METR 3223: Physical Meteorology II:
Cloud Physics, Atmospheric Electricity and Optics

CLASS: Mon.-Wed.-Fri., 11:00-11:50,
National Weather Center, Rm. 1350

INSTRUCTOR:
   Guifu Zhang, Associate Professor, School of Meteorology
   NWC Rm. 4620
   Mon. 2:00-4:00, Fri. 2:00-4:00, or by appointment
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TEXT BOOK:
   Rogers and Yau: *A Short Course in Cloud Physics*, Third Edition

REFERENCE BOOKS:
   Fleagle and Businger, *An Introduction to Atmospheric Physics*, Second Edition

COURSE DESCRIPTION
This course provide fundamentals and principles for understanding of the physical states and processes of clouds and precipitation as well as atmospheric electricity and optics. Specific topics that will be covered are as follows:

Cloud physics:
   Review of thermodynamics
   Aerosols and nucleation
   Condensation growth
   Collision and coalescence
   Precipitation processes
   Observation studies

Atmospheric electricity:
   Electrostatics
   Electromagnetic wave
   Thunderstorm charging
   Lightening

Atmospheric optics:
   Reflection and refraction
   Optical phenomena

GRADES
Homework problems:  40%
Midterm examination: 30%
Final examination: 30%