

Midterm I: Study Guide

Be familiar with the following terms and concepts. This list should provide a general idea of the topics covered in the exam.

- Composition of the atmosphere
- Most common permanent gases and variable gases
- Pressure
- Air density
- Vertical structures of temperature, pressure, and air density
- Inversion layers
- Isothermal layers
- Ozone layer
- Temperature, heat, kinetic energy (molecular motion)
- Lapse rate
- Specific heat capacity
- Heat transfer mechanisms (conduction, convection, and radiation)
- Phase changes of matter & energy changes
- The electromagnetic spectrum
- Processes occurring as radiation passes through the atmosphere
- Relationship between temperature of body and radiation emission curves
- Greenhouse effect (atmospheric absorption of long-wave radiation)
- Seasons: What causes them on Earth?
- Solstices and equinoxes
- Local temperature variations (geographical location, elevation, prevailing winds, latitude)
- Nighttime radiation inversions
- Temperature variation over a 24-hour period and relationship to heat transfer processes
- Relative humidity, vapour pressure, saturation vapour pressure, dew point
- Remote sensing techniques for detecting clouds and precipitation (satellite and radar)