

CALIFORNIA POLYTECHNIC STATE  
UNIVERSITY

CPE 367

DIGITAL SIGNALS AND SYSTEMS

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# Final Project: CPE 367: Touch Tone Filter

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**CAL POLY**

## TODOs

We have  $f_s = 4000$  so then we want some say 32 samples per run of our frequency analysis.

We want half of the 32 samples to be overlapped from the previous sample. Thus, 16 samples will be from the previous sample.

- Make a FFT from DFT assuming  $2^N$  sized samples.
- Implement a Goertzel Filter given some  $\omega_0$  via [https://en.wikipedia.org/wiki/Goertzel\\_algorithm](https://en.wikipedia.org/wiki/Goertzel_algorithm)  
 $f_c$ .

## Introductions