Punyashlok Ahilyadevi Holkar Solapur University, Solapur

NAAC Accredited-2022
'B^{++}'Grade (CGPA2.96)

Name of the Faculty: All Faculty

(As per New Education Policy 2020)

Syllabus: Environmental Studies (VEC)

Name of the Course: Value Education Course (Sem. II)

(Syllabus to be implemented from June 2024)

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

All Undergraduate (UG) Program with CBCS: Second Semester

Vertical: Value Education Course (VEC)

Course Code: ENS24

Course Name: Environmental Studies

***Teaching Scheme: Credits:** 02 **Total Contact Hrs:** 30 **Lectures:** 02 Hours/Week	***Examination Scheme: Total Marks :** 50 **UA:** 30 Marks **IA/CA:** 20 Marks

Course Preamble:

Education serves the vital purpose of nurturing a holistic development of an individual's personality, and the educational system plays a pivotal role in facilitating this process. Hence the objective of this course- 'Environmental Studies' under paper category Value Education Course (VEC) is intended to make the students to understand the basic concepts of environment, ecology and pollution of the current environmental issues and to participate in various activities on conserving and protecting the environment. It is designed for students interested in studying environmental problems from a scientific perspective. The syllabus of this course is prepared for second semester of all Undergraduate Programs under the Faculty ofall discipline of Punyashlok Ahilyadevi Holkar Solapur University, Solapur. It is multidepartmental as well as interdisciplinary in nature and has been framed as per UGC Model Curriculum under the Credit Framework guidelines of National Education Policy (NEP) 2020.

Evaluation Scheme:

Theory paper has 50 marks out of which 30 marks will be for Term End Examination and 20 marks for College/Internal Assessment. Hence the candidate must appear for both internal evaluation (College Assessment) of 20 marks and external evaluation (University Assessment) of 30 marks.

A) Internal Evaluation (College Assessment):

Internal assessment of 20 marks shall be based on Internal tests, Home assignment, Tutorials, Open Book examination, Seminars, Group discussion, Brain storming sessions etc. Apart from this, Nature Visits/Field Work/Field Tour/Industrial visits of one day with handwritten report of **individual student** may also be conducted under internals evaluation/assessment method. Some of are:

- *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, dam, pond, ocean / marine etc.*

B) External Evaluation (University Assessment):

Nature of Theory question paper:

1) Theory paper is of 30 marks.
2) Nature of Question paper /pattern is as per credits prescribed by University.

Course Objectives:

During this course, the student is expected:

1. To know the importance of environment and various issues in environment.
2. To test the knowledge and understanding of the students in the field of environmental science.
3. To inculcate the positive approach in the students towards environment and ecology from the social perspective.
4. To develop scientific, interpretive and creative thinking skills in the students about environment.
5. To explore the problems that we face in understanding our nature that correlate with socio-economical solution for sustainable development.

Course Outcomes (COs):

At the end of this course the students will abele to:

1. Have awareness on issues with environmental pollution, their effects and possible solutions.
2. Gain knowledge of natural resources, their significance, and the effects of human activity on the resources in environment.
3. Be familiar with biodiversity conservation and its significance.
4. Understand the need of sustainable development for future and become competent and socially responsible citizen of India.

Unit-I : Introduction, Environmental Pollution, Biodiversity, Ecosystems, Natural Resources and Management

Sub-Unit 1: Introduction to Environmental Studies	**Contact Hrs-04**	**Weightage: ~6 Marks**

- Multidisciplinary nature of environmental studies
- Scope and importance; Concept of sustainability and Sustainable Development Goals, Environment Social Governance (ESG), Green Finance and Environmental Economics.
- Environmental pollution types, causes, effects and controls; Air, water, soil and noise pollution, nuclear hazards and human health risks, Solid waste management, 3R Principle and Pollution case studies.

Sub-Unit 2: Biodiversity and Conservation	**Contact Hrs -04**	**Weightage: ~6 Marks**

- Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangeredand 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 and Values of Biodiversity.

Sub-Unit 3: Ecology & Ecosystems:	Contact Hrs -03	Weightage: ~5 Marks
• Structure and function of ecosystem, Energy flow, food chains, food webs and ecological succession. Forest ecosystem, Grassland ecosystem, Desert ecosystem and Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) and case studies.		
Sub-Unit 4: Natural Resources: Renewable and Non-renewable Resources	**Contact Hrs -04**	**Weightage: ~6 Marks**
• 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). • Energy resources: Renewable and non- renewable energy sources, use of alternate energy sources, growing energy needs, case studies.		

Unit II : Environmental Policies, practices, Acts and regulations		
Sub-Unit 1: Environmental Policies & Practices	**No. of lectures-07**	**Weightage: ~10 Marks**
• 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 Convention on Biological Diversity (CBD). • Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.		
Sub-Unit 2: Human Communities and the Environment	**No. of lectures-08**	**Weightage: ~13 Marks**
• Human population growth: Impacts on environment, human health and welfare. • Resettlement and rehabilitation of project affected persons; case studies. • Disaster management: floods, earthquake, cyclones and landslides. • Environmental ethics and Environmental movements: Chipko, Silent valley, Bishnoi's of Rajasthan in environmental conservation. • Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi), National Climate Action Programme (NCAP)		

Text Books:

1. Environmental Studies E-Text Book (Marathi and English Medium) P.A.H. Solapur University, Solapur
2. Environmental Studies – UGC- Text Book for Undergraduate Courses for all Branches of Higher Education – Erach Bharucha, Bharti Vidyapeeth Institute of Environment Education and Research, Pune
3. Text Book Of Environmental Studies, Asthana D.K. and Asthana Meera S Chand & Company
4. A Textbook of Environmental Studies, January 2006 Ahmed Khan ABD Publishers

References:

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2. Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
3. Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
4. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37.
5. McNeill, J. R. 2000. Something New Under Sun: An Environmental History of Twentieth Century.
6. Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
7. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
8. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.
9. Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. 1992.
10. Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.
11. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014.Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
12. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.
13. Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.
14. Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.
15. Wilson, E. O. 2006. The Creation: An appeal to save life on earth. New York: Norton.
16. World Commission on Environment and Development. 1987. Our Common Future. Oxford University Press.

University Assessment (UA)
Punyashlok Ahilyadevi Holkar Solapur University, Solapur
Faculty of Science & Technology.
Nature of Question Paper for CBCS Pattern NEP-2020
w.e.f. AY 2024-25

Time: Total Marks: 30

Instructions
1) All Questions are compulsory
2) Figure to right indicate full marks.

Q.1 Choose correct alternative. (MCQ) **06 Marks**

1)
a) b) c) d)
2)
a) b) c) d)
3)
a) b) c) d)
4)
a) b) c) d)
5)
a) b) c) d)
6)
a) b) c) d)

Q.2. Answer the following. (Any three) **6 (2+2+2)**
A)
B)
C)
D)
E)

Q.3. Answer the following (Any two). **6 (3+3)**
A)
B)
C)

Q.4. Answer the following (Any two). **6 (3+3)**
A)
B)
C)

Q.5. Answer the following (Any one). **6 Marks**
A)
B)
