

ECE452/552

Midterm #1 Study Guide

- This is a 60 minute test during the first part of the class on Feb. 7. Test will start at 6:40pm. We will go over solutions of the test in the second part of the class.
- No calculators
- Closed book/closed notes except for a one page formula sheet (writing on front and back is OK)
- A z-transform table (the one on the course webpage) will be provided
- No spare (scratch) paper. Show all your work on the exam paper.

Topics covered are those covered in class from Ogata Chapters 1 to Chapter 3, up to but not including stability.

Main skills you should have:

- 1) Be able to find the (forward) z-transform of a function in t or kT
- 2) Be able to find the (forward) z-transform of a function in s
- 3) Be able to find the inverse z-transform of a function in z or z^{-1}
- 4) Be able to find the solution of a difference equation
- 5) Be able to change a difference equation description of a system to a pulse transfer function form and vice versa.
- 6) Be able to find the response of a system to a particular input
- 7) Be able to perform a block diagram reduction of a system containing $H(s)$ and/or $H(z)$ and samplers.
- 8) Be able to determine the output response, $y(kT)$, of a system after performing a block diagram reduction as stated in (7), for a particular input.
- 9) Understand the various relationships between continuous time signals and discrete-time (sampled) signals