National Tsing Hua University
11220 EECS 202001 Signals and Systems

<u>Course Syllabus</u>

Class time: W5W6R8R9   Location: Delta 217

Instructor: Chen-Bin Huang (robin◎ee.nthu.edu.tw)   Delta 859   Tel: 62180
Feel free to arrange office hour via e-mail

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<u>Course Description:</u>

This is a mandatory course intended to consolidate the ***mathematical*** foundations to various fields of electrical engineering, such as signal processing, communications, optics, and control. In this course, we will introduce various analysis methods along with some practical examples. We will focus on continuous-time/discrete-time deterministic signals and linear time-invariant systems. We will cover the convolution, Fourier series, Fourier transform, Laplace transform, and z-transform operations.

<u>Textbook:</u>

Oppenheim, Willsky, with Nawab, *Signals and Systems*, 2nd Ed., Pearson (2014).

<u>Class notes</u>: Course materials available on https://elearn.nthu.edu.tw/

<u>Teaching Method:</u>

Lectures in English. Questions are welcome both in English or Chinese.

<u>Course Content</u>:

- ➢ Fundamentals of Signals and Systems
- ➢ Linear Time-Invariant Systems
- ➢ Fourier Series Representation of Periodic Signals
- ➢ The Continuous-Time Fourier Transform
- ➢ The Discrete-Time Fourier Transform
- ➢ Time and Frequency Characterization of LTI Systems
- ➢ Sampling
- ➢ The Laplace Transform
- ➢ The z-Transform

Chen-Bin Huang

Grading:

Quizzes (25%, deletion of one worst score)

Examination 1 (25%)

Examination 2 (25%)

Examination 3 (25%)

Matlab bonus problems (up to 4%)

Ethics policy:

As a student of NTHU, you are here to learn.

1. You should always bear honor and confidence in your mind. You should be responsible for your own grade and in a longer term, your future.

2. Misconducts during quizzes/examinations will result in immediate failure of this course.

3. Overly active club participation makes no excuse for late homework and/or missing exams.

Chen-Bin Huang