

Global Climate Change

GEOS 498 (3 units)

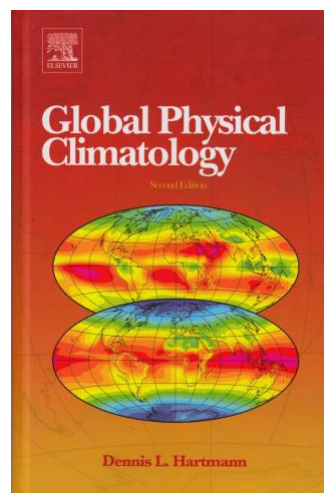
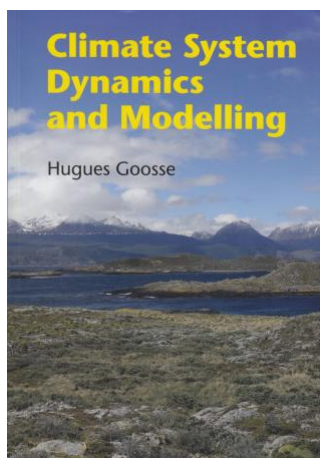
Mondays and Wednesdays from 4:00 to 5:15 PM, PHSC 213

Instructor: Dr. Shane Mayor



This 3-unit, upper-division, lecture-based course will focus on physical processes and energy imbalances in the atmosphere, ocean, and cryosphere that result in global climate change. It will also introduce students to climate system dynamics and climate modeling. Topics will include atmospheric radiative transfer; the effect of aerosol particles and greenhouse gases; the thermodynamics of moist air, clouds, and convection; the energy balance at the surface; the hydrologic cycle with emphasis on precipitation and the cryosphere, general atmospheric and oceanic circulations; the global energy balance; and natural and anthropogenically forced climate change.

Two books are currently being considered as required for the course: First, *Climate System Dynamics and Modelling* by Hugues Goosse, ©2015, Cambridge University Press. 351 pages. Second, *Global Physical Climatology*, Second edition, by Dennis L. Hartmann, ©2016, Elsevier, 485 pages.



Prerequisites: GEOS 170, PHYS 202A or PHYS 204A and MATH109 or MATH 120 or permission from the instructor.