

# **Savitribai Phule Pune University**

**(Formerly University of Pune)**



## **Value Education Course (VEC)**

**Syllabus for F.Y.B.Com. Students**

**(As Per National Education Policy-2020)**

**For Colleges Affiliated to Savitribai Phule Pune University**

**To be implemented from Academic Year 2024-2025**

# VEC-101-T: Environment Education-I

Course type: VEC (Theory)

No. of Credits: 2

Semester : I

## Course Outcomes

After the completion of this course, student will be able to-

CO-1: describe how human activities impact the environment.

CO-2: explain principles of sustainable development and resource management.

CO-3: analyze local, regional, and global environmental issues and their effects.

CO-4: evaluate different strategies for conserving biodiversity and ecosystems.

CO-5: apply relevant environmental policies and ethical considerations to real-world scenarios.

CO-6: design and implement action plans for community-based environmental projects.

## Course Content

### Chapter 1: Humans and the Environment

[06 hours]

**The man-environment interaction:** Humans as hunter-gatherers; Mastery of fire; Origin of agriculture; Emergence of city-states; Great ancient civilizations and the environment; Middle Ages and Renaissance; Industrial revolution and its impact on the environment; Population growth and natural resource exploitation; Global environmental change.

**The emergence of environmentalism:** Anthropocentric and eco-centric perspectives (Major thinkers); The Club of Rome- Limits to Growth; UN Conference on Human Environment 1972; World Commission on Environment and Development and the concept of sustainable development; Rio Summit and subsequent international efforts.

#### Suggested Readings

1. Fisher, Michael H. (2018) An Environmental History of India- From Earliest Times to the Twenty-First Century, Cambridge University Press.
2. Headrick, Daniel R. (2020) Humans versus Nature- A Global Environmental History, Oxford University Press.
3. Hughes, J. Donald (2009) An Environmental History of the World- Humankind's Changing Role in the Community of Life, 2nd Edition. Routledge.
4. Perman, R., Ma, Y., McGilvray, J., and Common, M. (2003) Natural Resource and Environmental Economics. Pearson Education.
5. Simmons, I. G. (2008). Global Environmental History: 10,000 BC to AD 2000. Edinburgh University Press

### Chapter 2: Natural Resources and Sustainable Development

[08 hours]

**Overview of natural resources:** Definition of resource; Classification of natural resources- biotic and abiotic, renewable and non-renewable.

**Biotic resources:** Major type of biotic resources- forests, grasslands, wetlands, wildlife and aquatic (fresh water and marine); Microbes as a resource; Status and challenges.

**Water resources:** Types of water resources- fresh water and marine resources; Availability and use of water resources; Environmental impact of over-exploitation, issues and challenges; Water scarcity and stress; Conflicts over water.

**Soil and mineral resources:** Important minerals; Mineral exploitation; Environmental problems due to extraction of minerals and use; Soil as a resource and its degradation.

**Energy resources:** Sources of energy and their classification, renewable and non-renewable sources of energy; Conventional energy sources- coal, oil, natural gas, nuclear energy; Non-conventional energy sources- solar, wind, tidal, hydro, wave, ocean thermal, geothermal, biomass, hydrogen and fuel cells; Implications of energy use on the environment.

**Introduction to sustainable development:** Sustainable Development Goals (SDGs)- targets and indicators, challenges and strategies for SDGs.

### **Suggested Readings**

1. Chiras, D. D and Reganold, J. P. (2010). Natural Resource Conservation: Management for a Sustainable Future. 10th edition, Upper Saddle River, N. J. Benjamin/Cummins/Pearson.
2. John W. Twidell and Anthony D. (2015). Renewable Energy Sources, 3rd Edition, Weir Publisher (ELBS)
3. William P. Cunningham and Mary A. (2015) Cunningham Environmental Science: A Global Concern, Publisher (Mc-Graw Hill, USA)
4. Gilbert M. Masters and W. P. (2008). An Introduction to Environmental Engineering and Science, Ela Publisher (Pearson)
5. Singh, J.S., Singh, S.P. & Gupta, S.R. 2006. Ecology, Environment and Resource Conservation. Anamaya Publications <https://sdgs.un.org/goals>

### **Chapter 3: Environmental Issues: Local, Regional and Global [08 hours]**

**Environmental issues and scales:** Concepts of micro-, meso-, synoptic and planetary scales; Temporal and spatial extents of local, regional, and global phenomena.

**Pollution:** Impact of sectoral processes on Environment, Types of Pollution- air, noise, water, soil, municipal solid waste, hazardous waste; Transboundary air pollution; Acid rain; Smog.

**Land use and Land cover change:** land degradation, deforestation, desertification, urbanization. Biodiversity loss: past and current trends, impact.

**Global change:** Ozone layer depletion; Climate change.

### **Suggested Readings**

1. Harper, Charles L. (2017) Environment and Society, Human Perspectives on Environmental Issues 6th Edition. Routledge.
2. Harris, Frances (2012) Global Environmental Issues, 2nd Edition. Wiley- Blackwell.
3. William P. Cunningham and Mary A. (2015). Cunningham Environmental Science: A global concern, Publisher (Mc-Graw Hill, USA)
4. Manahan, S.E. (2022). Environmental Chemistry (11th ed.). CRC Press. <https://doi.org/10.1201/9781003096238>
5. Rajagopalan, R. (2011). Environmental Studies: From Crisis to Cure. India: Oxford University Press.

#### **Chapter 4: Conservation of Biodiversity and Ecosystems**

**[08 hours]**

**Biodiversity and its distribution:** Biodiversity as a natural resource; Levels and types of biodiversity; Biodiversity in India and the world; Biodiversity hotspots; Species and ecosystem threat categories.

**Ecosystems and ecosystem services:** Major ecosystem types in India and their basic characteristics- forests, wetlands, grasslands, agriculture, coastal and marine; Ecosystem services- classification and their significance.

**Threats to biodiversity and ecosystems:** Land use and land cover change; Commercial exploitation of species; Invasive species; Fire, disasters and climate change.

**Major conservation policies:** in-situ and ex-situ conservation approaches; Major protected areas; National and International Instruments for biodiversity conservation; the role of traditional knowledge, community-based conservation; Gender and conservation.

#### **Suggested Readings**

1. Bawa, K.S., Oomen, M.A. and Primack, R. (2011) Conservation Biology: A Primer for South Asia. Universities Press.
2. Sinha, N. (2020) Wild and Wilful. Harper Collins, India.
3. Varghese, Anita, Oommen, Meera Anna, Paul, Mridula Mary, Nath, Snehlata (Editors) (2022) Conservation through Sustainable Use: Lessons from India. Routledge.
4. Bhagwat, Shonil (Editor) (2018) Conservation and Development in India: Reimagining Wilderness, Earthscan Conservation and Development, Routledge.
5. Krishnamurthy, K.V. (2003) Textbook of Biodiversity, Science Publishers, Plymouth, UK

