

**ECE 146B**  
**Gibson**

**Spring 2008**  
**April 10, 2008**  
**Due: 4/15/08**

**Homework No. 2**

1. Problem 4.12 in Haykin.
2. Problem 4.13 in Haykin.
3. Verify that raised cosine pulse shaping satisfies Eq. (4.59).
4. Given a fixed bandwidth of 4000 Hz, (a) what is the maximum possible transmitted symbol rate for 100% roll-off raised cosine pulses? And (b) What is the maximum possible transmitted symbol rate for 50% roll-off raised cosine pulses?
5. If we generate 100% roll-off raised cosine pulses starting with rectangular pulses of with  $\tau$ , what is the required transfer function of the shaping filter?