Course Outline

MA0212FDE Fall 2013 (Web Based)

Quantitative Methods for Health Scientists

Instructor: Guy Davis , H.B.Sc., M.Sc.(Toronto), B.Ed.(Lakehead)
email: guy.davis@lakeheadu.ca

Course Description: An introduction to probability; the binomial, poisson and normal distributions; analysis of data; statistical inference; analysis of variance; linear regression and correlation; nonparametric methods.

Course Outline: This course is an introduction to probability and statistics for Health Scientists. Topics will include:

What Statistics can and can't tell us;
What are Populations and Samples and variables? ;
How to collect data;
How is data arranged? (Frequency Distributions, Discrete Probability Distributions; Normal Distribution) ;
How sure can we be about our answer? (Confidence Intervals);
How should we design an experiment? (Hypothesis Design and Testing; Tests of Means, Variances and Proportions);
Are different measurements related? (Correlation and Regression; Chi-Square Test; Analysis of Variance) .

Goals and Learning Outcomes:

By the end of this course, successful students should be able to:

1. **Understand the meaning of symbols, words and phrases with statistical denotations and connotations.**
2. **Understand the uses and limitations of probability and statistics.**
3. **Critically read assertions and statements using statistical arguments in Health Sciences related and in everyday communications.**
4. **Identify questions, make hypotheses and design simple experiments to test hypotheses about means, variances and proportions.**
5. **Use Tables and Spreadsheets to test significance of statistics.**

Credit: 0.5

Textbook: Bluman, Allan G.,Mayer, John G., Elementary Statistics. 2nd Canadian Edition , McGraw Hill ISBN 978-0-07-000550-1

Required Materials: 2 rolls of *used Canadian pennies or nickels*. The latter are available at banks and credit unions. Or you can use 100 pennies from your piggy bank . (Used for experiments.)

Class Website: Information, content and assignments will be posted online in Desire2Learn. Desire2Learn may be accessed through mycourselinks on the Lakehead University website. Students should check their email (both LU and Desire2Learn) daily.
Participation: Students will be expected to participate in anonymous surveys which will provide data for assignment questions. Students are also expected to post data on D2L when required by a Lab.

Delivery: This course is Web Based. All course material, reading assignments from textbook, notes, assignments and quizzes will be available through Desire2Learn.

Desire2Learn (D2L), including tutorials on its use, may be accessed through the Lakehead University Website www.lakeheadu.ca and then by clicking on mycourselink.

Assignments will be electronically submitted by dropping into the appropriate assignment Dropbox. Assignments will have a due date for submission, after which assignments will not be marked*. Assignments should be started as soon as possible after posting in order to ask questions via email or the Discussion Forum.

***Exceptions will only be made if arranged in advance, or if there is a serious health problem (Doctor's Note Required.)**

Communication with the instructor will be through Desire2Learn email or Desire2Learn discussion room. Although the instructor will read and return email at least 3 times per week, students should *not* assume that emailing a question about an assignment on the assignment due date will receive a timely response.

Communication *after the course is finished* must be done through the email address above with MA0212 in the subject heading.

Computer Software:
In addition to the computer requirements for on-line courses, students will need an office program such as Microsoft Office or Open Office, with a spreadsheet program, such as MS Excel or Open Office Spreadsheet and a word processor such as MS Word or Open Office Text Editor.

Other forms of submissions may have to be scanned and/or converted to .pdf format. To read .pdf format you will need Adobe Reader http://www.adobe.com/reader/

Students not familiar with spreadsheet programs should learn and practice using one of the tutorials available on the Web. E.g. http://spreadsheets.about.com/

Calculator: Calculations will be done with spreadsheets, so no specific calculator is required. However, a scientific calculator may be of use during quizzes.

Evaluation:	**Weekly assignments (including Labs) and Quizzes**	**70%**
	Final Exam	**30%**

Marks will be reported through MyInfo.
Final Exam will be a formal invigilated 3 hour written exam. Date TBA. When you enrolled in this course you were asked to declare where you would write the exam.

COURSE and UNIVERSITY POLICIES : Academic Dishonesty

The University takes a most serious view of offences against academic honesty such as plagiarism, cheating and impersonation. Penalties for dealing with such offences will be strictly enforced. A copy of the "Code of Student Behaviour and Disciplinary Procedures" including sections on plagiarism and other forms of misconduct may be obtained from the Office of the Registrar.

The following rules shall govern the treatment of candidates who have been found guilty of attempting to obtain academic credit dishonestly.

(a) The minimum penalty for a candidate found guilty of plagiarism, or of cheating on any part of a course will be a zero for the work concerned.

(b) A candidate found guilty of cheating on a formal examination or a test, or of serious or repeated plagiarism, or of unofficially obtaining a copy of an examination paper before the examination is scheduled to be written, will receive zero for the course and may be expelled from the University.

Students disciplined under the Code of Student Behaviour and Disciplinary Procedures may appeal their case through the Judicial Panel.

Note: "Plagiarism" shall be deemed to include:

1. **Plagiarism of ideas as where an idea of an author or speaker is incorporated into the body of an assignment as though it were the writer's idea, i.e. no credit is given the person through referencing or footnoting or end noting.**
2. **Plagiarism of words occurs when phrases, sentences, tables or illustrations of an author or speaker are incorporated into the body of a writer's own, i.e. no quotations or indentations (depending on the format followed) are present but referencing or footnoting or end noting is given.**

Plagiarism of ideas and words as where words and an idea(s) of an author or speaker are incorporated into the body of a written assignment as though they were the writer's own words and ideas, i.e. no quotations or indentations (depending on format followed) are present and no referencing or footnoting or end noting is given

While students are encouraged to help explain concepts and procedures to other students, and students may seek help from tutors or other people:
students are NOT allowed to give answers to labs or assignments to other students;
students are NOT allowed to divide up a lab or assignment and copy parts from each other;
students are NOT allowed to copy answers from tutors, or any other persons.

Any of the above constitute Academic Dishonesty