

# Course Outline

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**Course Title:** Statistics for the Life Sciences

**Course Code:** STAT 201

**Fall 2012**

**Credits:** 3

**Section:** C100

**Course Description:**

This is an introductory course in research methodology and associated statistical analysis techniques for students with training in the life sciences. 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.

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.

**Requisite:**

30 units. Students with credit for STAT 101, 102, 203 (formerly 103), 270 (formerly MATH 272) or 301 may not take STAT 201 for further credit. Quantitative.

**Textbook:**

- Moore, David, Notz, William & Fligner, Michael. [\*THE BASIC PRACTICE OF STATISTICS\*](#). (6TH ED.) W.H. Freeman

*Textbook(s) are available for purchase from the SFU Burnaby Bookstore approximately 3 weeks prior to the start of classes, either in person or online through the SFU Bookstore [eService](#).*

**Course Material:**

All course material available online the first day of classes.

**Course Requirements:**

Assignment/Exam	Percentage
Assignment 1	5%
Assignment 2	5%
Assignment 3	5%
Assignment 4	5%
<a href="#">Mid-term Exam</a>	30%
<a href="#">Final Exam</a>	50%

**Requirements Notes:**

Please Note: Students requiring accommodation as a result of a disability must contact the Centre for Students with Disabilities at 778-782-3112 or [csd\\_office@sfu.ca](mailto:csd_office@sfu.ca).

Students are responsible for following all exam policies and procedures (e.g., missing an exam due to illness) available [here](#).

**Fees:**

- [Course materials & service fee](#) \$40.00 CAD

**Delivery Method:**

- [WebCT](#)

**Please Note:** This course outline was accurate at the time of publication but is subject to change. Please check your course requirements carefully when your class starts.

This page was last updated on 26 June 2012.