## City University of Hong Kong Course Syllabus

# offered by College/School/Department of <u>Mathematics</u> with effect from Semester <u>B</u> 20\_17 / 18\_

## Part I Course Overview

	Sampling Survey Methods for Social and Market Research							
Course Title:								
Course Code:	MA4549							
Course Duration:	One Semester							
Credit Units:	3							
Level:	B4							
	Arts and Humanities							
<b>Proposed Area:</b> (for GE courses only)	UStudy of Societies, Social and Business Organisations Science and Technology							
Medium of Instruction:	English							
Medium of Assessment:	English							
<b>Prerequisites</b> : (Course Code and Title)	MA2506 Probability and Statistics							
<b>Precursors</b> : <i>(Course Code and Title)</i>	MA3518 Applied Statistics							
<b>Equivalent Courses</b> : (Course Code and Title)	Nil							
<b>Exclusive Courses</b> : (Course Code and Title)	Nil							

### Part II **Course Details**

#### 1. Abstract

(A 150-word description about the course)

This course aims to develop skills important for the design and analysis of research in the social sciences and in market research. Specific focus will be on developing skills for survey sampling, and questionnaire design and analysis.

#### **Course Intended Learning Outcomes (CILOs)** 2.

(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.	describe the common sampling strategies, and recognize them from a description of how a survey was done.	30%	~	~	
2		2004			
2.	identify which sampling strategy is appropriate for a given context	20%	v	V	
3.	estimate key population parameters of interest and measures of	40%	~	$\checkmark$	$\checkmark$
4	uncertainty, for a given sampling strategy	100/			
4	appreciate important issues in questionnaire design, develop	10%	v	v	v
	appropriate questionnaires, and critique a given questionnaire				
5.					
6.					
* If we	highting is assigned to CILOs, they should add up to 100%.	100%		•	•

\* If weighting is assigned to CILOs, they should add up to 100%.

<sup>#</sup> 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.

Accomplishments A3:

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

#### **Teaching and Learning Activities (TLAs)** 3.

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.				Hours/week (if		
		1	2	3	4	5	6	applicable)
Teaching	Learning through teaching is primarily based on lectures	~	~	~	~			35 hours in total
Project	Learning through project helps students apply sampling methods to a concrete application.	~	~	~	V			After class
Computer lab	Learning through lab demonstration	$\checkmark$	$\checkmark$	$\checkmark$				4 hours in total

demonstration	allows students to develop hands-on skills of using statistical software (in particular R software) to analyse data					
hand-in assignments	Learning through assignments helps students understand the theoretical basis and identify practical applications of sampling, and develop the ability of analysing practical problems	<ul> <li>✓</li> </ul>	✓	✓		After class

## 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	5	6		
Continuous Assessment: _40	Continuous Assessment: _40%							
Mid-term test	$\checkmark$	$\checkmark$	$\checkmark$				15-25%	
Project	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			15%	
Hand-in assignment	✓	✓	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>			<mark>0-10%</mark>	
Examination	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			60%	
Examination: _60% (duration: 2 hrs, if applicable)								
* The weightings should add up to 100%.						100%		

Course Syllabus Jun 2017

## 5. Assessment Rubrics

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

Assessment Task	Criterion	Excellent	Good	Fair	Marginal	Failure
		(A+, A, A-)	(B+, B, B-)	(C+, C, C-)	(D)	(F)
1. Mid-term test	Ability in problem solving	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Project	Creativity and Team work ability	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Assignments	Comprehensive ability in independent problem solving	High	Significant	Moderate	Basic	Not even reaching marginal levels
4. Examination	Comprehensive ability in independent problem solving	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.)

Simple random sampling; ratio estimation; regression estimation; systematic sampling; stratified sampling; unequal probability sampling; cluster sampling; multi-stage cluster sampling; questionnaire design.

## 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.	
2.	
3.	

### 2.2 Additional Readings

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

1.	Lohr, S. Sampling: Design and Analysis, Duxbury Press, 1999.	
2.	Scheaffer, R., Mendenhall, W., Ott, L. Elementary Survey Sampling. 5th edition, Duxbury Press, 1996.	
3.		