

STUDY GUIDE: Snow Hydrology, Exam 1

This is just a basic overview of most of the topics covered thus far. You should be comfortable/familiar with all details of and information related to the following topics/keywords. Items on the list may or may not be covered on the exam. There may be items that are not on the list that may be on the exam.

H₂O: everything about it
Structure of ice: everything about it
Thermodynamics and phase diagram
Quasi-liquid layer
humidity vs. relative humidity
latent and sensible heat fluxes
specific heat and heat capacity
triple point
snow formation in the atmosphere
ideal gas law
Hess's law
Bergeron-Fiendeson process
precip particle types
SWE, and ways to measure SWE
what we do when we dig a snow pit, and what data we collect
snowpack characteristics
snow grain types
constructive v. destructive metamorphism, and other types of metamorphism
wind transport of snow, and implications for measurement techniques, biogeochem, and engineering
avalanches: why, when, where, how, to whom do they happen?
snow safety/snowpack stability assessment
how do skis work?
energy balance: at the snow surface AND for the snowpack as a whole. Write eqns.
-electromagnetic spectrum (memorize ranges of values for wavelength, frequency, and wavenumber. also, know what these things are)
-albedo
-dielectric constant
-cold content
-radiation, sensible heat exchange, latent heat flux, advective heat flux, ground heat flux (and their relative importance to the snowpack energy balance).
Why we care about a seasonal snowpack
All stats covered in lab
All lab material