Course Name:

ADVANCED MATHEMATICS IN COMMUNICATIONS ENGINEERING
高等通訊數學

Course Objects:

Students will learn the mathematics required in communication theory.

Course Syllabus:

The course covers probability, statistics, and linear algebra concepts with applications to communications. The students are expected to i) use fundamental properties and theorems of probability theory, sample spaces, events, and random variables to model and interpret the real-life phenomena, ii) apply sampling to a large data set for statistical inference - Statistical (random process) modeling of an empirical process is based on the laws of probability theory. Statistical models are essential for analyses and developments in several fields including communications, iii) utilize matrix computations to analyze eigenvalues and eigenvectors, and matrix decomposition including singular value decomposition (SVD).