

# GP 306 Quiz 5: December 4, 2003

Download the file: <http://acoustics.mines.edu/~jscales/gp306/tides.txt>  
This file has 50 days worth of data in it. 20 points each for the following questions.

1. What are the sampling frequency, Nyquist frequency and sampling rate?
2. What are the dominant frequency components of the signal? Don't just give the numbers, show how you arrive at the conclusions.
3. If you wanted to avoid being aliased for the semi-diurnal tide, what would be the minimum sampling frequency?
4. What is the frequency of the modulation visible in the data?
5. Is this caused by the interference of the diurnal and semi-diurnal tides? If not, what would the frequency difference between two sinusoidal components be in order to account for the modulation?