

## **List of Major Topics and Corresponding Textbook Sections**

### **Random Processes**

- Stationarity (section 1.3 – see also the Reading on Random Processes)
- Autocorrelation (section 1.4)
- Linear filters and random processes (section 1.6)
- Power spectral density (section 1.7)
- Gaussian processes (section 1.8)

### **Transmission of digital signals**

- Matched filter (section 4.2)
- Probability of error analysis (section 4.3)
- Nyquist's criterion (section 4.5)
- Passband and M-ary transmission (sections 6.2-6.3)

### **Spread spectrum and CDMA**

- CDMA vs. TDMA, FDMA
- Feedback shift registers (section 7.2)
- Error analysis (covered in Lab 3 but not testable)

### **Error control coding**

- Linear block codes and the Hamming code (section 10.3)
- Convolutional codes (section 10.5)
- Viterbi algorithm (section 10.6)
- Shannon's channel coding theorem (section 9.8)