

Mathematics and Climate

Mathematics 5750-3 and 6880-3, SPRING 2020
Mondays, Wednesdays, 11:50 AM – 1:10 PM, AEB 306

Instructor: Ken Golden, Distinguished Professor of Mathematics
LCB 328, +1 801-750-8555, golden@math.utah.edu
www.math.utah.edu/~golden/

Math 5750/6880 is an introduction to the mathematical study of Earth's climate system. Topics include planetary energy budgets, oceans and climate, box models, dynamical systems and tipping points, the Lorenz model, advection diffusion processes, the Milankovitch theory of glacial cycles, and the cryosphere, including sea ice and the great land ice sheets covering Antarctica and Greenland.

Students are expected to be familiar with calculus, linear algebra, and differential equations, and to be comfortable with mathematical descriptions of physical phenomena.

There will be a short paper (3-5 pages) due at the end of the semester on a topic chosen by the student. The paper should focus on some aspect of the climate system that is interesting mathematically as well.

TEXT: *Mathematics and Climate* by Hans Kaper and Hans Engler (SIAM, 2013)

