LIFS3150 Biostatistics (Spring 2019-2020)

Time: Tue Thur 09:00AM - 10:20AM
Place: Zoom

Intended Learning Outcome:

On successful completion of this course, students are expected to be able to:

1. Apply the basic methods of statistical analysis, particularly those commonly used in biological and medical studies.
2. Determine the extent to which it is appropriate to include statistical analysis in experimental design.
3. Critically analyze experimental results and interpret them to draw conclusions.
4. Design and carry out independent research and apply creativity to results analysis through problem solving of given datasets.

Course Format:
There will be two 80-minute sessions per week. **Grades will be based on course attendance (5%), assignments (10%), final exam (85%)**.

Course Instructors:
Prof Kai Liu (Email:kailiu@ust.hk, Tel: 2358-7277, Office: 5445)

Office hour: Tuesday: 12:00-2:00pm

Textbook:

Brigitte Baldi & David S. Moore (2013) The Practice of Statistics in the Life Science, The Third Edition, W. H. Freeman and Company New York

Lecture Outline and Schedule:

25 Feb	Introduction
	PART I Exploring Data
	Exploring Data: Variables and Distributions
27 Feb	Picturing Distributions with Graphs
3 March	Describing Distributions with Numbers
	Exploring Data: Relationships
5 March	Scatterplots and Correlation
10 March	Regression
12 March	Two-Way Tables
	PART II From Exploration to Inference
	Producing Data
17 March	Samples and Observational Studies
19 March	Designing Experiments
	Probability and Sampling Distributions
24 March	Introducing Probability/General Rules of Probability
26 March	Discrete Probability Distributions
31 March	The Normal Distributions
2 April	Sampling Distributions
	The Idea of Inference
7 April	Introduction to Inference/Inference in Practice
9 April	Inference about a Population Mean
14 April	Comparing Two Means
	PART III Statistical Inference
	Inference about Variables
16 April	Inference about a Population Proportion/Comparing Two Proportions
21 April	The Chi-Square Test for Goodness of Fit
	Inference about Relationships
23 April	The Chi-Square Test for Two-Way Tables
28 April	Inference for Regression
5 May	One-Way Analysis of Variance (ANOVA)
7 May	Follow-up Tests/ Two-Way ANOVA
12 May	Nonparametric Tests
14 May	Review Session
	Final Exam