City University of Hong Kong
Course Syllabus

offered by Department of Management Sciences
with effect from Semester A 2018 /19

Part I   Course Overview

Course Title:	Business Statistics
Course Code:	GE2262
Course Duration:	One Semester
Credit Units:	3
Level:	B2
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☑ Study of Societies, Social and Business Organisations ☐ Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	CB2200 Business Statistics; GE2213 Understanding Uncertainty and Statistical Reasoning

Part II   Course Details

1.   Abstract
(A 150-word description about the course)

With today's widespread use of statistics in the media, academic and business firms, this course aims to provide students with a good understanding of basic statistical concepts so as to facilitate their decision making. The course content is based on real-world examples and cases to encourage students to develop their attitude and ability to discover and innovate.

2.   Course Intended Learning Outcomes (CILOs)
(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs[#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Explain concepts in numerical descriptive measures, sampling distributions, confidence interval estimation, hypothesis testing, and simple linear regression model.	35%		✓	
2.	Select appropriate statistical methods to analyse real-life business data, interpret the results and give recommendations for business decisions.	35%		✓	
3.	Apply standard statistical software, such as Microsoft Excel, to analyse data arising from real-life business problems.	20%		✓	
4.	Able to demonstrate the attitude to provide recommendations / innovations based on statistical data	10%	✓		
	* If weighting is assigned to CILOs, they should add up to 100%.	100%			

[#] *Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.*

> *A1:   Attitude*
> *Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.*
> *A2:   Ability*
> *Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.*
> A3:   *Accomplishments*
> *Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.*

3.   Teaching and Learning Activities (TLAs)
(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.						Hours/week (if applicable)
		1	2	3	4			
Lectures	• Lectures: Statistical analytical techniques, relevant knowledge and concepts are explained. • Case studies: Case studies that illustrate the use of statistics in	✓	✓	✓	✓			

	the real world are discussed. • Software demonstration: Demonstrations by instructor on visualizing and analysing the data using Microsoft Excel. Out of class, students are asked to have practices on their own.							
Tutorials	• Exercises: Students discuss their responses to exercises that are designed to enhance their statistical analytical skills within a real world context. They are required to interpret the results and give recommendations. • Class Discussion: Students work in small groups to discuss the criteria and appropriateness of chosen statistical measures and methods to real-world business problems.	✓	✓		✓			

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.						Weighting*	Remarks
	1	2	3	4				
Continuous Assessment: __50__%								
Quizzes	✓	✓		✓			20%	
Assignments		✓	✓	✓			25%	
In-Class Discussion and Performance		✓		✓			5%	
Examination: __50__% (duration: 2 hours, if applicable)								
Final Examination	✓	✓		✓			50%	
* The weightings should add up to 100%.							100%	

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Quizzes	1.1 ABILITY to DEFINE the statistical terminologies.	High	Significant	Moderate	Basic	Not even reaching marginal levels
	1.2 ABILITY to SELECT and APPLY different statistical methods to solve business problems.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Assignments	2.1 ABILITY to IDENTIFY a set of relevant statistical concepts to real-world problems.	High	Significant	Moderate	Basic	Not even reaching marginal levels
	2.2 ABILITY to APPLY the relevant statistical concepts to ANALYSE the cases.	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. In-Class Discussion and Performance	3.1 ABILITY to EXPLAIN the statistical concepts and PRESENT the statistical findings.	High	Significant	Moderate	Basic	Not even reaching marginal levels
4. Written Examination	4.1 ABILITY to SELECT and APPLY different statistical methods to solve business problems.	High	Significant	Moderate	Basic	Not even reaching marginal levels
	4.2 ABILITY to INTERPRET the given computer outputs and provide RECOMMENDATIONS accordingly.	High	Significant	Moderate	Basic	Not even reaching marginal levels

Part III   Other Information (more details can be provided separately in the teaching plan)

1.   **Keyword Syllabus**
     (An indication of the key topics of the course.)

   1.   **Presenting Data and Descriptive Statistics**
        Types of data. Organizing and visualizing data. Descriptive statistics including measures of central tendency, variation and shape.

   2.   **Basic Probability and Probability Distributions**
        Probability distribution for a discrete random variable. Binomial distribution. Normal distribution. Sampling distributions of mean and proportion. Central limit theorem.

   3.   **Statistical Inference**
        Estimation of population parameters - the mean and proportion. Confidence interval estimation. Statistical hypotheses. Type I and Type II errors. The significance level and rejection region. The p-value. Testing hypotheses about the mean and proportion. Determining sample size.

   4.   **Simple Linear Regression**
        Scatterplots. Measuring correlation. Simple linear regression model. Least squares estimated of parameters. Measures of variation. Inference about regression parameters. Prediction of new observations.

2.   **Reading List**
2.1 **Compulsory Readings**
     (Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	Levine, D.M., Szabat, K.A. and Stephan, D.F. Business Statistics: A First Course. Pearson.

2.2 **Additional Readings**
     (Additional references for students to learn to expand their knowledge about the subject.)

Books	
1.	Liu, K.I. and To, K.M. Speaking of Statistics. Pearson.
2.	Newbold, P., Carlson, W.L. and Thorne, B. Statistics for Business and Economic. Pearson.
3.	Robert Gould, Colleen N. Ryan. Introductory Statistics: Exploring the World through Data. Pearson.
4.	Terry L. Sincich. Business Statistics by Example. Pearson.
5.	Middleton, M.R. Data Analysis Using Microsoft Excel. Thomson, Brooks/Cole.
Online Resources	
6.	Statistics Glossary http://www.stats.gla.ac.uk/steps/glossary/index.html
7.	STICI – A very interesting online statistics course http://www.stat.berkeley.edu/~stark/SticiGui/Text/index.htm
8.	HyperStat Online Statistics Textbook http://davidmlane.com/hyperstat/

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

GE PILO	Please indicate which CILO(s) is/are related to this PILO, if any *(can be more than one CILOs in each PILO)*
PILO 1: Demonstrate the capacity for self-directed learning	CILO 1 and 3
PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology	CILO 1 and 3
PILO 3: Demonstrate critical thinking skills	CILO 2
PILO 4: Interpret information and numerical data	CILO 4
PILO 5: Produce structured, well-organised and fluent text	
PILO 6: Demonstrate effective oral communication skills	CILO 2 and 4
PILO 7: Demonstrate an ability to work effectively in a team	CILO 2 and 4
PILO 8: Recognise important characteristics of their own culture(s) and at least one other culture, and their impact on global issues	
PILO 9: Value ethical and socially responsible actions	
PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation	CILO 4

GE course leaders should cover the mandatory PILOs for the GE area (Area 1: Arts and Humanities; Area 2: Study of Societies, Social and Business Organisations; Area 3: Science and Technology) for which they have classified their course; for quality assurance purposes, they are advised to carefully consider if it is beneficial to claim any coverage of additional PILOs. General advice would be to restrict PILOs to only the essential ones. (Please refer to the curricular mapping of GE programme: http://www.cityu.edu.hk/edge/ge/faculty/curricular_mapping.htm.)

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task
Final Exam