

ELECTIVE COURSE

GEOG.711:

CLIMATE CHANGE STUDIES

3(3-0)

Course Objectives

The climate change is challenge for sustainable development and it has got paramount significance globally. This course is designed to educate students on climatic changes, adaptation, mitigation, strategies which are felt a need in each organization for pursuing socio-economic development in the scenario of global warming.

Learning Outcomes

After taking this course, the students will be able to;

- Understand the concept of climate change and its factors
- Learn about the climate change and its impacts in the global context
- The impacts of climate change in Pakistan

Course Outline

1. Introduction

- Scope and status of climate change
- Concept of global warming and greenhouse effect; acid rain, ozone depletion
- Difference in climate variability and climate change; the interactions between the oceans and atmosphere.
- The earth's energy budget

2. Global Climate Change

- Atmospheric circulation and its relation with climate change
- Sea surface temperature anomalies; El Nino and La Nina

3. Natural and Anthropogenic Factors

- Changes in precipitation and temperature patterns
- Droughts; climate change and its impact on agriculture and urbanization

4. The Climate Change and Pakistan

- Climate change with spatial reference to Pakistan
- Is climate change a controversial issue?

Recommended Books

1. Susanne C. et.al. Successful Adaptation to Climate Change: Linking Science and Policy in a rapid changing world.
2. Houghton J.T(2004) "Global Warming -The Complete Briefing",3rd ed.Cambridge Uni; Press.
3. Keith, A (2005) "Global Change and the earth system",(ed), Sringer.
4. IPCC (2005) "Climate Impact and Adaptation Assessment" , Earth scan Publication Ltd, London.
5. Hardy, J. T (2003) "Climate Change: Causes, Effects and Solutions, 1st Ed. John Wiley & Sons.
6. Global Warming and Climate Change, Researchers at Carnegie Mellon University, 1994.