

TOPICS IN CLIMATE RESEARCH
AT 755

Course Description:

This course is a survey of current topics in climate research, including the decadal to paleoclimate observational record, the impacts of climate on energy, water, and food, and global climate modeling with the CSU General Circulation Model.

Prerequisites:

AT 606

There is no required textbook.

Student learning objectives:

To obtain a research-level understanding of current problems in climate research on time scales between 10 and 10⁶ years.

Course Syllabus

Week	Lecture	Topic
1	1	Background and Organization; Climate Applications
	2	Scope of Climate Studies and Scope of this class
2	3	Global Change and the Carbon Cycle
	4	Overview of Climate Change in the Context of “Global Environment Change: Research Pathways for the Next Decade”
3	5	Student Group Discussion; Class Projects
	6	Climate Theory; Climate Forcing; Climate Feedbacks I
4	7	Climate Theory; Climate Forcing; Climate Feedbacks II
	8	Climate Theory; Modern Era
5	9	Long-term Global Climatologies
	10	DEC/CEN Observational Record
6	11	Paleoclimate
	12	Interann. And Dec. Var. in Colorado
7	13	Climate and Health
	14	Climate Forecasts and Commodities
8	15	Climate and Energy
	16	Climate and Water
9	17	Local Hydrologic Records
	18	Climate and Food
10	19	The CSU Climate Model
	20	Coupled Oceans/Atmos. Climate Models and ENSO Results
11	21	Climate Forecasts
	22	Management of Water Resources in the West; Use of Precipitation Climatologies and Forecasts I
12	23	Management of Water Resources in the West; Use of Precipitation Climatologies and Forecasts II

	24	Climatology and Persistence Forecasts
13	25	Major Climate Fluctuations
	26	Class Reports/Posters
14	27	Class Reports/Posters
	28	Class Reports/Posters
15	29	Class Reports/Posters

Course Grading is based on the student's class project. Both an oral and written presentation of this research project is given at the end of the semester. Grading is as follows:

Oral presentation 50%
Written presentation 50%