

Physical Climatology 16:107:545

Prof. Anthony J. Broccoli

Fall 2018

Textbook

Hartmann, Dennis L., *Global Physical Climatology* (Second Edition), Amsterdam, Elsevier, 485 pp.

Homework

Four homework assignments involving quantitative problem-solving.

Exams

Two exams, a midterm and a final; open book and notes, but no electronic devices.

Final project

The final project will be an analysis of climate data or climate model output. You choose the data set to analyze and the analysis method. You will see examples of how climate data are analyzed during the course of the semester. Results from the project will be communicated in the form of a written report and an oral presentation.

Course website

Physical Climatology Fa18 on Sakai (sakai.rutgers.edu)

Grading

Homework assignments (total of 4): 5% each

Midterm exam: 25%

Final exam: 25%

Final project: 30%

Contact information

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Schedule of class meetings (subject to change)

Sept. 5	Introduction to the Climate System (Hartmann, Ch. 1)
Sept. 10	Introduction (cont.); Global Energy Balance (Hartmann, Ch. 2)
Sept. 12	Global Energy Balance (cont.)
Sept. 17	Global Energy Balance (cont.); Atmospheric Radiative Transfer (Hartmann, Ch. 3)
Sept. 19	Atmospheric Radiative Transfer (cont.)
Sept. 24	Surface Energy Balance (Hartmann, Ch. 4)
Sept. 26	class cancelled (AMS Council Meeting)
Oct. 1	Surface Energy Balance (cont.);
Oct. 3	Hydrologic Cycle (Hartmann, Ch. 5)
Oct. 8	Hydrologic Cycle (cont.); Atmospheric General Circulation (Hartmann, Ch. 6)
Oct. 10	Atmospheric General Circulation (cont.)
Oct. 15	Ocean General Circulation (Hartmann, Ch. 7)
Oct. 17	“ “ “
Oct. 22	Midterm exam
Oct. 24	Natural Climate Variability (Hartmann, Ch. 8)
Oct. 29	“ “ “
Oct. 31	History of Earth's Climate (Hartmann, Ch. 9)
Nov. 5	Climate Sensitivity and Feedbacks (Hartmann, Ch. 10)
Nov. 7	Global Climate Models (Hartmann, Ch. 11)
Nov. 12	Natural Climate Change (Hartmann, Ch. 12)
Nov. 14	Rutgers Climate Symposium
Nov. 19	Natural Climate Change (cont.)
Nov. 26	Anthropogenic Climate Change (Hartmann, Ch. 13)
Nov. 28	“ “ “
Dec. 3	Final project presentations
Dec. 5	Final project presentations
Dec. 10	AGU Meeting (Washington, DC)
Dec. 12	“ “ “
Dec. 17	Final exam