LT2206: FUNDAMENTALS OF STATISTICS FOR LANGUAGE SCIENCES

Effective Term
Semester B 2022/23

Part I Course Overview

Course Title
Fundamentals of Statistics for Language Sciences

Subject Code
LT - Linguistics and Translation
Course Number
2206

Academic Unit
Linguistics and Translation (LT)

College/School
College of Liberal Arts and Social Sciences (CH)

Course Duration
One Semester

Credit Units
3

Level
B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
CTL2206 Fundamentals of Statistics for Language Studies

Exclusive Courses
Nil

Part II Course Details

Abstract

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.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Calculate measures of central tendencies (mean, medium, standard deviation) for different types of variables.		x	x	x
2	Use parametric tests for checking the Null Hypothesis involving ratio/interval variables.		x	x	x
3	Use non-parametric tests for checking the Null Hypothesis involving ordinal/nominal variables.		x	x	x
4	Test the correlation of two variables.		x	x	x

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 real-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.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
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.	1, 2, 3, 4	3 hours

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Homework Assignment 1	1	15	
2	Homework Assignment 2	2, 4	15	

3	Homework Assignment 3	3, 4	15	
4	One presentation	1, 2, 3, 4	15	

Continuous Assessment (%)

60

Examination (%)

40

Examination Duration (Hours)

2

Assessment Rubrics (AR)

Assessment Task

1. Coursework

Criterion

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 (A+, A, A-)

Excellent capability to go through the statistical application cycle

Good (B+, B, B-)

Good capability to go through the statistical application cycle

Fair (C+, C, C-)

Adequate capability to go through the statistical application cycle

Marginal (D)

Marginal capability to go through the statistical application cycle

Failure (F)

No capability to go through the statistical application cycle

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Assessment Task

2. Oral Presentation

Criterion

Demonstration of understanding basic conceptsDemonstration of ability to apply basic concepts

Excellent (A+, A, A-)

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;

Good (B+, B, B-)

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;

Fair (C+, C, C-)

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;

Marginal (D)

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;

Failure (F)

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;

Assessment Task

3. Examination

Criterion

Same as for “Coursework” but with time constraint

Excellent (A+, A, A-)

Excellent capability to go through the statistical application cycle

Good (B+, B, B-)

Good capability to go through the statistical application cycle

Fair (C+, C, C-)

Adequate capability to go through the statistical application cycle

Marginal (D)

Marginal capability to go through the statistical application cycle

Failure (F)

No capability to go through the statistical application cycle

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Part III Other Information

Keyword Syllabus

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, χ2-test); the F-Distribution; Correlation of two variables.

Reading List

Compulsory Readings

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

Additional Readings

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