EC2410.WFY04
MPF

List of things to know
week 2

Understand what the output of a LTI to a complex exponential signal is.
Be able to check whether a (continuous or discrete) signal is periodic or not
Know how to compute the fundamental period of a (continuous or discrete) signal
Know what the properties of the Fourier series coefficients are for real, periodic (general, even or odd) signals, and how to use these properties to decrease the computations needed to compute the Fourier series decomposition
Know how to compute the Fourier series coefficients of periodic continuous and discrete signals
Know how to identify the Fourier series coefficients directly when dealing with cosine/sine expressions
Know how to show that the Fourier series coefficients of a real and even (odd) signal are real (purely imaginary)
Know how to use the linearity, time-shift, time reversal, and conjugation properties when computing Fourier series coefficients.
Be able to compute the Fourier series expansion of continuous and discrete periodic pulses.
Be able to reconstruct a signal time-domain expression given the expression for the a_k's
Be able to specify whether some specific properties of a signal are true, given the expression for the a_k's of the signal
Be able to explain what the Gibbs' effect is about
Know what the Dirichlet's conditions are.
Be able to explain why the Fourier series decomposition of a continuous signal requires an infinite number of terms, while the Fourier series decomposition of a discrete signal does not.
Be able to compute the Fourier series coefficients of one signal in terms of the coefficients of another signal when the signal gets time shifted, modified in amplitude, has the dc term change.