



# Mathematics 0212

## Quantitative Methods for the Health Scientist

**Instructor:** John Kimball

**Lecture Schedule:** Tuesdays and Thursdays, 11:30am – 1:00pm, RB2025

**Lab Schedule:** Tuesday, 9:00am – 10:00am, RB2025

**Office Hours:** Thursdays 8:45am – 9:45am, RB2006 or by appointment.

**Email:** [jfkimbal@lakeheadu.ca](mailto:jfkimbal@lakeheadu.ca)

**Textbook:** Math 0212 YA – 2023, 2024, Probability and Statistics for Nurses, Course Guided Notes by J. Kimball

**Course Webpage:** There is a page for the course on MyCourseLink through myInfo. Announcements, Assignments, due dates, the syllabus, and any other course information will be posted here.

**Course Content:** By the end of the course students will be able to: solve equations and rearrange formulae, ratio and proportions, unit conversions, permutations and combinations, sets and Venn Diagrams, an introduction to probability; the binomial, poisson and normal distributions; analysis of data; statistical inference; ANOVA; linear regression and correlation; nonparametric methods.

### Course Evaluation:

<b>Attendance</b>	<b>10%</b>
<b>Assignments</b>	<b>20%</b>
<b>MidTerm Exam</b>	<b>20%</b>

<b>Test #1</b>	<b>10%</b>
<b>Test #2</b>	<b>10%</b>
<b>Final Exam</b>	<b>30%</b>

**Attendance:** Students are expected to attend every class and on time. Being late to class is disruptive and disrespectful to the instructor and your peers. Furthermore, coming to every class greatly increases your chances in being successful in this course.

**Assignments:** Working regularly on the assignments is essential for success in this course. Students are also strongly encouraged to do as many problems on their own as their time permits from the extra practice problems.

**Test #1 & #2:** Test #1 will be on **Thursday, October 26<sup>th</sup>, 2023**; Test #2 will be on **Thursday, February 15<sup>th</sup>, 2024**. Students who will not be able to write these days for a valid reason, e.g. religious or illness (medical note is required), must inform both Lisa and myself. An alternative plan will be conjured to ensure you have equal opportunity as your peers to be assessed.

**Exams:** There will be a MidTerm Exam held during the end of the Fall term and a Final Exam at the end of the Winter term. The dates and times will be scheduled by the registrar.

**Course Withdrawal:** The final date that you may drop this course without academic penalty is Friday, February 9<sup>th</sup>, 2024.

**Tutors:** Information to follow...

**Electronic Devices:** In order to be successful in class and minimize distractions for others, cell phones, iPods and other electronic devices must be turned off while lectures are in progress. In an emergency situation, the instructor may give a student permission to use a cell phone or pager.

**Appropriate Language:** In all areas of the University environment, students are responsible to show respect for others. Swearing, or language that is discriminatory or derogatory in relation to race, sex, ethnic background, religious beliefs, age and physical condition is not appropriate.

**Students with Disabilities or Chronic Conditions:** Reasonable accommodations are available for students with a documented disability or chronic condition. It is the student's responsibility to seek these accommodations. If a student has a disability or chronic condition and may need accommodation to fully participate in this class, he/she should contact the Student Accessibility Services located at SC0003 or by phone: 343-8047.

### Assignment – Due Dates

<b>1</b>	Thurs, Sept 14	<b>6</b>	Thurs, Nov 2	<b>11</b>	Thurs, Jan 18	<b>16</b>	Thurs, Mar 7
<b>2</b>	Thurs, Sept 21	<b>7</b>	Thurs, Nov 9	<b>12</b>	Thurs, Jan 25	<b>17</b>	Thurs, Mar 14
<b>3</b>	Thurs, Sept 28	<b>8</b>	Thurs, Nov 16	<b>13</b>	Thurs, Feb 1	<b>18</b>	Thurs, Mar 21
<b>4</b>	Thurs, Oct 5	<b>9</b>	Thurs, Nov 23	<b>14</b>	Thurs, Feb 8	<b>19</b>	Thurs, Mar 28
<b>5</b>	Thurs, Oct 19	<b>10</b>	Thurs, Nov 30	<b>15</b>	Thurs, Feb 15		

## Math 0212 YA Course Plan

Day	Topic	Day	Topic
1	Introduction/Calculator Usage	25	Ch1 – The Nature of Prob and Stats
2	Fractions – Review	26	Ch2 – Freq Distr. and Graphs
3	Introduction to Algebra	27	Ch3 – Data Description
4	Solving Equations I	28	Ch4 – Probability and Counting Rules
5	Solving Equations II (with roots)	29	Ch4 – Conditional Probability
6	Formulae	30	Ch5 – Discrete Probability Distribution
7	<b>Rates/Ratio/Proportion</b>	31	Ch5 – Binomial Distribution
8	<b>Word Problems</b>	32	Ch6 – The Normal Distribution Pt 1
9	<b>Metric Conversions</b>	33	Ch6 – The Normal Distribution Pt 2
10	<b>Imperial Conversion/Conversions III</b>	34	Review
11	<b>Dosages</b>	35	Work Period
12	Review	36	<b>Test #2</b>
13	Work Period	37	Ch7 – Conf Intervals and Sample Sizes 1
14	<b>Test #1</b>	38	Ch7 – Conf Intervals and Sample Sizes 2
15	<b>Counting (with mult rule, factorial)</b>	39	Ch8 – Hypothesis Testing 1
16	<b>Permutations/Combinations</b>	40	Ch8 – Hypothesis Testing 2
17	<b>Sets/Venn Diagrams</b>	41	Ch9 – Hypothesis Testing
18	<b>Intro to Probability</b>	42	Hypothesis Testing/Conf Interval Review
19	<b>Measure of Central Tendency/ Variability</b>	43	Ch10 – Correlation and Regression Pt 1
20	<b>Indirect Area, intro to Z-table</b>	44	Ch10 – Correlation and Regression Pt 2
21	<b>Applications of Normal Distribution</b>	45	Ch 11 – Chi-Square and ANOVA
22	Review	46	Review
23	Review	47	Review
24	Work Period	48	Work Period

Day	1	2	3	4	5	6	7	8	9	10	11	12
Date	Sept 5	Sept 7	Sept 12	Sept 14	Sept 19	Sept 21	Sept 26	Sept 28	Oct 3	Oct 5	Oct 17	Oct 19

Day	13	14	15	16	17	18	19	20	21	22	23	24
Date	Oct 24	Oct 26	Oct 31	Nov 2	Nov 7	Nov 9	Nov 14	Nov 16	Nov 21	Nov 23	Nov 28	Nov 30

Day	25	26	27	28	29	30	31	32	33	34	35	36
Date	Jan 9	Jan 11	Jan 16	Jan 18	Jan 23	Jan 25	Jan 30	Feb 1	Feb 6	Feb 8	Feb 13	Feb 15

Day	37	38	39	40	41	42	43	44	45	46	47	48
Date	Feb 27	Feb 29	Mar 5	Mar 7	Mar 12	Mar 14	Mar 19	Mar 21	Mar 26	Mar 28	Apr 2	Apr 4