STAT 101
Introduction to Statistics

Fall 2010
Day Course
Statistics Workshop

Students requiring accommodations as a result of disability, must contact the Centre for Students with Disabilities 778-782-3112 or csdo@sfu.ca

This course may be applied to the Certificate of Liberal Arts

Instructor: Dr. Brad McNeney
Lab Instructor: Robin Insley

Prerequisite:

To receive credit for both STAT 100 and STAT 101, STAT 100 must be taken first. Intended to be particularly accessible to students who are not specializing in Statistics. Students with credit for ARCH 376, BUEC 232 (formerly 332) or STAT 270 (formerly MATH 272 and 371) may not subsequently receive credit for STAT 101-3. Students with credit for STAT 102, 201, 203 (formerly STAT 103), 301, MATH 101 or 102 may not take STAT 101 for further credit.

Textbook:

The Basic Practice of Statistics, 5th Edition, by David S. Moore, W.H. Freeman Publishers
The textbook package is available at the SFU Bookstore. Alternately, students may purchase the online text and resources (StatsPortal) at the Freeman website: **http://www.bfwpub.com/**

Calendar Description:

The collection, description, analysis and summary of data, including the concepts of frequency distribution, parameter estimation and hypothesis testing. **Quantitative.**

Outline:

Aimed at a non-mathematical audience, this course discusses procedures that are most commonly used in the summary of statistical surveys and in the interpretation of experimental data. The rationale for these procedures is explained in detail, but the use of mathematical formulas is kept to a minimum.
The course will include an introduction to JMP IN, a computer package for statistics. You will need access to a computer and to JMP IN to complete the course.

1.The Design of a Statistical Study:
The two major design types, controlled experiments and observational studies, are discussed, with special emphasis on the limitations of each.
2.Descriptive Statistics:
The following methods of summarizing the information in large data sets are introduced: histograms and other graphs, averages, standard deviations, and the normal approximation.
3.Correlation and Regression:
The correlation coefficient is introduced as a measure of the strength of association between two quantities; the regression line, as a graph of averages. Deviations from this line are discussed.
4.Probability:
Methods are presented for computing the probabilities of chance occurrences. The binomial formula is stressed.
5.Chance Variability:
Fallacious interpretations of "The Law of Averages" are brought to light, and the predictable patterns that do indeed emerge in repetitions of chance experiments are discussed.
6.Sampling and Chance Models:
The concept of a sample survey is studied from the design stage through the conduct of the survey to the analysis of the results. Special attention is given to the role of chance errors on the accuracy of the results.
7.Estimation and Tests of Significance:
Elementary methods of analyzing the results of controlled experiments and observational studies are presented. Standard t-tests and c2-tests and related confidence intervals are introduced with emphasis on the role of the chance model, and the interpretation of the results.

Grading Scheme:

Homework – 20%
Midterm – 30%
Final – 50%

Students should be aware that they have certain rights to confidentiality concerning the return of course papers and the posting of marks. Please pay careful attention to the options discussed in class at the beginning of the semester. Students are reminded that Academic Honesty is a cornerstone of the acquisition of knowledge. Scholarly integrity is required of all members of the University. Please consult the General Guidelines of the calendar for more details.

Revised June 2010