

EN681: Climate Change

Teaching Scheme			Credits	Marks Distribution				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE	CE	ESE	CE		
3	2	0	5	70	30	30	20	150

Course Content:

Sr. No.	Topics	Teaching Hrs.
1	<p><u>Basics of climate change:</u></p> <p>Science of climate change, Natural climatic variability Global warming, Natural and enhanced greenhouse effect, Greenhouse gases & Carbon emissions, Climate modeling.</p>	08
2	<p><u>Green House Gases:</u></p> <p>Carbon dioxide & climate change, Methane & climate change, Nitrous oxide & climate change, CFCs & climate change.</p>	08
3	<p><u>Policies and legislation:</u></p> <p>International and national legislative frameworks- UNFCCC, IPCC and Kyoto protocol: Scientific and implementation bodies of Kyoto, Kyoto mechanisms-CDM, Joint implementation and Emission Trading, Decisions of Conference of Parties (COP) and Meeting of Parties (MOP), Carbon markets- CERs, Environmental Economics- Issues include the costs and benefits of alternative environmental policies to deal with air pollution, water quality, toxic substances, solid waste, and global warming.</p>	08
4	<p><u>Impacts and adaptation:</u></p> <p>Causes and severity of impacts, Vulnerability of various sectors like water resources, agriculture, forest, energy sector, coastal zones, human health, Adaptation strategies & options.</p>	08

5 **Climate change mitigation:**

08

GHG emission trends, Climate change mitigation policies, Mitigation technologies for transport, infrastructure, industry, waste, energy sector Renewable and alternative energy, Green building.

Total Hrs. 40

Reference Books:

1. IPCC Fourth Assessment Report, Cambridge University Press, Cambridge, UK.
2. Eileen Clausen, Vicki Arryo and Cochran, “*Climate Change: Science, strategies & solutions*”.
3. William Kininmouth, “*Climate change: a multidisciplinary approach*”.
4. Frank Chambers and Michael Ogle, “*Climate change: Critical Concepts in the environment*”.