STATISISTICS SYLLABUS

OMICSS 2021

Module description:

The OMICSS Statistics module covers the fundamental concepts of Statistics required to conduct research in the field of Bioinformatics. Paired with the other modules in the OMICSS course, students will have a solid foundation not only in the field of Statistics, but Bioinformatics as a whole.

Module duration:

4 weeks, average 2.5 hours per week

Module Outline:

Week 1	Topics Covered	1. Random Variables 2. Probability Distributions 3. The Central Limit Theorem
	Learning Activities	• Online lecture videos (from different sources, classified by the level of difficulty) • Online exercises
	Estimated duration	3 hours
Week 2	Topics Covered	1. Confidence Interval 2. Introduction to Inference 3. t-distribution 4. Linear Models
	Learning Activities	• Online lecture videos (from different sources, classified by the level of difficulty) • Online exercises
	Estimated duration	2.5 hours
Week 3	Topics Covered	1. Power 2. ANOVA 3. Covariance 4. Correlation
	Learning Activities	• Online lecture videos (from different sources, classified by the level of difficulty) • Online exercises
	Estimated duration	2 hours

Week 4	Topics Covered	1. The Monte Carlo Simulation 2. Exploratory Data Analysis 3. Linear Regression
	Learning Activities	• Online lecture videos (from different sources, classified by the level of difficulty) • Online exercises
	Estimated duration	2 hours