SEMESTER – V

DSE-03A : Discipline Specific Elective - 3
Climate Change and Environmental Degradation

B.A. (Hons.) Humanities & Social Sciences - Semester V
Cluster Innovation Centre, University of Delhi

Credit Distribution, Eligibility and Pre-requisites of the Course						
Course Title & Code	Credits	Credit Distribution			Eligibility Criteria	Pre-requisite
		L	T	P		
Climate Change and Environmental Degradation (UPC: 3123100013)	4	1	0	3	Class XII Pass	Students must be familiar with concepts taught in any course under DSE-02
L = Lecture; T = Tutorial; P = Practical/Practice; UPC = Unique Paper Code						

Learning Objectives

- To enable students to understand and address the risks from climate change and environment degradation.
- To enable students to assess the natural hazards, vulnerabilities and risks associated with climate change.
- To help students determine the public perception on climate change and environment degradation.

Learning Outcomes

- Students will develop adequate knowledge of the complexity and relationship between climate change and environment degradation.
- Students will be able to do quantitative and qualitative assessment of climate change using spatial data.
- Students will be able to design strategies to counter and change public perception on climate change and environment degradation.

Outline of DSE-03A

Environmental degradation which is a consequence of centuries of unsustainable practices has further been exacerbated by climate change in more recent times. The combined effect of climate change and environmental degradation affects all types of development initiatives that various countries have taken up. This project will thus involve encouraging students to understand the factors responsible for climate change, its relationship with environmental degradation, ways to mitigate the negative consequences of climate change and environmental degradation and also initiate discussions on sustainable efforts through workshops, awareness programs and hands-on learning.

Theoretical Component (15 Hours)

Overview of carbon emission, interaction between air pollutants in the atmosphere, introduction to atmospheric science and climatic phenomenon, introduction to water budget systems in the atmosphere, biosphere and lithosphere, climate change and impact to the various communities of plants and animals such as habit shift, drought, migration etc.

Indicative Themes

- Impact of Human Activity on Environment
- Preserving Ecosystems
- Mitigation and Adaptation

Practical component (90 hours)

- Mapping using GIS software
- Open Source Database from Earthexplorer.
- Open soure databse from IPCC (Intergovernmental Panel on Climate change e.g., Bioclim, Worldclim
- Spatial database creation, manipulation, analysis and visualisation.
- Vector and Raster database.
- Analysis of Land use Land cover analysis through Landsat series,, Sentinel database
- Analysis of Topography database through SRTM and Aster database.

Readings

1. IPCC. (2021). *Climate Change 2021: The Physical Science Basis*. Cambridge University Press.
2. Jacobson, M. Z. (2012). *Air Pollution and Global Warming*. Cambridge University Press.
3. Archer, D. (2011). *Global Warming: Understanding the Forecast*. Wiley.
4. McMichael, A. J. (2013). *Climate Change and the Health of Nations*. Oxford University Press.
5. Steffen, W. et al. (2015). "Planetary Boundaries." *Science*, 347(6223).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

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