

*McGill University, Montreal*  
GEOG 321 - Climatic Environments  
Knox

## **Study Questions - Topic 4**

1. Calculate Earth's declination  $\delta$  for the following dates: January 1, March 22, June 21, and December 31.
2. Calculate the Local Mean Solar Time (LMST) for Montreal if a regular 24h clock shows 14:00 on February 15th, and 08:00 on July 22nd.
3. Calculate the Local Apparent Time (LAT) for the same location and times.
4. Calculate the solar altitude angle  $\beta$  for the same location and those two times.
5. Calculate the extraterrestrial short-wave irradiance  $K_{Ex}$  for the same location and those two times.