HLTH 204: Biostatistics for Biological and Health Sciences

Winter 2026 Course Outline

Course description. Statistics permeates nearly every aspect of our lives, and its role is particularly important in the biological, life, medical, and health sciences. This course forges the relationship between statistics and our world through extensive use of real applications that bring life to theory and methods. We will focus on the analysis of real data sets including biometric security, body measurements, and clinical trials to understand the behaviour of populations.

This course will cover the essential methods of descriptive and inferential statistics. We plan to cover the following topics:

1. Summarizing and visualizing data with tables, graphs, and descriptive statistics.
2. Probability theory, including discrete, binomial, and normal distributions.
3. Estimating population parameters and determining necessary sample sizes.
4. Conducting formal hypothesis tests for one and two samples.
5. Specialized modelling including Correlation, Regression, ANOVA, and Survival Analysis.

Schedule
There are 14 chapters in the textbook to be covered across 12 weeks of instruction.

Week	Date	Schedule	Assignment Deadline
1	Jan 8	Introduction to Statistics (Ch. 1) & Exploring Data (Ch. 2)	Jan 17
2	Jan 15	Describing, Exploring, and Comparing Data (Ch. 3)	Jan 24
3	Jan 22	Probability: Rules, Bayes' Theorem, Risks and Odds (Ch. 4)	Jan 31
4	Jan 29	Discrete Probability Distributions: Binomial & Poisson (Ch. 5)	Feb 7
5	Feb 5	Normal Probability Distributions (Ch. 6)	Feb 14
6	Feb 12	**No new material - Midterm Review / Catch up time**	n.a.

7	Feb 19	Estimating Parameters and Determining Sample Sizes (Ch. 7)	Feb 28
8	Feb 26	Hypothesis Testing: Basics and Claims (Ch. 8)	Mar 6
9	Mar 4	Inferences from Two Samples (Ch. 9)	Mar 13
10	Mar 11	Correlation, Regression (Ch. 10) & Goodness-of-Fit (Ch. 11)	Mar 20
11	Mar 18	Analysis of Variance (Ch. 12) & Nonparametric Tests (Ch. 13)	Mar 27
12	Mar 25	Survival Analysis (Ch. 14) & Final Review	Apr 3

Course website

Go to the University's LEARN website to find news, assignments, solutions, and data sets for this course.

Textbook

- *Biostatistics for the Biological and Health Sciences*, 2nd Edition by Marc M. Triola, Mario F. Triola, and Jason Roy (Pearson).

Assignments

There are 10 weekly assignments. You will receive a link for each assignment, and you need to submit your solutions online. Late submissions will not be accepted. We will not give individual extensions for any reason.

Exams

The final exam will be comprehensive and is scheduled by the Office of the Registrar.

Time limit.

The final exam will be held on **Sunday April 21, 2024, 4:00 PM.** You have 2.5 hours to finish the exam. You have to finish your answers before 6:30 PM and ensure they are submitted within 15 minutes after the exam.

Final grade. Your final grade is:

- 20% assignments, 20% midterm #1, 20% midterm #2, 40% final exam.

Policy on collaboration.

You may ask your instructor or the TAs for help during their office hours. You may also discuss the assignment problems in small groups. However, **you must write up the solutions on your own.** You are not allowed to use or consult solutions to assignment problems from previous offerings of this course.

Students with disabilities.
AccessAbility Services collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. Please register with them at the beginning of the academic term.