

Department of Botany

ENVIRONMENTAL SUSTAINABILITY (NEEDS)

SEMESTER-IV

II Year- B.A / B.Sc. / B.Com / B.B.A / BCA

UNEVS20– ENVIRONMENTAL STUDIES

Year/ Sem	Course Code	Title of the Course	Course Type	Course Category	H/W	Credits	Marks
II Years IV Sem	UNEVS20	Environmental Studies	Theory	General Paper	2	2	40+60=100

COURSE OUTCOMES (CO):

On completion of the course, the students will be able to,

1. Gain knowledge on multidisciplinary nature of environmental studies
2. Understand the Ecosystem, its structure and function
3. Understand the conservation of biodiversity
4. Gain knowledge on Environmental pollution, causes and its effects
5. Apply the laws in prevention of environment.

UNIT I: Multidisciplinary nature of environmental studies: (6 hours)

- 1.1 Definition, scope and importance (K2, K3)
- 1.2 Need for public awareness (K1, K3)
- 1.3 Natural resources: Renewable and non-renewable resources (K3, K4)
- 1.4 Forest Resources: Use and over-exploitation, deforestation (K3, K4)
- 1.5 Water Resources: Use and over-utilisation of surface and ground water (K1, K2)
- 1.6 Mineral Resources: Use and exploitation, environmental effects of extracting and Food resources (K2,K3)

UNIT II: Ecosystem: (6 hours)

- 2.1 Concept of an ecosystem (K2, K3)
- 2.2 Structure and functions of an ecosystem (K1, K3)
- 2.3 Energy flow in the ecosystem-Water cycle and carbon cycle (K4)
- 2.4 Food chain, food web and ecological pyramids (K3)
- 2.5 Structure and functions of forest and grassland ecosystem (K2,K3)
- 2.6 Structure and functions of desert and aquatic ecosystem (K1,K3)

UNIT III: Biodiversity and its Conservation: (6 hours)

- 3.1 Definition: Genetic, Species, Ecosystem Diversity (**K1, K2**)
- 3.2 Biogeographic classification of India (**K1, K2**)
- 3.3 Value of biodiversity: consumptive, productive use, social, ethical, aesthetic (**K2, K4**)
- 3.4 Hot spots of biodiversity, Endangered and endemic species of India (**K2,K3**)
- 3.5 Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts(**K3, K4**)
- 3.6 Conservation of biodiversity: in-situ and ex-situ (**K3, K4**)

UNIT IV: Environmental pollution:(6 hours)

- 4.1 Definition, causes, effects and control measures of air, water, soil and noise pollution (**K2, K3**)
- 4.2 Solid waste management: causes, effects and control measures of urban and industrial waste (**K2,K3**)
- 4.3 Climate change, global warming, (**K3**)
- 4.4 Acid rain, ozone layer depletion (**K3**)
- 4.5 Disaster management: floods, earthquakes, cyclones, landslides (**K1,K3**)
- 4.6 Rainwater harvesting (**K1,K2**)

UNIT V: Human Population and Environment: (6 hours)

- 5.1 Environmental acts- Environment Protection Act (1986), (**K1, K3**)
- 5.2 Air (Prevention and Control of Pollution Act 1981), Water (Prevention and Control of Pollution Act 1976 (**K2, K3**)
- 5.3 Wildlife Protection Act (1972), Forest Conservation Act (1980) (**K2**)
- 5.4 Population explosion – family welfare program (**K1,K3**)
- 5.5 Infectious diseases and Water related diseases (**K2, K3**)
- 5.6 Role of information technology in environmental conservation. (**K1,K2**)

TEXT BOOKS:

1. Dr. V. Balu – Environmental Studies. 2004.
2. N. Arumugam – Concepts of Ecology, 2014.

REFERENCE BOOKS:

1. Verma and Agarwal – Environmental Biology, 2015.
2. Anubha Kaushik & Kaushik .C .P(2008)-Perspectives in Environmental studies (3rd Edition)New age International publishers.
3. Environmental studies, Edition: Periyar EVR college, Trichy, Jazym Publications,Trichy, 2004.

OPEN EDUCATIONAL RESOURCES (OER):

1. <https://youtu.be/PwmSa09C16E>
2. <https://youtu.be/brF0RWJyx9w>

3. https://youtu.be/76K_5SrYyM4
4. <https://youtu.be/PqxMzKLYrZ4>