

No. 6-38/2022 (FLS) Environment Science-HPU (Acad.)
Himachal Pradesh University, Summer Hill, Shimla-5
(NAAC Accredited "A" Grade University)
"Academic Branch".

Dated: 10 AUG 2022

To


1. The Dean, Faculty of Life Sciences, HPU, Shimla-5
2. The Controller of Examinations, HPU, Shimla-5.
3. The Director, ICDEOL, HPU, Shimla-5.
4. The D.R. Exam. (UG) HPU, Shimla-5.
5. The D.R. Eval./Re-Eval./Conduct, HPU, Shimla-5.
6. The D. R. Secrecy, HPU, Shimla-5. (with 2 spare copies.)
7. The S.O. Exam (B.A./B.Sc. /B.Com./BHM/BTTM/OTMIL/B.Voc./BBA/BCA
HPU, Shimla-5.
8. The Librarian, HPU Main Library, Shimla-5
9. The Incharge, Computer Centre, Examination Wing (UG), HPU, Shimla-5.

Subject: Complimentary copies of revised Syllabus of Environment Science for UG classes.

Sir/Madam,

I am sending herewith a complimentary copy of revised Syllabus of *Environment Science (UG)*, duly approved by the Standing Committee of Academic Council in its meeting held on 19.07.2022 vide item No. 4, further approved by the Executive Council vide spot resolution No. 3 in its meeting held on 20-07-2022, on the recommendations of the concerned Board of Studies (UG) and Faculty of Life Sciences for its implementation from the Academic Session 2022-23 onwards.


Yours faithfully,


Deputy Registrar (Acad.)
HP University Shimla-5.

Dated: 10 AUG 2022

Endst. No. Even
Copy to:

1. The Chairman, Deptt. of Environment Science, HPU, Shimla-5 for information and send the soft copy in PDF format to web Admin, HPU, Shimla-5 immediately.
2. All the Principal, Govt./Non-Govt., Affiliated Colleges under the Jurisdiction of H.P. University/HPU Regional Centre Dharmshala, Distt. Kangra (HP)/ Principal, Deptt. of Evening Studies, HPU, Shimla-1, running above mentioned course and also requested to kindly download the above mentioned syllabus from the University website i.e. www.hpuni.ac.in.
3. The Web Admin, HPU, Shimla-5, with the request to upload this letter with syllabus on the website.
4. The Dealing Assistant Meeting (Acad.), HPU, Shimla-5. for information.
5. Guard file.


Deputy Registrar (Acad.)

REVISED
ABILITY ENHANCEMENT
COMPULSORY COURSE

Environment Science
Course: ENVS2AECC02
(Theory)

To be implemented from the Academic Session 2022-23 onwards

DEPARTMENT OF ENVIRONMENT SCIENCE
HIMACHAL PRADESH UNIVERSITY
SUMMER HILL, SHIMLA

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COURSE : ENV52AECC2
ENVIRONMENT SCIENCE (THEORY)

Year end Examination: 100 marks

Note: The Examiner will set a total of nine (9) questions covering all topics/units of the prescribed course by setting at least two questions from each unit. Out of the nine questions, one question containing ten (10) short-answer type questions of two marks each that will cover entire course will compulsory. The candidate will attempt a total of five questions (one from each unit) including the compulsory question. All questions will carry equal marks.

Unit 1

Introduction to environmental studies & Ecosystems: Multidisciplinary nature of environmental studies: Scope and importance; what is an ecosystem? ;Structure and function of ecosystem, Energy flow in an ecosystem, food chains, food webs and ecological succession, Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems; 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, 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, Concept of sustainability and sustainable development.

(15 Periods)

Unit 2

Natural Resources & its management and conservation: Land resources and landuse 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 overexploitation 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.

(15 Periods)

Unit 3

Environmental Pollution & Management: Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution, Solid waste management: Control measures of urban and industrial waste. 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.

(15 Periods)

Unit 4

Environment & Social Issues: 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 movements: Chipko, Silent valley, Bishnois of Rajasthan; Environmental ethics: Role of

Indian and other religions and cultures in environmental conservation; Environmental communication and public awareness, case studies.

Dangers and Ill Effects of Drug Consumption

Introduction - Definition of addiction, addict and Mode of action of drugs on body organs. Types of Drugs - Sedatives and tranquilizers, opiate narcotics, stimulants, Hallucinogens, Examples and their harmful effects. Reasons for drug addiction - Curiosity, peer pressure, frustration and depression, family history, prolonged use of drugs for pain relief. Ill effects of drug addiction - on the health of the victim, family and society. Rehabilitation of Drug Addicts - Role of family, friends, society and rehabilitation centres.

(15 Periods)

Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. *Threats from India's Himalaya dams*. *Science*, 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. *Environmental and Pollution Science*. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. Tripathi 1992.
14. Sengupta, R. 2003. *Ecology and economics: An approach to sustainable development*. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.

16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C.E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E.O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.
21. K.S. Reddy. *Essentials of Forensic Medicine and Toxicology*. J.P. Brothers, New Delhi.
22. Gautam Biswas. *Review of Forensic Medicine and Toxicology*. J.P. Borthers, New Delhi.