

KOLHAN UNIVERSITY, CHAIBASA



Syllabus for FYUGP, NEP-2020 UG – Environmental Studies (2022 onwards)

Designed by

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EXAMINATION FRAMEWORK FOR VAC-1

Paper Type	Credits	Full Marks	Pass Marks	End Semester Examination
VAC(Theory)	2	50	20	50

END SEMESTER UNIVERSITY EXAMINATION (ESE):

- For End Semester Examination (ESE 50 marks, 2Hrs Exam), there will be two group of questions. Question No.1 will be very short answer type compulsory question in Group A consisting of five questions of 1 mark each. Group B will contain descriptive type five questions of fifteen marks each, Out of which any three are to answer.

Semester-I
Course Title: Environmental Studies (VAC-1)
THEORY (02 Credits)

Unit	Content of Environment Studies	30 Hours
Unit 1	Introduction to Environmental Studies	6 Hour
	Components of environment: atmosphere, hydrosphere, lithosphere, and biosphere; Scope and importance; Concept of sustainability and sustainable development.	
Unit 2	Ecosystems	8 Hours
	Definition and concept of Ecosystem. Structure of ecosystem (biotic and abiotic components); Functions of Ecosystem: Physical (energy flow), Biological (food chains, food web, ecological succession), and Biogeochemical (nutrient cycling) processes. Concepts of productivity, ecological pyramids and homeostasis. Types of Ecosystems.	
Unit 3	Natural Resources	8 Hours
	Land resources; Soil erosion and desertification; Impacts of mining and dam building on environment; Water resources: Natural and man-made sources; Uses of water; Over exploitation of surface and ground water resources; Floods, droughts, and international & interstate conflicts over water; Energy resources: Renewable and non-renewable energy sources; Use of alternate energy sources.	
Unit 4	Biodiversity and Conservation	8 Hours
	Definition of Biodiversity; Levels of biological diversity; Biodiversity hotspots; Endemic and endangered species of India; IUCN Red list criteria and categories; Threats to biodiversity; Biodiversity conservation strategies: in-situ and ex-situ methods of conservation; National Parks, Wildlife Sanctuaries, and Biosphere reserves.	

Suggested Readings:

- Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
- Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
- Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
- Sengupta, R. 2003. *Ecology and economics: An approach to sustainable development*. OUP.
- Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
- Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
- Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
- Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.