone layer depletion, acid rain and impacts on

human communities and agriculture.

Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution)

Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest

Conservation Act; International agreements; Montreal and Kyoto protocols and

conservation on Biological Diversity (CBD). The Chemical Weapons Convention

(CWC).

Nature reserves, tribal population and rights, and human, wildlife conflicts in

Indian context

**Unit 7: Human Communities and the Environment (6 Lectures)**

Human population and growth: Impacts on environment, human health and

welfares.

Carbon foot-print.

Resettlement and rehabilitation of project affected persons; case studies.

Disaster management: floods, earthquakes, cyclones and landslides.

Environmental movements: Chipko, Silent valley, Bishnios of Rajasthan.

Environmental ethics: Role of Indian and other religions and cultures in environmental

conservation.

Environmental communication and public awareness, case studies (e.g., CNG vehicles

in Delhi).

**Unit 8: Field work (15 hours tutorials)**

Visit to an area to document environmental assets; river/forest/flora/fauna, etc.

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

Study of common plants, insects, birds and basic principles of identification.

Study of simple ecosystems-pond, river, Delhi Ridge, etc.

**Readings**

i. World Commission on environment and Development. 1987. Our Common

ii. Future. Oxford University Press.

The course follows a continuous evaluation system with 30% weightage on internal components and 70 % on the end term examination. The internal component consists of a series of assignments which will be spread throughout the course.

**Evaluation Matrix**

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| --- | --- |
| Practicums | 5% |
| Individual assignments | 5% |
| Group assignments | 5% |
| Attendance | 5% |
| Mid-term Examination | 10% |
| End Term Exam | 70% |
| Total | 100% |