

## **ECE452/552**

### **Midterm #2 Study Guide**

- This is a 60 minute test during the first part of the class on Feb. 28. Test will start at 6:40pm. We will go over solutions of the test in the second part of the class.
- Calculator OK
- 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 2<sup>nd</sup> ed. Chapter 4. The broad main topics are:

- 1) Stability testing
- 2) Classical control design using:
  - i) Discrete equivalents method (using a number of different discretization methods)
  - ii) w-plane method

Main skills you should have:

- 1) Be able to assess the stability of a system by the use of the Jury test.
- 2) Be able to determine the range of a variable for which stability is achieved
- 3) Be able to find the discrete-time equivalent of a continuous-time transfer function using any of the six transforms
- 4) Be able to undertake a design using the discrete equivalents method. Due to time constraints, however, I will not ask you to do a design in the exam.
- 5) Be able to undertake a design using the w-plane method. Due to time constraints, however, I will not ask you to do a design in the exam.