

GEOS 517: The Atmospheric Environment

Semester	Fall 2011
Instructor	Dr. Shane D. Mayor
Lectures	Mon., Wed., Fri. 10:00–10:50 AM in Physical Science Building (PHSC) 119
Office hours	Available by appointment
Office	Currently Holt 148 Changing to PHSC 126 after September 17 I can often be found in PHSC 121B (Atmospheric Lidar Group Computational Lab)
Mailbox	Physics Dept. Office (PHSC 106A)
Phone	898–6337
E-mail	sdmayor@csuchico.edu
Required Reading	Climate Change 2007: The Physical Science Basis © Intergovernmental Panel on Climate Change 2007 Hardcopy not required but currently available on Amazon.com for \$70. PDF may be downloaded for free from: www.ipcc.ch CO ₂ Rising, The World's Greatest Environmental Challenge, By Tyler Volk © 2008 Massachusetts Institute of Technology
Course Grade	Grades will be based upon the usual variety of factors including assignments, quizzes, and exams. Quizzes may be unannounced. Class participation and note taking are particularly important. A portion of your grade will be based upon attendance. If you cannot attend class due to illness, please call or send me an e-mail before class.
Course Goal	For students to be able to list and distinguish the main constituents of the atmosphere and the physical processes that control atmospheric structure, transport, weather, and climate. Also, the ability to discuss key issues in climate change and air quality.
Topics	Composition of the atmosphere and the radiative effects of the constituents, especially greenhouse gases and aerosols. Vertical structure of the atmosphere. Effects of stratification, rotation, the surface, and terrain. Microscale and mesoscale. Turbulence, internal waves, and the atmospheric boundary layer. Direct and indirect effects. Feedbacks. Coupling of the atmosphere and oceans. The carbon cycle. Air quality.
Final Exam	Wednesday, December 14, 10:00–11:50 AM, PHSC 119