City University of Hong Kong
Course Syllabus

offered by Department of Linguistics and Translation
with effect from Semester A 2022/23

Part I   Course Overview

Course Title:	Fundamentals of Statistics for Language Sciences
Course Code:	LT2206
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)*	CTL2206 Fundamentals of Statistics for Language Studies
Exclusive Courses: *(Course Code and Title)*	Nil

Part II   Course Details

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

   Linguistics concepts often display ranges of discrete values that can be translated into numerical variables and then scrutinized by statistical tests. This course enables the students to represent linguistic problems in terms of numerical problems, to calculate statistical measures and to reinterpret these measures back into linguistics in a way that provides an answer to the original linguistic problem.

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.	Calculate measures of central tendencies (mean, medium, standard deviation) for different types of variables.		✓	✓	✓
2.	Use parametric tests for checking the Null Hypothesis involving ratio/interval variables.		✓	✓	✓
3.	Use non-parametric tests for checking the Null Hypothesis involving ordinal/nominal variables.		✓	✓	✓
4.	Test the correlation of two variables.		✓	✓	✓

* 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			
1	**Lectures –** Presentation and explanation of theories, concepts, models and methods; illustrative examples. **In-class** exercises – Doing hands-on exercises using R and discussing homework exercises.	✓	✓	✓	✓			3 hours

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: 60%								
Homework Assignment 1	✓						15%	
Homework Assignment 2		✓		✓			15%	
Homework Assignment 3			✓	✓			15%	
One presentation	✓	✓	✓	✓			15%	
Examination: 40% (duration: 2 hours) Testing students' grasp of concepts and ability to apply statistical methods. (CILO No. 1-4)								
* 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. Coursework	Go through the statistical application cycle (CILOs 1-4): - Translate linguistic variables into numerical variables; - Choose statistical tests; - Interpret statistical measures back into linguistics	Excellent capability to go through the statistical application cycle	Good capability to go through the statistical application cycle	Adequate capability to go through the statistical application cycle	Marginal capability to go through the statistical application cycle	No capability to go through the statistical application cycle
2. Oral Presentation	Demonstration of understanding basic concepts Demonstration of ability to apply basic concepts	1) comprehensive understanding of the course contents and being able to apply the contents; 2) Demonstrating accurate and *critique* analysis on linguistic instances; 3) writing format is appropriate in an academic style and standard;	1) comprehensive understanding of the course contents; 2) demonstrating accurate analysis on linguistic instances; 3) writing format is appropriate in an academic style and standard;	1) moderate or limited understanding on topics and contents of the course; 2) demonstrating basic ability to analyze linguistic instances; 3) appropriate format in the writing, but writing content merely shows some understanding of the differences between academic and non-academic style of writing and put that understanding to practice;	1) little understanding on topics and contents of the course; 2) insufficient knowledge on course contents; 3) inappropriate writing style and format for academic paper;	1) no understanding on topics and contents of the course; 2) incorrect knowledge on course contents; 3) inappropriate writing style and format for academic paper;

3. Examination	Same as for "Coursework" but with time constraint	Excellent capability to go through the statistical application cycle	Good capability to go through the statistical application cycle	Adequate capability to go through the statistical application cycle	Marginal capability to go through the statistical application cycle	No capability to go through the statistical application cycle

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.)

    Populations and samples; frequency distribution; mean, median, mode, variance, standard deviation; the Normal Distribution; Null Hypothesis; Significance level; Parametric tests (z-test and t-test); Non-parametric tests (Mann-Whiney U-test, Wilcoxon signed ranks test, Sign test, χ^2-test); the F-Distribution; Correlation of two variables.

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.	Lecture notes/slides/readings for the course.
2.	Winter, Bodo. *Statistics for Linguists: An Introduction Using R*. New York: Routledge, 2020.

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

1.	Online tutorial on R programming: R Programming for Beginners: https://www.youtube.com/watch?v=BvKETZ6kr9Q.