

Syllabus

INTEGBIO 201/120 COMPBIO 210 (Lab) – Spring 2022 Introduction to Quantitative Methods In Biology (4 units)

Lab: 2:00-5:00 over Zoom (Tan 180 reserved)

GSI: Ksenia (Nia) Arzumanova

Email: karzu@berkeley.edu

Office Hours: Wednesdays, 12:00 over Zoom

Tentative week-by-week schedule:

Section 1: Differential equations (Professor Titov)

Lab 1: Python Basics

Lab 2: Python ODEs

Lab 3: Analytical Solutions to ODEs and Systems of Equations

Section 2: Probability theory (Professor Huelsenbeck)

Lab 4: R Basics

Lab 5: Discrete Distributions

Lab 6: Combinatorics

Section 3: Statistics (Professor Nielsen)

Lab 7: Markov Models

Lab 8: Data Visualization & Basic Statistics

Lab 9: Maximum Likelihood

Section 4: Clustering and PCA (Professor Sudmant)

Lab 10: Bootstrapping

Lab 11: Regression

Lab 12: Clustering

Course requirements: Submission of weekly lab report to GSI. The computer labs will account for 30%, the four exams will each account for 10%, and a project due May 13 will count for 30% of the final grade. Graduate students have an option to let the labs count for 30% of the grade and the project count for 70% of the grade. Graduate students are also encouraged to use the project to apply methods to their own datasets.

Accessibility: Labs will be recorded and posted to bCourses.