

# Course Syllabus

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|---------------------|--|
| <b>Time</b>         | Tu 11:00-13:00 & Th 11:00-12:00  |
| <b>Place</b>        | BV 498   |
| <b>Instructor</b>   | Philip J. Monahan  |
| <b>Contact</b>      | <a href="mailto:philip.monahan@utoronto.ca">philip.monahan@utoronto.ca</a> ( <a href="mailto:philip.monahan@utoronto.ca">mailto:philip.monahan@utoronto.ca</a> ) |
| <b>Office</b>       | MW 338   |
| <b>Office Hours</b> | W 10:00-11:00, Th 10:00-11:00 or by appointment  |
| <b>Prerequisite</b> | LINA02H3 Applications of Linguistics   |
| <b>Exclusions</b>   | LIN305H, PLIC65 (former course code)   |

## Description

An introduction to experimental design and statistical analysis for linguists. Topics include both univariate and multivariate approaches to data analysis for acoustic phonetics, speech perception, psycholinguistics, language acquisition, language disorders, and sociolinguistics. No background in statistics or mathematics (beyond basic algebra) is assumed, but the course will move quickly through a number of analytical techniques.

## Core themes

- Fundamentals of experimental design with emphasis on linguistic research
- Hypothesis testing and issues of population sampling
- Descriptive versus inferential statistics
- Basic inferential statistical methods for various kinds of linguistic data
- Productive use of statistical software R
- Utility of integrating quantitative methods in linguistic research
- Parametric (t-test, ANOVA) vs Non-Parametric (X<sup>2</sup>)

## Objectives

To learn about quantitative methods in linguistics and psycholinguistics by working with real linguistic data. The course will have a special focus on experimental design and re-search methods utilized in the field. Special focus is paid to techniques that allow us, as re-searchers, to draw inferences about the behaviour of populations of speakers/listeners. We will also acquaint ourselves with utilizing the statistical software R (which is the new standard in the field) for conducting both descriptive and inferential statistics in addition to plotting and visualizing data.

## Learning Outcomes

- Evaluate scientific hypotheses from linguistics and their supporting quantitative data
- Critique methods and findings utilized in the primary literature
- Design experiments to test particular hypotheses, determine appropriate methods
- Acquire (basic) proficiency in the statistical software R

## Readings

There is no textbook for this course. Supplemental readings will be supplied via Blackboard and are expected to be read prior to coming to class.

## Assignments

There is no final exam or midterm. Course assignments will be of four fundamental varieties: short homework, long homework, an in-class lab and a final project. Short HW assignments serve as quick reinforcements of manipulating and analyzing data with R, as well as statistical concepts learned in class. Long homework requires more time effort and application of concepts. The in-class lab will take place during Week 7 and will consist of analyzing linguistic data. The final project will arise out of a group work. Groups and topics will be determined once the overall

attendance for the course settles down (early February). Homework will be turned in via Blackboard. In-class Exercise Quizzes will be short Blackboard quizzes to help reinforce the R skills acquired via in-class exercises.

## Grade Breakdown

Short HW (6) 20%  
Long HW (3) 30%  
In-class Lab (1) 25%  
Final Project 20%  
In-class Exercises 5%

## Grading Scheme

The grading scheme used in this class is the standard [UTSC grading scheme](https://www.utsc.utoronto.ca/registrar/u-t-grading-scheme) (<https://www.utsc.utoronto.ca/registrar/u-t-grading-scheme>).

## Late Policy

Late assignments are accepted, but note that your grade will be reduced one letter grade (e.g., A →A-, B+ →B) per late day. Late final papers will **not** be accepted without relevant documentation (e.g., doctor's note, medical certificate) communicated beforehand, unless it is an absolute emergency, of course.

## University Statement on Accessibility

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca) (<mailto:ability@utsc.utoronto.ca>).

## University Statement on Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The [University of Toronto's Code of Behaviour on Academic Matters](https://governingcouncil.utoronto.ca/sites/default/files/import-files/ppjun0119954871.pdf) (<https://governingcouncil.utoronto.ca/sites/default/files/import-files/ppjun0119954871.pdf>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

In academic work:

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from [other institutional resources](https://www.academicintegrity.utoronto.ca) (<https://www.academicintegrity.utoronto.ca>).

## Useful writing resources

[How not to plagiarize](https://advice.writing.utoronto.ca/using-sources/how-not-to-plagiarize/) [\(https://advice.writing.utoronto.ca/using-sources/how-not-to-plagiarize/\)](https://advice.writing.utoronto.ca/using-sources/how-not-to-plagiarize/)

Help with writing:

[UTSC Centre for Teaching and Learning](https://www.utscc.utoronto.ca/ctl/) [\(https://www.utscc.utoronto.ca/ctl/\)](https://www.utscc.utoronto.ca/ctl/)

[UTSC CTL Writing Centre](https://utscc.utoronto.ca/twc/) [\(https://utscc.utoronto.ca/twc/\)](https://utscc.utoronto.ca/twc/)

[UTSC CTL Writing Centre: Using and Citing Sources](https://utscc.utoronto.ca/twc/using-and-citing-sources) [\(https://utscc.utoronto.ca/twc/using-and-citing-sources\)](https://utscc.utoronto.ca/twc/using-and-citing-sources)




[General Services for Students \(SCSU\)](http://scsu.ca/services/student-services/) [\(http://scsu.ca/services/student-services/\)](http://scsu.ca/services/student-services/)

## Tentative Course Schedule

This is subject to change at instructor's discretion. Readings and quizzes will be distributed via Quercus at least the week prior to when they should have been read.

| Week | Date             | Topic                                      | Assignment Due |
|------|------------------|--|----------------|
| 1    | Jan 07-09        | Linguistic Quantitative Research, R Basics |                |
| 2    | Jan 14-16        | Univariate Statistics, Issues of Sampling  | Short HW 1     |
| 3    | Jan 21-23        | Confidence Intervals, F-test               | Short HW 2     |
| 4    | Jan 28-30        | Parametric vs Non-Parametric tests, t-test | Short HW 3     |
| 5    | Feb 04-06        | Non-parametric tests, Graphing your data   | Long HW 1      |
| 6    | Feb 11-13        | Principles of Experimental Design          | Short HW 4     |
|      | <b>Feb 18-20</b> | <b>Reading Week: NO CLASS</b>              |                |
| 7    | Feb 25-27        | In-class Lab                               |                |
| 8    | Mar 03-05        | Multivariate Statistics/Correlations       | Long HW 2      |
| 9    | Mar 10-12        | ANOVA                                      | Short HW 5     |
| 10   | Mar 17-19        | Chi-Square                                 | Long HW 3      |
| 11   | Mar 24-26        | In-class final project time                | Short HW 6     |
| 12   | Mar 31-Apr 02    | Putting it all together                    | Final Project  |

## Course Summary:

| Date             | Details   |             |
|------------------|---|-------------|
| Tue Jan 21, 2020 |  <a href="#">Quiz: Week 2</a> [REDACTED]     | due by 11am |
| Thu Jan 23, 2020 |  <a href="#">Short Homework 1</a> [REDACTED] | due by 11am |
|                  |  <a href="#">Unnamed Quiz</a> [REDACTED]     |             |



