Atmospheric Sciences: Atmospheric Remote Sensing 666
T Th 2pm-3:30pm in TBD

Instructor: Prof. Kenneth Sassen
Office: IARC 301 Email: ksassen@gi.alaska.edu
Phone: 474-7845 Fax: 474-7290
Office Hours: T Th 3:00-5:00 PM, IARC 301

For homework I will ask for a combination of occasional assignments and a 10-12 (double-spaced) page research paper giving a detailed account of a remote sensing research topic of your choice. You will provide the background of your topic through a comprehensive literature search, describe the instrument design and theory, and review how the data has added to our knowledge of the atmosphere. So, keep you eyes open for a topic of interest during the semester. The paper will be due one week before the end of classes, but can be submitted at any time.

Ethics:
Do not cheat on your exams or plagiarize your paper- you are only cheating yourself. Any student turning in a paper not written by himself/herself (such as copied from the Internet or purchased from a company) will flunk the entire course.

Disabilities:
Students with documented disabilities who may need reasonable academic accommodations should discuss these with me during the first two weeks of class. You will need to provide documentation of your disability to Disability Services in the Center for Health and Counseling, 474-7043, TTY 474-7045.

Schedule:

Lesson Number	Topic
1	Course Outline and Fundamentals
2	Properties of Electromagnetic Waves
3	Principles and Designs of Remote Sensors
4	Propagation of Electromagnetic Waves: Refraction and molecular attenuation
5	The Basic 'Radar' Equation
6, 7	Backscattering and Attenuation from Spherical Particles
8, 9	Backscattering and Attenuation from Nonspherical Particles
10	Backscattering and Attenuation from Inhomogeneous Particles
11	First Exam
12, 13	Meteorological Applications: Cloud Physics Research
14	The Bright and Dark Bands (Sassen and Chen 1995)
15	NEXRAD Radar Applications (NWS)
16, 17	Overview of Remote Sensing Techniques
18, 19	The Multiple Remote Sensor Approach (Sassen 1984)
20	Second Exam
21, 22	Cirrus (Sassen and Mace 2001)
23	Field Trip to AFARS for Data Collection
24	Stratus Clouds (Sassen et al. 1999)
25	Mixed-Phase Clouds
26	Aerosols and Cloud Interactions (Sassen 2001)
27	Convective Systems, Hail and Rainfall
28	Field Trip to AFARS for Data Collection
29, 30	Review for Final

Important Dates:

1/20	First day of class
2/4	Drop Day
3/25	Last Day for Withdrawls
5/6	Last Day of Classes
9 – 12 May	Final Exam Week