Rough 721 Outline
(version 1: Jan 21, 2014)

1. Introduction (1 class)
2. Physical to Optical Properties (3 weeks)
    a. Geometry / scattering angle
    b. Phase Function expansion
    c. Single scattering / Mie theory
    d. Non-spherical particles
    e. Combination of optical properties
    f. Surfaces (Cox-Munk, Lambertian)
3. Radiative Transfer (6 weeks)
    a. Stokes Parameters, Polarization
    b. The general RT equation & component terms
    c. Nonscattering (emission-only) RT
    d. Scattering Techniques
        i. Single-scattering approximation
        ii. Multiple scattering techniques
    e. Polarized RT
    f. Fast techniques for non-monochromatic channels
4. Instrument Models (1 week)
5. Inverse theory (3 weeks)
    a. Problem set-up
    b. Sensitivity studies; the Jacobian
    c. Baye's theorem
    d. Cost Functions & Covariance matrices
    e. Solution for Gaussian statistics & linear problem
    f. Solution diagnostics
    g. Nonlinear solution techniques
    h. Information theory / channel selection
6. Class Project Presentations (1 week)