Instructor: Kuei-Chiang Lai (賴癸江)
Office: 92A83 (10th floor of EE building)
Phone: x62399
Email: kclai@mail.ncku.edu.tw
Office hours: to be announced later

Lecture Times: Tuesday 1310-1500 and Fridays 1610-1700.
Lecture Room: 92225

Textbooks:


References:

NOTE: All these five books have been reserved for this course (教授指定參考書) in the NCKU Library.

Grading
1. Homeworks and/or Quizzes
2. Exams: 2 mid-terms and 1 final exam
   甲、Mid-term I: topics 1—2
   乙、Mid-term II: topics 3—5
   丙、Final: topics 6—8

● Zero tolerance on cheating: you will fail the entire course whenever you are caught cheating in quizzes or exams.
Course Outline

1. Introduction [Z&T Chapter 1]
   i. Block diagram
   ii. Channel

2. Signals and Linear Systems [Z&T Chapter 2]
   i. Signal model and classifications
   ii. LTI systems, convolution
   iii. Fourier series
   iv. Fourier transform
   v. Group/phase delay, non-linear distortion

   [Mid-term exam I]

3. Amplitude modulation and demodulation [Z&T Chapter 3]
   i. DSB, AM, SSB, VSB
   ii. Mixing and superheterodyne receiver

4. Angle modulation and demodulation [Z&T Chapter 3]
   i. Phase modulation
   ii. Frequency modulation
   iii. PLL

5. Sampling and Analog pulse modulation [Z&T Chapters 2 & 3]
   i. Sampling theorem
   ii. PAM, PDM, PPM

   [Mid-term exam II]

6. Review of Probability and Random Variables [Z&T Chapter 4]

7. Random signals and noise [Z&T Chapter 5]
   i. Random processes
   ii. Correlation and PSD
   iii. Noise

8. Noise in modulation systems [Z&T Chapter 6]
   i. SNR
   ii. AM
   iii. FM

   [Final exam]