

ELEC 3004/7312: Signals Systems & Controls

PRACTICAL LABORATORY TWO REPORT

Due: 25th May, 2012

Note: This practical laboratory report is worth **10%** of the final course mark. Remember that this should be turned in via the submission system.

Total marks: 100

1. **[20] Pre-lab**

Before the laboratory started, there were 4 questions to answer (at the top of Page 2). Please submit answers to these.

2. **[10] Laboratory Part 1**

Briefly explain what happens when you adjust the value of *alpha* and *D* (see also top of Page 5)

3. **[25] Laboratory Part 2**

This asked you to build a FIR Echo Filter. What differences do you observe between the IIR Echo Filter and the FIR Echo filter?

4. **[15] Laboratory Part 3**

- (1) How many echoes can you hear for each of the FIR and IIR modes? (Part 3, Step 2)
- (2) You will notice a change in echo times, but what other things are happening to the output signal? (Part 3, Step 3)

5. **[20] Laboratory Part 4**

Briefly explain what transpires as the alpha and delay are changed. What is the difference between the delay set at 1/8 and set at 6/8.

6. **[10] Overall System Review**

Looking at the overall laboratory, what are the consequences of adding more and more “delay” to a filter? What values (or directions) will lead to interesting (“better”) reverb effects?