科目：數理統計（含統計推論）

一、涵蓋內容：
1. Convergence concepts: Convergence in probability, almost sure convergence and convergence in distribution.
4. Hypothesis testing theory: The Neyman-Pearson fundamental lemmas, UMP tests, LMP tests, unbiasedness for hypothesis testing, likelihood ratio tests.
5. Asymptotic theory in estimation and testing: Consistency, asymptotic efficiency, asymptotic distributions.

二、參考書目：
科目：機率論（含隨機過程）

一、涵蓋內容：
1. Distribution function.
2. Measure theory.
3. Random variable, expectation, independence.
5. Law of large numbers.
6. Characteristic function.
7. Central limit theorem.
8. Markov chains.
9. The basic limit theorem of Markov chains and applications.
10. Continuous time Markov chains.
12. Martingales.

二、參考書目：
科目：統計方法（含迴歸分析、實驗設計及多變量分析）

一、涵蓋內容：

迴歸分析：
1. Multiple linear regression.
2. Transformations and weighting to correct model inadequacies.
3. Polynomial regression models.
4. Indicator variables.
5. Variable selection.

實驗設計：
1. Completely randomized design.
2. Randomized complete block design.
3. Latin square type designs.
4. Incomplete block designs.
5. 2 and 3 factorial designs.
6. Fractional factorial designs.
7. Fitting regression Models.
8. Response surface methodology.

多變量分析：
1. The multivariate normal and related distributions.
2. Inferences about multivariate means.
4. Principal components.
5. Factor analysis.
7. Clustering.
8. Related matrix theory.
二、参考書目:


科目：財務計量（含財務時間序列、財務工程及投資學）

一、涵蓋內容：
1. Financial time series and their characteristics.
2. Linear time series analysis and its applications.
3. Conditional heteroscedastic models.
4. Continuous-time models and their applications.
5. Extreme values, quantile estimation, and value at risk.
7. Multivariate volatility models and their applications.
8. Portfolio theory.

二、參考書目：