SUMMER 2015 - STAT 201 D100

STATISTICS FOR THE LIFE SCIENCES (3)

Class Number: 2061 *Delivery Method: In Person*

COURSE TIMES + LOCATION:

Mo, We, Fr 2:30 PM – 3:20 PM
RCB IMAGTH, Burnaby

EXAM TIMES + LOCATION:

Aug 15, 2015
3:30 PM – 6:30 PM
RCB IMAGTH, Burnaby

INSTRUCTOR:

Scott Pai
scpai@sfu.ca

PREREQUISITES:

Prerequisite: : 30 units. Students with credit for any of STAT 101, 203 or 270 may not take STAT 201 for further credit,

Description

CALENDAR DESCRIPTION:

Research methodology and associated statistical analysis techniques for students with training in the life sciences. Intended to be particularly accessible to students who are not specializing in Statistics. Quantitative.

COURSE DETAILS:

This course may be applied to the Certificate in Liberal Arts

Lab Instructor: Robin Insley

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. Either STAT 101 or STAT 201 is a satisfactory prerequisite for STAT 302. This course will cover most of the chapters of the Moore (7th edition) text.

1. **Data summaries and displays:** Graphical displays, measures of central tendency, measures of dispersion, percentiles, the normal curve, computer generated graphs and data summaries.
2. **Summarizing the relationship between variables:** Scatter plots, the regression line, correlation, and causation.
3. **Basic probability calculations:** The addition and multiplication rules, and independence.
4. **Distributions for count data:** The binomial and Poisson distributions; where they arise, and their basic properties.
5. **Hypothesis tests and confidence intervals:** p-values, confidence levels, and their interpretation; inferences on a proportion and a mean based on the standard normal and t-distributions, underlying assumptions, and a mention of alternatives.
6. **Comparing two treatments:** Completely randomized and paired designs; associated standard normal and t-tests.

7. **Inference on the relationship between two variables:** Simple linear regression and correlation analysis, plus, if time permits, comparing two lines and basic analysis of covariance.
8. **Comparing several treatments:** Completely randomized and randomized block designs; one- and two-way analyses of variance.
9. **Analyzing Frequency Counts:** tests for homogeneity and independence.

Grading

Assignments/In-Class Quizzes	15%
Midterm 1	20%
Midterm 2	20%
Final	45%

NOTES:

All grading is subject to change.

Materials

REQUIRED READING:

Required Textbook:

The Basic Practice of Statistics (7th ed.), by D. S. Moore, W. I. Notz, M. A. Fligner. Publisher: W.H. Freeman The textbook package is available at the SFU Bookstore. Alternately, student may purchase the online text and resources (StatsPortal) at the Freeman website: http://www.bfwpub.com/

DEPARTMENT UNDERGRADUATE NOTES:

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

Tutor Requests:
Students looking for a Tutor should send an email to stat@sfu.ca with "Tutor Request" in the subject line. Please only include information that you would like forwarded to our tutors mailing list (contains people external to the University). We accept no responsibility for the consequences of any actions taken related to tutors.

REGISTRAR NOTES:

SFU's Academic Integrity web site http://students.sfu.ca/academicintegrity.html is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating. Check out the site for more information and videos that help explain the issues in plain English.

Each student is responsible for his or her conduct as it affects the University community. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all

members of the University. http://www.sfu.ca/policies/gazette/student/s10-01.html

ACADEMIC INTEGRITY: YOUR WORK, YOUR SUCCESS