Climate Change & Global Warming

Syllabus

Instructor
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Course Summary:

This course will be an intense study of climate change. Climate history of the Earth climate processes; scales of heat and mass transfers in the atmosphere; the role of oceans; scales of climate change, historical and future climate change; global warming; causes of climate change; modeling the climate; predicting climate change, the rate of climate change, human effects on climate; health impacts of climate change; ecosystem impacts of climate change, options for response, linkages with resource management and sustainable development, ongoing policy debates at the international scale including responses to the Kyoto Protocol.

Recommended Texts:

1) JT Houghton (2009). Global Warming: The Complete Briefing, 4th Ed. Cambridge University Press. ISBN 0-521-52874-7

2) WJ Burroughs (2001). Climate Change: A Multidisciplinary Approach. Cambridge University Press. ISBN 0-521-56771-8

Course Outline and schedule

Week 1	Atmospheric Structure, General Air Circulation, Ozone hole,
Week 2	Climate Elements and Forcing (Factors including sun spots), Ocean-Atmosphere Interaction
Week 3	Air Pollution and Green House Effect
Week 4	Climate in The History, Evidences that the climate is changing
Week 5	Modelling
Week 6	Consequences: Temperature increase, Glacier melting, Sea-Level rise,
Week 7	Consequences: El-Nino and La-Nina, Hurricanes, Tornadoes, Flood and Drought, Desertification, Water Scarcity
Week 8	Consequences: Refugees, Food security, diseases
Week 9	Mitigation and Adaptation
Week 10	International Climate Change Pannell
Week 11	Treaties, Koyoto –Carbon Credits and Carbon Trade
Week 12	Copenhagen, what is next?
Week 13-	Final

Class Evaluation

First Exam	30%
Second Exam	30%
Final Exam	40%
TOTAL	100%