EE 4640 Communication Systems II (通訊系統 II)

Lecture time: **W3 W4 F3 F4,** Classroom: **Room 209**, Delta Building
(**Spring Semester 2016**)
Instructor: 祁忠勇 (Chong-Yung Chi), Office: Room 966, Delta Building
http://www.ee.nthu.edu.tw/cychi/ Office hours: 13:30-15:30, Tuesday & Thursday
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This is a core fundamental course for students who would like to understand or enter the field of communication engineering. As Analog Communication has been covered in the course "Communication Systems I", this course is designed in parallel with "Communication Systems I" and will cover principles of *Digital Communication*. For students to take this course, the background of "Communication Systems I" is preferred, but not a must.

For the practicing engineer in the communications industry and those who (such as seniors and beginning graduate students) plan to have communications as major field, this course is essential to building background in *digital communications*. For those who are to engage in signal processing and IC design for communications, this is also a course worth taking.

Background: Probability Theory, Signals and Systems

Course Outline:
1. Fourier Analysis of Signals and Systems (Review) (Chapter 2)
2. Probability Theory and Bayesian Inference (Review) (Chapter 3)
3. Stochastic Processes (Chapter 4)
4. Signaling over AWGN Channels (Chapter 7)
5. Signaling over Band-Limited Channels (Chapter 8)
6. Signaling over Fading Channels (Chapter 9)

Textbook: Simon Haykin, Digital Communication Systems, Wiley & Sons, 2014.

Grading and Examination Dates:
Homework: **20%;** Midterm Exam: **40%;** Final Exam.: **40%**

Teaching Assistant and Office Hours:
To be determine, e-mail: to be determined, Office Hours: To be determined

Office: Wireless Communicaions and Signal Processing Lab (Room 706, EECS Building)
Tel: X34033

Remarks:

1. We are against plagiarism. Those who are found committing any (even slight) form of plagiarism in assignments, projects, and examinations will be seriously punished; for example, getting no score for the whole course.

2. Homework must be handed in the lecture time by the deadline. The score will be multiplied by **a factor of 0.7 per day passing the deadline**.

3. *Nonlinear adjustment* will be made as needed for the final term grade.

4. Course website: http://www.ee.nthu.edu.tw/cychi/courses-e.html