



E2MAT009C

(Token- required)

## Statistics Course (Level II)

# Introduction to Statistical Inference Using Simulation Approach with TinkerPlots™

Principal Instructor: Dr Eric Fung

(Head of Research Division, HKAGE)

Assistant Instructor: Ms Crystal Ngan

(Research Officer of Research Division, HKAGE)



**Application Deadline**

**15 May 2023**

**12:00 noon**

**Result Release**

**19 May 2023**

## **Intended Learning Outcomes**

Upon completion of the programme, participants should be able to:

1. learn the basic summary statistics, e.g., means, standard deviation and percentiles;
2. Understand the variations and uncertainties due to sampling;
3. Learn how to conduct hypothesis testing and quantify the uncertainties using simulation and resampling techniques;
4. Learn the use of the software TinkerPlots™;
5. Improve communication and collaborative skills via the group exercises/activities.



## ◆ Introduction

The use of statistics and data is prevalent in today's information age. The ability in statistical thinking is one of the indispensable skills in the 21<sup>st</sup> century. In this regard, the programme aims to nurture students' abilities in statistical thinking and reasoning, and the skills of gauging uncertainties in real-life situations. It includes the following concepts: Descriptive Statistics of Raw Data, Sampling Variation, Hypothesis Testing (e.g., the use of p-Value), and Resampling Techniques.

In the programme, the teaching and learning software TinkerPlots™ will be provided for students, which is a data visualization and modeling tool. It provides various easy-to-use and visual facilities to calculate descriptive statistics and conduct hypothesis testing via resampling without the need of any programming. The software has been used in many countries. Besides, the students are encouraged to explore the application of statistical thinking in daily life situations in the programme via various class activities.

## ◆ Schedule

Session	Date	Time	Venue
1	20 Jul	10:00 a.m. – 1:00 p.m.	Room 203 (HKAGE)
2	27 Jul		
3	3 Aug		
4	10 Aug		
5	17 Aug		
6	24 Aug		

## ◆ Target Participants

- S1 – S3 HKAGE student members in 2022/23 school year.
- Class size: 15
- Student members would be selected randomly by the computer system. The decision of HKAGE on the result of the selection should be final.

## ◆ Pre-requisite

No special prerequisites are needed

## ◆ Medium of Instruction

Cantonese with English handouts

## ◆ Certificate

E-Certificate will be awarded to participants who have:

- attended at least 5 sessions; AND
- completed all the assignments with satisfactory performance