ATMOSPHERIC CHEMISTRY

CHEM F606 (cross listed as ATM F606) Overview and Schedule ---- Spring 2017

Instructor	Dr. Jingqiu Mao (Reichardt 188, Akasofu 318, 474-7118, jmao2@alaska.edu)
Office Hours	Tu, Th 11:20A-13:00P and any other time by appointment
Class	Tu, Th, 9:45A-11:15A, REIC 204
Text:	Introduction to Atmospheric Chemistry, Daniel J. Jacob
	(Available online: http://acmg.seas.harvard.edu/people/faculty/djj/book/index.html)
Supplements	Atmospheric Chemistry and Physics: from Air Pollution to Climate Change, John H. Seinfeld and Spyros N. Pandis, 3rd Edition.

Course Description (from catalog):

Chemistry of the lower atmosphere (troposphere and stratosphere) including photochemistry, kinetics, thermodynamics, box modeling, biogeochemical cycles and measurement techniques for atmospheric pollutants; study of important impacts to the atmosphere which result from anthropogenic emissions of pollutants, including acid rain, the “greenhouse” effect, urban smog and stratospheric ozone depletion. Special fees apply. Prerequisites/Co-requisite: ATM F601 or permission of instructor. (Cross-listed with ATM F606. Stacked with CHEM F406.) (3+0)

Course objectives / Learning Goals:

By the end of the semester, you will have a basic knowledge of:

- The atmospheric chemical composition
- The transformations of these compounds

Midterm exam	20%
Final exam	20%
Problem sets	40%
Project/presentation and in-class discussion	20%

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Tentative Schedule:

Wk	Dates	Topic	Reading
1	17,19 Jan	Introduction/ Atmospheric chemical composition	1,2
2	24,26 Jan	Simple atmospheric models; lifetimes	3
3	31 Jan, 2 Fe	Atmospheric Transport and geochemical cycling	4.2,4.3
4	7,9 Feb	Oxidation states of elements and geochemical cycles	6
5	14,16 Feb	Aerosol particles / Radiative forcing	7
6	21,23 Feb	Aerosol particles	8
7	28Feb,2 Ma	Kinetics & Equilibrium & **Midterm Exam**	9.1-9.2
8	7,9 Mar	Photochemistry / Stratospheric ozone	9.3, 10.1