

# EE 5726: Homework Assignment 2

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## Problem 1

A vibration sensor outputs an analog signal with a peak to peak voltage of 5V at a frequency of 100Hz.

- (a) What should be the minimum sampling frequency, so that no information should be lost during the digitization process?
- (b) Suppose a resolution of  $0.025V$  is required to detect an interesting event. What should be the resolution of the ADC in terms of bits to convert the analog signal into a digital signal?

## Problem 2

Please read through Chap 2 of Karl's book and Chap 4 of Dargie's book. Explain the difference between event-based programming and process-based concurrency. Discuss some of the advantages and disadvantages of the two approaches in the context of WSNs.