ARSD College, University of Delhi

Course Handout/Lesson Plan

Practical

Course Name : AEC 1: Environmental Science: Theory into Practice – I						
Semester	**Course Code**	**Course Title**	**Lecture (L)**	**Tutorial (T)**	**Practical (P)**	**Credit (C)**
II	2181001001	B.A. Hons English	**01**	**-**	**01**	**02**
Teacher/Instructor(s)		Dr. Kanchan Srivastava				
Session		2022-23				

Learning Objectives

The Ability Enhancement Course on Environmental Science: Theory into Practice (I & II) at Undergraduate level (AEC- I) aims to train students to cater to the need for ecological citizenship through development of a strong foundation on the critical linkages between ecology-society-economy.

The Learning Objectives of this course are as follows:

• **Disciplinary knowledge**

Enable students to develop a comprehensive understanding of various facets of life forms,ecological processes, and the impacts on them by humans during the Anthropocene era.

• **Critical thinking**

Build capabilities to identify relevant environmental issues, analyse the various underlying causes, evaluate the practices and policies, and develop framework to make informed decisions.

• **Moral and ethical awareness/reasoning**

Develop empathy for all life forms, appreciation for the various ecological linkages within the web of life, awareness and responsibility towards environmental protection and nature preservation.

Learning outcomes

After the course the students will be empowered and able to:

• Analyse natural processes and resources that sustain life and govern economy.

• Predict the consequences of human actions on the web of life, global economy, and quality of human life.

• Think critically and develop appropriate strategies (scientific, social, economic, administrative, and legal) for environmental protection, conservation of biodiversity, environmental equity, and sustainable development.

• Demonstrate values and show compassionate attitudes towards complex environmentaleconomic-social challenges, and participate at national and international levels in solving current environmental problems and preventing the future ones.

• Adopt sustainability as a practice in life, society, and industry.

Details of the Lab Course		
Session	**Name of Experiment**	**Contact Hours**
Unit 1	Analysis of achievement of Sustainable Development Goals of anycountry. (India)	2hr
Unit 2	1. Field visit to Terrestrial Ecosystem (a)- Grassland Ecosystem (b)- Forest Ecosystem 2. Field visit to Aquatic Ecosystem-Lake 3. Field visit to Wetland Ecosystem 4. Field visit to Biodiversity Park 5. Schematic collection of data for depicting ecological pyramids in the College campus 6. Develop a working model of any ecosystem 7. Differentiation of natural and managed ecosystems using Google Earth/Google Map	2hr, 2hr, 2hr, 2hr
Unit 3	**1.** Visit to a paper recycling unit **2.** Visit to a rainwater harvesting plant **3.** Mapping of natural resources of a given study area using Google Earth **4.** Comparison of energy demand and consumption of a particular state over the years using graphical tools **5.** Time-series analysis of natural resource consumption of a given country using publicly available data **6.** Develop and understand working model of renewable/non-renewable sources of energy	2hr, 2hr, 2hr, 2hr, 2hr
Unit 4	1. Determine water quality of a given location using rapid pollution monitoring kits 2. Assess air quality index (AQI) of any location using real-time air quality parameters 3. Prepare water audit report of the college/**house**/locality/colony. 4. Develop and maintain compost/vermicompost using biodegradable waste in the College 5. Identify suitability of given water samples for various purposes using given kits 6. Determine magnitude of solid waste generated in a home/college on a monthly basis Students parameters Green Biodegradable & Non Biodegradable	2hr,2hr, 2hr,2hr, 2hr
	Total	**30**
Suggested Books:		

Sl. No.	Name of Authors/Books/Publishers	Year of Publication/Reprint
1.	Divan, S. and Rosencranz, A. (2002). Environmental Law and Policy in India: Cases, Material & Statutes, 2nd Edition. Oxford University Press, India.	2002
2.	Raven, P.H, Hassenzahl, D.M., Hager, M.C, Gift, N.Y. and Berg, L.R. (2015). Environment, 9th Edition. Wiley Publishing, USA.	2015
3.	Singh, J.S., Singh, S.P. and Gupta, S.R. (2017). Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.	2017
4.	Gadgil, M. and Guha, R. (1993). *This Fissured Land: An Ecological History of India*. University of California Press, Berkeley, USA.	1993
5.	McCully, P. (1996). *Rivers no more: the environmental effects of dams*, In: *Silenced Rivers: TheEcology and Politics of Large Dams*, Zed Books, New York, USA.	1996

Evaluation Scheme:

No.	Component	Duration	Marks
1.	Continuous Assessment Viva, Project report		20+10
2.	End Semester Examination	1.00 hr	40(10+20+10)