



BUNDELKHAND UNIVERSITY, JHANSI

Syllabus for Postgraduate Courses M.Sc.

CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION

Total Credits: 4

Unit I: Introduction

Climate in the spotlight climate and weather, climate of India, Natural greenhouse effect, climate change factors – Natural factor & anthropogenic factor.

Unit II: Global warming

Greenhouse gases: role of CO₂, role of CH₄, Global warming potential, CO₂ Emission – human Emission of CO₂, Remedial measure to reduce global warming, Global cooling.

Unit III: Ozone Layer Depletion

Vienna convention on the protection of ozone layer – 1985, Montreal protocol, protection and maintenance of ozone layer, Indian efforts for ozone layer protection. El-Nino and its effects, La-Nina, impact of climate change on India.

Unit IV: Sustainable Development

Brundtland Commission, UN Environmental Agenda, role of U.N. agencies, World Environment Organization, climate change convention-1992, Earth Summit, Agenda 21, IPCC, Global Environment Facility.

Unit V: Impact of Climate Change and Global Warming

Impact of Climate Change in India: Pattern change of Rainfall, Drought, Effects on water resources, Sea Level Rise, Impacts on Agriculture, Impacts on food security, Impacts on Glacier, Impacts on Health, Impacts on energy security, Impacts on Biodiversity.

Climate change & disaster in India, Urban flood, Cyclone, Forest fire

Suggested Readings:

1. **Encyclopedia of Global Warming and Climate Change** By George Philander, SAGE Publications Inc; First edition, 2008.
2. **Atmosphere, Weather and Climate** By Roger G. Barry, Richard J Chorley, CRC Press, 2010.
3. **Global Warming: The Complete Briefing** By John Houghton, Cambridge University Press; 4th edition 2009.