

LT2206: FUNDAMENTALS OF STATISTICS FOR LANGUAGE SCIENCES

Effective Term

Semester A 2025/26

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 in the modern era often involves a quantitative component, with concepts that can be operationalized as concrete variables that display ranges of discrete values, which can in turn be translated into numerical variables and then scrutinized by statistical tests. This course teaches students to translate linguistic questions into testable hypotheses with quantifiable outcome variables, to calculate statistical measures on those variables, and to interpret these measures to arrive at meaningful answers to the original linguistic questions.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain and calculate measures of central tendencies (mean, median, standard deviation) for different types of variables.		x	x	x
2	Describe and implement the appropriate parametric tests for checking the Null Hypothesis involving ratio/interval variables.		x	x	x
3	Describe and implement the appropriate non-parametric tests for checking the Null Hypothesis involving ordinal/nominal variables.		x	x	x
4	Justify and calculate the correlation between 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.

Learning and Teaching Activities (LTAs)

LTAs		Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will engage in formal lectures to gain knowledge about various statistical concepts, models, and methods. They will gain an overview of how to translate linguistic research questions into quantitative variables through both explanation and through illustrative examples.	1, 2, 3, 4	

2	Classroom Discussions	Students will discuss, clarify, and debate with their peers and with the teacher about (i) how to translate research questions into quantitative hands-on analyses and (ii) their homework exercises from the previous week.	1, 2, 3, 4	
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Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Three Homework Assignments: Students will implement statistical analyses for a range of examples that are relevant to linguistic research in R. (15% x 3)	1, 2, 3, 4	45	Students can use GenAI tools to brainstorm, gather information, solve problems, format references, and edit language. Students should give proper acknowledgment to all the content from GenAI tools that they incorporated into the assignment and keep a journal of their GenAI conversations. Students should not present texts generated or translated by GenAI tools as their own original work.	Yes

2	Preparation and In-class Participation: Students will discuss, clarify, and debate with their peers and with the teacher about their homework exercises from the previous week.	1, 2, 3, 4	15	Students can use GenAI tools to brainstorm, gather information, solve problems, format references, and edit language. Students should give proper acknowledgment to all the content from GenAI tools that they incorporated into the assignment and keep a journal of their GenAI conversations. Students should not present texts generated or translated by GenAI tools as their own original work.	Yes
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Continuous Assessment (%)

60

Examination (%)

40

Examination Duration (Hours)

2

Assessment Rubrics (AR)**Assessment Task**

1. Home Assignments

Criterion

Go through the statistical application cycle (CILOs 1-4): Translate linguistic variables into numerical variables; Choose statistical tests; Interpret statistical measures in terms of linguistic concepts/theories

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

Assessment Task

2. Homework Consolidation (Oral Presentation)

Criterion

Demonstration of understanding of basic concepts; Demonstration of ability to apply basic concepts; Demonstration of ability to explain basic concepts at an appropriate academic style and standard

Excellent (A+, A, A-)

- 1) Comprehensive understanding of the course contents and ability to apply the contents;
- 2) Demonstrating accurate and critical analysis of linguistic instances;
- 3) Presentation format is appropriate in an academic style and standard;

Good (B+, B, B-)

- 1) Comprehensive understanding of the course contents;
- 2) Demonstrating accurate analysis of linguistic instances;
- 3) Presentation format is appropriate in an academic style and standard;

Fair (C+, C, C-)

- 1) Moderate or limited understanding of topics and contents of the course;
- 2) Demonstrating basic ability to analyze linguistic instances;
- 3) Appropriate format in the presentation, but presentation content merely shows some understanding of the differences between academic and non-academic style of presentation and putting that understanding in practice;

Marginal (D)

- 1) Little understanding of topics and contents of the course;
- 2) Insufficient knowledge of course contents;
- 3) Inappropriate presentation style and format for academic presentation;

Failure (F)

- 1) No understanding of topics and contents of the course;
 - 2) Incorrect knowledge of course contents;
 - 3) Inappropriate presentation style and format for academic presentation;
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Assessment Task

3. Examination

Criterion

Go through the statistical application cycle (now with time constraints): Translate linguistic variables into numerical variables; Choose statistical tests; Interpret statistical measures in terms of linguistic concepts/theories

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

Part III Other Information

Keyword Syllabus

populations and samples; frequency distribution; mean, median, mode, variance, standard deviation; normal distribution; null hypothesis; significance level; parametric tests (Z-test and T-test); Non-parametric tests (Mann-Whitney U-test, Wilcoxon signed rank test, Sign test, χ^2 -test); 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 .