

METEO 437  
**ATMOSPHERIC PHYSICS II: *Physics and Chemistry of Clouds***

- *Course Outline and Suggested Readings* -

**I. INTRODUCTION**

- A. Atmospheric Structure and Phenomena [Jacob Ch 2; Hobbs(II) 3.3; Turco 2.3, 3.2, 3.3, 6.1]
- B. General Characteristics of Clouds [RY Ch 5; PK Ch 1,2; WH Ch 5]
- C. Applications of Thermodynamics [RY Ch 1, 2, 3; BA Ch 6; PK Ch 6]

**II. ATMOSPHERIC COMPOSITION**

- A. Atmospheric Compounds [Jacob Ch 1; Turco 3.3]
- B. Principles of Interaction [Jacob Ch 9; Turco 3.3; Hobbs(I) Ch. 3]
- C. Budgets and Behavior of Trace Chemicals [Jacob Ch 3, 8, 10, 11, 12; Turco Ch. 6, 13]

**III. AQUEOUS SYSTEMS**

- A. Phase Relationships [RY Ch 2; PK Ch 4]
- B. Multicomponent Systems [Hobbs(II) 7.3, 7.4]

**IV. CLOUD AND PRECIPITATION FORMATION**

- A. Supersaturation Development [RY Ch 6, 7; PK 13.2.2]
- B. Phase Nucleation [RY Ch 6, 9; WH 4.2; PK Ch 7, 9]
- C. Growth of Cloud Particles [RY Ch 7, 8, 9, 10; WH 4.4, 4.5; PK Ch 13]
- D. Cloud-scale Phenomena [RY Ch 12, 13]

**V. CLOUD AND PRECIPITATION CHEMISTRY**

- A. In-cloud Processes [Hobbs(II) 7.4; PK Ch 17]
- B. Acidic Rain [Jacob Ch 13; Turco Ch 9]
- C. Biogeochemical Cycles [Jacob Ch 6; Hobbs(II) Ch 8; Turco Ch 10]

(RY = Rogers and Yau; PK = Pruppacher and Klett; BA = Bohren and Albrecht; WH = Wallace and Hobbs)