

Semester – III
SC (Env-522:- Global Environmental Crises& Climate Change)

(Theory Core Course with 04 credits)

Course Objectives

Students will be able to know

1. Concepts of climate change, Strategies of green house warming.
2. Global Environmental problem, developmental priorities in India.
3. Environmental movements and controversies, Reclamation of Alkaline and saline soil.
4. Natural Hazards & Man made hazards, Control Measures.

Teaching Scheme

Lectures	:-	4hr/week
Tutorials	:-	1 hr/ week
Test	:-	1 hr/week
Total Credit	:-	04

Evaluation Scheme

Continuous Internal Assessment by Teacher	:-	20 Marks
Sem-End Examination	:-	80 Marks
Total Marks	:-	100 Marks

Unit – I: Climate Change:-

Climate change- introduction, concept and phenomenon; Climate change and its impact on agriculture, its impact on agricultural biodiversity, climate change and emerging of new kinds of diseases and epidemics; Human health problems , climate change and its impact on hydrological cycle - rainfall, icefall, surface water resources; Climate change and oceanic environment; IPCC reports ; Energy policies in Asia in light of climate change; Strategies to handle green house warming - China's stand; Reply of Malaysia to Global Climate change; India's action plan on climate change.

Unit – II: Global and local environmental issues:

Global environmental problems- global warming concept and considerations; green house emission rate; ozone layer depletion; Cycles of global environment change; Scientific evidences of greenhouse effect or to global warming ; Effect of Global warming : atmospheric gases and their impacts on ionosphere, Meteorology and dispersion of atmospheric gases, Green house effects current status, polar ice caps and snow melting due to temperature fluctuation, Health and hygiene considerations due to global warming; Global warming and other related environmental problems with respect to aquaculture,

Unit – III : Environmental and developmental priorities in India :

Developmental priorities in India, Pre independence and post independence development, Industrialization, Green revolution, Urbanization, developmental priorities vs. environmental priorities, resource depletion and degradation due to improper priorities such as water, soil, forest etc in India.

Unit – IV : Global environmental Movements and controversies:

Environmental movements - Environmental movements and peoples responses; Green peace, world watch Institute, wetland international etc. Indian environmental movements and initiatives Chipko, Apico, Narmada Bachao Andolan, Save western Ghats, Environmental Controversies : social political and economic issues in the controversies, Narmada Project, Almatti dam, Sarda Sarovar project, Tehri dam, Koyna dam, MIC gas tragedy, Chernobyl tragedy, Mahtura Refinery case, Silent valley, Rehabilitation and settlement issues, government policies and social awareness for the protection of environment. Reclamation of alkaline and saline soils, Interstate river water disputes.

Unit – V : Natural Man made Hazards: :

Flooding, Nature and frequency of flooding, Impacts of flood hazard; urbanization and flooding; flood mitigation methods; land slide – causes and consequences; human land use and landslides; prevention and control of land sliding, Coastal hazards; tropical elegance and tsunamis; coastal erosion; sea level changes and its impact on coastal areas. Earthquakes; causes, intensity and magnitude of earthquakes; causes; geographic distribution of earthquake zones, seismic waves, travel time and location of epicenter; natures of destruction; ground subsidence; protection from earthquake hazards; volcanism; nature and causes of volcanism, volcanism and climate. Social and economic impact of natural disasters; Manmade Hazards :- Industrial accidents; causes and effects of hazardous waste, chemical waste and their disposal and control, oil spills-causes, impacts and control, manmade hazards; forest fire, industrial fires and control; environmental degradation due to wars.

Current development in the subject

Course Outcome

Students should be able to:

1. Locate global environmental issues
2. Compare climatic change effects on natural environmental components
3. Correlate developmental priorities in India
4. Evaluate controversial issues and its mitigations

References

1. Coastal Zone Management by Dr. Ramakrishnan Korakandy.
2. Environment Security and Tourism Development in South Asia by V.C. Pandey
3. Environment and its Global Implications by Gopal Bhargava.
4. Indian Vistas of Environment by Chittabrata Palit and Mahua Sarkar.
5. The Immanent Disaster A vision on Climate change by Sampooran Singh
6. Natural Resources of Himalaya by K.S.Gupta/
7. Fly Ash Amendment and plant Growth by Dr. S.M. Mohan
8. Environmental Education by Archana Tomar
9. Disaster management by S.Narayan
10. Biodiversity and Ecosystem Conservation by Ashish Dutta
11. Corporate governance for sustainable environment by Ramesh Chandra and RituAneja
12. Global warming and climate changes transparency and accountability ed by Gopal Bhargava.
13. Energy and environment in india by K.C.Gupta