



# STAT 270

## Introduction to Probability and Statistics

Spring 2011  
Day Course  
Statistics Workshop

Students requiring accommodations as a result of a disability, must contact the Centre for Students with Disabilities 778-782-3121 or csdo@sfu.ca

Instructor: Dr. Derek Bingham (Burnaby)  
Instructor: Gaitri Yapa (Surrey)  
Lab Instructor: Robin Insley

### Prerequisite:

Corequisite: MATH 152 or MATH 155 or MATH 158. Students wishing an intuitive application of a broad range of statistical strategies may wish to take STAT 100 first.

### Textbook:

Probability and Statistics for Engineering and the Sciences, 8th ed., by J. Devore, Duxbury Publishers.

### Calendar Description:

Basic laws of probability, sample distributions. Introduction to statistical inference and applications. Quantitative

### Outline:

1. Introduction to descriptive statistics and chance phenomena.
2. Elementary probability rules, basic combinatorial formulae, conditional probability, independence, and Bayes' theorem.
3. Binomial, hypergeometric, and Poisson distributions.
4. Expectation and variance.
5. Continuous distributions, uniform, exponential, gamma, and normal distributions, normal approximation to the binomial distribution.
6. Discrete, bivariate distributions, joint, marginal and conditional distributions, covariance and independence.
7. Sums of random variables, law of large numbers, the central limit theorem.
8. Introduction to sampling distributions with application to hypothesis testing, and confidence interval problems for a proportion and a mean. (subject to time availability)
9. Scatterplots, simple linear regression, and the correlation coefficient (subject to time availability)

### Grading Scheme:

#### Burnaby

Assignments – 10%  
Midterms – 40% total  
Final Exam – 50%

#### Surrey

Assignments – 15%  
2 Midterms – 20% each  
Final Exam – 45%

The grading is subject to change.