**ESS 431 PRINCIPLES OF GLACIOLOGY**

**ESS 505 THE CRYOSPHERE**

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

*Due Monday, October 15 2018, at start of class*

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| Cuffey and Paterson:  *The Physics of Glaciers* Chapter 5. |

1. Define sensible heat and latent heat (qualitatively describe the physical processes underlying these concepts and identify them as variables in a mathematical relationship).
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 then net energy flux?
5. Is temperature more closely related to ablation in high latitude sites or low latitude sites? Why?