**You need to know the following topics for Signals and Systems Final**

1. Use Fourier series to represent a periodic signal by exponential or compact trigonometric representation,
2. System response to a periodic input signal,
3. Find the Fourier transform *X*(*ω*) of a signal *x*(*t*) by using the Fourier integral, table, and/or Fourier transform properties,
4. Find the system steady state output *y*(*t*) for a given input *x*(*t*) using the system frequency response *H*(*ω*), {*Y*(*ω*)= *X*(*ω*)*H*(*ω*)}.
5. Find the energy of a non-periodic signal or the power of a periodic signal,
6. Amplitude modulation and its application in communication,
7. Data Truncation and its implication,

Concept: What are the important parameters in data truncation and their effects in frequency resolution? How does the width of the truncation window impact the spectrum and frequency resolution of the truncated signal?

1. Given a signal, you need to find the highest frequency or bandwidth and then determine the sampling rate. Use the quantization error to find the number of bits or the reverse.