

The University of Western Ontario  
Department of Statistical and Actuarial Sciences  
**STATISTICAL SCIENCE 2143B 2019**

<b>Instructors</b>	<b>Sec</b>	<b>Day/Time</b>	<b>Location</b>	<b>email</b>	<b>Office</b>
Dr. David Stanford Dr. g0D23zaz Sh	001	MWF 1:30-2:30	MC-110	stanford@stats.uwo.ca	WSC 211

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<b>Chapter</b>	<b>Topics</b>
<b>1 Charts &amp; Graphs (1 week)</b>	Introduction, Graphing representation of sample data
<b>2 Descriptive Statistics (1 week)</b>	Sample Statistics: Mean, Median; Variance, Intra-quartile range, Percentiles, Outliers
<b>3 Probability (1 week)</b>	Basic Probability and rules to calculate probabilities
<b>4 Discrete Probability Distributions (1 week)</b>	The Binomial and Poisson distributions
<b>5 Continuous Probability Distributions (1 week)</b>	The Uniform, Exponential, Gamma and Normal distributions
<b>6 Sampling Distributions, LLN, CLT, Normal Distributions (1 week)</b>	Sampling distribution of the Mean, the Law of Large Numbers, the Central Limit Theorem, Normal Curve Calculation; Linear Combination, Normal Approximation to Binomial
<b>7 Inference about population: Estimation (1 week)</b>	One- and Two-sample Confidence Intervals (variance known/unknown)
<b>8 Inference about population: Hypothesis Testing (1 week)</b>	One- and Two-sample Hypothesis Testing (for independent samples and for paired samples)
<b>9 Correlation and Simple Regression Analysis (1 weeks)</b>	Correlation, Regression models; Least Squares Equation, Coefficient of Determination, Inference about Slope Coefficient; Inference about Dependent Variable.
<b>10 Multiple Linear Regression (1 Week)</b>	Regression models where there is more than one independent variable
<b>10 ANOVA and Design of Experiments (1 week)</b>	One Factor ANOVA; Randomized Block Design; Multiple Comparison Tests
<b>12 Statistical Process Control (SPC) (1 week)</b>	Control Charts for variables and attributes

## **GRADING & MEANS OF EVALUATION:**

### **In-class Clickers (10%)**

Can arise anytime during the class time

**To obtain 100% clicker marks, you must have managed to record 90% coherent responses (but need not be the right answer)**

There will be trial period to make sure that clicker works

### **Weekly Quizzes or Activities (15%)**

Every week students must complete an online activity OR a quiz.

**3 weekly activities worth 6% and 9 weekly quizzes worth 9% of the course grade**

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