Intro. General Circulation
EAPS 53600

Overview
This course of Introduction to General Circulation provides an overview of the general circulation of the atmosphere and ocean. This course covers the global energy balance, hydrological cycle, atmospheric general circulation & climate, ocean general circulation & climate, history & evolution of Earth’s climate, climate sensitivity & feedback mechanisms, global climate models, natural climate change and anthropogenic climate change. This course is a combination of lectures and paper readings & presentations.

Goals
To gain a scientific understanding of the general circulation of the atmosphere and ocean, its natural variability and human-induced change.

Requirements
This course is mostly for graduate students but seniors in atmospheric science major are also encouraged to attend. Prerequisites are calculus and College Physics (mechanics/thermodynamics/Atmospheric Dynamics I).

Evaluation
Grading: homework (once every two weeks): 30%, a midterm exam: 30% and paper reading, presentation & report (maximum of 5 pages): 40%. Students are encouraged to form groups (two or three students per group) and select research topics that they are interested. The research topics may be: 1. Why is the Inter-tropical Convergence Zone (ITCZ) peak in the Northern Hemisphere? 2. Why does the South Asian monsoon circulation exist? 3. What’s the role of the stratosphere for weather and climate?

Required textbooks


Milestones
August 26, 2014
First day of class
October 2, 2014
Students form groups and select & submit research topics
October 23, 2014
Midterm exam
December 9 and 11, 2014
Class presentations by the students & report submissions