

ECE 409 - INTROD TO DIGITAL COMMUNICATIONS - INV 1

1. Spectrum of a signal $x(t)$ bandlimited by $f_b = 2$ KHz

2. How fast we need to sample a signal

a. $x(t) = 2 \cos(2 \cdot 1000t)$

$$f_s =$$

b. $x(t) = 2 \cos(2 \cdot 1000t) + 3 \cos(2 \cdot 2000t)$

$$f_s =$$

3. Sampling of $x(t) = 2 \cos(2 \cdot 1000t)$ at $f_s = 3000$ samples/sec

a. Sample time

$$T_s = \frac{1}{f_s}$$

b. First 5 samples starting at $t = 0$

<u>t (msec)</u>	<u>$x_s(t)$</u>