

The Chinese University of Hong Kong  
Faculty of Science  
Science Academy for Young Talent

Summer Courses 2023  
Course Outline

*CUSA1036 A taste in Statistics*  
初嘗統計

**Introduction:** The course provides a gentle introduction in statistical concepts and techniques which are essential for visualizing, draw conclusions and learning from data. Topics include exploratory data analysis, common hypothesis testing, resampling and regression. Real data examples will be demonstrated with statistical software R.

本課程對統計概念和技術進行溫和的介紹，這些概念和技術對於可視化、得出結論和從數據中學習至關重要。主題包括探索性數據分析、常見假設檢驗、重採樣和回歸。真實數據示例將使用統計 R 進行演示。

**Medium of Instruction:** Cantonese supplemented with English  
粵語輔以英語

**Organising Unit:** Department of Statistics, Faculty of Science, CUHK

**Teachers:**



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**Course Content:**

17 July 2023 (Monday)	9:30 am – 12:30 pm	<b>Lesson 1:</b> Descriptive statistics, probability and sampling distribution and central limit theorem 描述性統計、概率和抽樣分佈以及中心極限定理
	2:00 pm – 5:00 pm	<b>Lesson 2:</b> Confidence Interval and Hypothesis Testing (t tests, if time allows, chi-sq goodness of fit, rank tests will be mentioned) 置信區間和假設檢驗(t 檢驗，如果時間允許，會提到 chi-sq，擬合優度，秩檢驗)
24 July 2023 (Monday)	9:30 am – 12:30 pm	<b>Lesson 3:</b> EDA
	2:00 pm – 5:00 pm	<b>Lesson 4:</b> Resampling 重採樣
28 July 2023 (Friday)	9:30 am – 12:30 pm	<b>Lesson 5:</b> Introduction to Statistical Learning and Linear Regression I 統計學習概述及線性回歸(I)
	2:00 pm – 5:00 pm	<b>Lesson 6:</b> Linear Regression II and Bagging 線性回歸(II)及引導聚集算法
31 July 2023 (Monday)	9:30 am – 12:30 pm	<b>Lesson 7:</b> Logistic Regression for Classification 邏輯回歸分類法
	2:00 pm – 5:00 pm	<b>Lesson 8:</b> Group Presentation and Discussion Chinese 報告和結論
4 August 2023* (Friday)	9:30 am – 12:30 pm	Make-up Class
	2:00 pm – 5:00 pm	

<b>Duration</b>	4 whole day sessions (total 24 contact hours)
<b>Date</b>	17, 24, 28, 31 July 2023 4 August 2023* (make up class)
<b>Time</b>	9:30 am – 12:30 pm & 2:00 pm – 5:00 pm
<b>Teaching Mode</b>	Face to Face (The Chinese University of Hong Kong)
<b>Enrollment</b>	30
<b>Expected Applicants</b>	Students who are promoting to or studying S4 – S6
<b>Tuition Fee</b>	HKD 3,780.00
<b>Credit</b>	1.5 Academy Unit Certificate of completion will be awarded to students who pass the assessment (if applicable) and attain at least 75% attendance.
<b>Grading Methods</b>	Pass or Fail

\* This date is reserved for make-up classes in case there is any cancellation of classes due to unexpected circumstances.