MAE143A subject areas for the Final March 21, 2017

In:
Continuous-time and discrete-time signals, Laplace transforms and z-transforms, poles, limits
DFT as a tool to analyze the frequency content of a discrete-time signal
Convolution as an operator, not as a computational exercise
Continuous-time and discrete-time systems, responses (impulse, step, zero-input, zero-state, sinusoidal steady-state), facility with descriptions (ODE, transfer function, block diagram, pole-zero plot), solution via transform methods with initial conditions (simple problems)
Inverse transforms, partial fraction expansions (not computationally demanding)
Stability and pole positions, frequency response (only roughly) in terms of pole and zero positions
Bode diagrams and frequency response
Bandlimited signals, aliasing, sampling
Closed-loop transfer functions and their derivation, open-loop and closed-loop poles
Control objectives – stabilization, disturbance rejection, reference tracking

Out:
Crazy computations. Note that complex numbers *per se* are not crazy
Root locus or complicated control designs – that is for 143B, as are Nyquist plots
Filter design
Fibonacci numbers, sunspots, jet engine combustion instabilities

Did I forget to mention anything?

Homeworks and midterms should give you a guide.