

**ESS 431 PRINCIPLES OF GLACIOLOGY**  
**ESS 505 THE CRYOSPHERE**

**Lecture 05 – Ablation: Mass and energy balance in cryosphere systems.**

*Due Monday, October 16 2017, at start of class*

Cuffey and Paterson: <i>The Physics of Glaciers</i> Chapter 5.
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- 1) Define sensible heat and latent heat.
- 2) In their discussion of black body radiation, Cuffey and Patterson qualitatively describe the relationship between temperature and the wavelength of energy radiated. Does the sun radiate shortwave or longwave radiation? The Earth?
- 3) Based on the discussion presented here, is it warmer at night when it is cloudy or when it is clear? Why?
- 4) Why is air temperature a better predictor of ablation rate than net energy flux?
- 5) Is temperature more closely related to ablation in high latitude sites or low latitude sites? Why?