

COTTON COLLEGE STATE UNIVERSITY

Undergraduate Environmental Science Syllabus

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Paper Code: EVS 102CMP

INTRODUCTION TO ENVIRONMENTAL SCIENCE - II

Credits: 2 (2+0+0)

(32 lectures)

Unit I: Environmental pollution

Definition; Causes, effects and control measures of: Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution and Nuclear hazards; Solid Waste Management: causes, effects and control measures of urban and industrial waste; role of individuals in pollution prevention; pollution case studies; Disaster Management: floods, earthquakes, cyclones, landslides.

Unit II: Social issues and the environment

From unsustainable to sustainable development; urban problems related to energy water conservation, rain water harvesting, watershed management; Resettlement and Rehabilitation of people: its problems and concerns, case studies; Environmental Ethics: issues and possible solutions; climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and nuclear holocaust, case studies.

Wasteland reclamation; consumerism and waste products; environment protection act; Air (Prevention and Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act; issues involved in enforcement of environmental legislation; public awareness.

Unit III: Human population and the environment

Population growth, variation among nations; Population Explosion: family welfare program; environment and human health; human rights; value education; HIV/AIDS; Women and child welfare; role of information technology in environment and human health.

Unit IV: Sustainable development

Introduction to sustainable development; economic growth and progress; continuing poverty; path of sustainable development; UN goals of sustainable development.

Field work (one of the following):

1. Visit to a local area to document environmental assets, river/ forest/ grasslands/ hill/ mountain;
2. Visit to a local polluted site;
3. Study of common plants, insects, birds;
4. Study of simple ecosystems.

Basic textbook:

Textbook for Environmental Studies For Undergraduate Courses of all Branches of Higher Education; by Erach Bharucha for University Grants Commission, 2004, UGC;
<http://www.ugc.ac.in/oldpdf/modelcurriculum/env.pdf>

Recommended material for Unit IV:

1. http://www.un.org/en/development/desa/policy/untaskteam_undf/presentation_untt_report.pdf
2. http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E
3. <http://sustainabledevelopment.un.org/focussdgs.html>
4. <http://www.post2015hlp.org/wp-content/uploads/2013/05/UN-Report.pdf>

Further Readings (R: Reference; M: Magazine; TB: Textbook):

1. Agarwal, K.C. 2001 *Environmental Biology*, Nidi Publ. Ltd. Bikaner
2. Bharucha Erach, *The Biodiversity of India*, Mapin Publishing Pvt. Ltd., Ahmedabad, India, Email:mapin@icenet.net (R)
3. Brunner R.C., 1989, *Hazardous Waste Incineration*, McGraw Hill Inc.
4. Chary S.N., 2008, *Environmental Studies*, Macmillan India Ltd.
5. Chawla Shashi, 2012, *A Textbook of Environmental Studies*, Tata McGraw Hill
6. Clark R.S., *Marine Pollution*, Clarendon Press Oxford (TB)
7. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, *Environmental Encyclopedia*, Jaico Publ. House, Mumbai, 1196
8. De A.K., *Environmental Chemistry*, Wiley Eastern Ltd.
9. *Down to Earth*, Centre for Science and Environment (R)
10. Gleick, H.P. 1993. *Water in crisis*, Pacific Institute for Studies in Dev., Environment & Security, Stockholm Env. Institute Oxford Univ. Press
11. Hawkins R.E., *Encyclopedia of Indian Natural History*, Bombay Natural History Society, Bombay (R)
12. Heywood, V.H & Waston, R.T. 1995. *Global Biodiversity Assessment*, Cambridge Univ. Press
13. Jadav, H & Bhosale, V.M. 1995. *Environmental Protection and Laws*, Himalaya Pub. House, Delhi.
14. Mckinney, M.L. & Schoch, R.M. 1996. *Environmental Science systems & Solutions*, Web enhanced edition
15. Mhaskar A.K., *Matter Hazardous*, Techno-Science Publication (TB)
16. Miller T.G. Jr. *Environmental Science*, Wadsworth Publishing Co. (TB)

17. Odum, E.P. 1971. *Fundamentals of Ecology*. W.B. Saunders Co. USA, 574p
18. Rao M. N. & Datta, A.K. 1987. *Waste Water treatment*. Oxford & IBH Publ.Co. Pvt. Ltd.
19. Sharma B.K., 2001. *Environmental Chemistry*. Geol Publ. House, Meerut
20. *Survey of the Environment*, The Hindu (M)
21. Townsend C., Harper J, and Michael Begon, *Essentials of Ecology*, Blackwell Science (TB)
22. Trivedi R.K., *Handbook of Environmental Laws, Rules Guidelines, Compliances and Standards*, Vol I and II, Enviro Media (R)
23. Trivedi R. K. and P.K. Goel, *Introduction to air pollution*, Techno-Science Publication (TB)
24. Wanger K.D., 1998 *Environmental Management*. W.B. Saunders Co. Philadelphia, USA