Math 0210/0212 FAO:
Quantitative Methods for the Social and Health Scientists
Winter 2024

Instructor: Alex Hudyma   **Email:** akhudyma@lakeheadu.ca

Class Times: Tuesdays and Thursdays 5:30 - 7:00 pm via Zoom

Class Times: Wednesdays 11:30 am - 12:30 pm via Zoom

Virtual Office Hours: by Zoom appointment

Textbook: *Elementary Statistics: A Brief Version*, 8th Edition, by A. G. Bluman.

Course Webpage: There is a page for the course on myCourseLink through myInfo. Announcements, your WeBWoRK login info, MathMatize info, quizzes, due dates, lecture notes, the syllabus, and any other course information will be posted here.

Course Content: We will cover the majority of the textbook material. By the end of the course students will be able to: summarize both qualitative and quantitative data sets using frequency distributions and graphs; interpret data presented graphically; calculate measures of central tendency such as mean, median, mode, and midrange; calculate measures of variation such as variance, standard deviation, and coefficient of variation; and identify the position of a data value in relation to its data set using both z-scores and percentiles; define a sample space and distinguish between simple and compound events; identify mutually exclusive and independent probability events; compute classical and empirical probabilities, as well as compound and conditional probabilities; use counting rules to compute the probabilities of more complex events; construct and interpret discrete probability distributions; identify binomial distributions and apply the binomial probability formula to compute expected values; use the application of the normal distribution to compute probabilities for normally distributed data; apply the Central Limit Theorem to make predictions about sampling distributions; apply the normal approximation to the binomial distribution to compute binomial probabilities on large data sets; construct confidence intervals for various population parameters and use them to make estimates; perform a variety of hypothesis tests to draw research conclusions; describe relationships between two quantitative variables using Pearson's correlation coefficient and regression lines; and compare three or more population means using one way Analysis of Variance.

Labs: The Wednesday lab time will be for getting help with the homework assignments and will run via Zoom by our TA for the course.

Class Policies: Paying attention during lecture, asking and answering questions, and otherwise participating when prompted are all ways to respect myself and your fellow students. Lakehead University will not tolerate any form of harassment or discrimination to students or instructors. Academic dishonesty (plagiarism, cheating, or impersonation of any kind) is a serious offence and penalties will be strictly enforced.

Tentative Grading Scheme:

Assignments	15%
Quizzes	15%
Test I	15%
Test II	15%
Final Exam	40%

Assignments: Homework will be assigned every week and is to be completed the following Friday via the online homework system WeBWoRK. Late assignments will not be accepted under <u>any</u> circumstances, but I will drop your one lowest assignment mark from your average.

Quizzes: There will be weekly quizzes to be completed every Friday in myCourseLink based on that week's material. You have the full day to take your quiz, and the timer starts when you hit start, so make sure you have a good internet connection and a quiet space to focus. There will be no make up quizzes, but I will drop your one lowest quiz mark from your average.

Tests: Test dates are scheduled online during lecture time on February 8th and March 7th.

Final Exam: The final exam will be scheduled by the registrar during the examination period.

Bonus Marks: We'll be completing MathMatize polls at random during lecture. Each poll you complete will earn you 0.5% bonus marks on the final exam, up to a maximum of 10 polls, i.e. 5% bonus marks on your final exam grade.

Accommodations: Lakehead University is committed to achieving full accessibility for persons with disabilities. This includes arranging academic accommodations for students with disabilities and/or medical conditions to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please contact Student Accessibility Services http://studentaccessibility.lakeheadu.ca (SC0003, 343-8047, or sas@lakeheadu.ca).

Important Dates:

	January 8th	First Day of Winter Term
	January 19th	Final Date to Register
	February 8th	Test I date
	February 19th-23rd	Winter Reading Week
	March 7th	Test II date

March 8th	Final Date to Withdraw
April 9th	Last Day of Winter Term
April 12th-22nd	Examination Period
April 23rd	Exam Contingency Date
April 26th	Marks Due