Climate Dynamics

Goal:

A conceptual basis for understanding of how earth's climate system (atmosphere, ocean, land, and cryoshpere) operates and how it changes under "natural" and "external" forcings will be discussed. The goal is that the students apply these concepts to understand the climate changes of the past, present, and future conditions.

The course will consist of 30% of "thermodynamics", 30% of "radiative transfer", and 40% of "climate feedbacks".

Prerequisites:

First-year college level physics, First-year college level calculus (but not assumed).

Grading:

Homeworks and one class presentation of "review" articles (~40%)
Midterm exam (~30%)
Final exam (~30%)

Text:

Required
Wallace, J. M. and P.V. Hobbs, "Atmospheric Science: An Introductory Survey (2nd)", Academic Press, 2006.

References
Hartmann, D. L., "Global Physical Climatology", Academic Press, 1994.
Open University Course Team Staff, "Ocean circulation (2nd)", Butterworth-Heinemann, 2001.
Peixoto, J. P. and A. H. Oort, "Physics of Climate", AIP, 1992.