IMPTE

International Master's Program in Telecommunication Engineering

# Course Name: Digital Communication 數位通訊

## Course Objects:

Students will learn the mathematics required in communication theory and understand the functional blocks of the digital communication system. They will also learn how digital signals can be encoded and decoded over analog channels.

## Course Syllabus:

We introduce the basic mathematical models for random variables and random (noise) signals, which are used to characterize the filtering and modulation of random noise. These techniques will then be used to design analog (AM and FM) and digital (PSK and FSK) communication systems and determine their performance over channels with noise and interference. We give a comprehensive introduction to the basics of information theory and an overview of the use of vector spaces in signal processing.