

Lab Management and Profession Skills Workshop
Spring 2017

Syllabus for BSC 6926: Analysis of population and conservation genetic data

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Office Hours: Monday, Friday 9:30AM-12 noon, and by appointment

PREREQUISITES: Instructor permission required

Course Description

This is a 1-credit course intended for graduate students who have collected population genetic data, and are currently working on analyzing it. Students without data from their own research are encouraged to get other unpublished data from their own labs. I am able to provide unpublished data for analysis to only a small number of students, which I will do on a case by case basis depending on the interests of students.

We will meet for one intensive week of demonstration and instruction. This week is tentatively scheduled for the first week of January, before classes begin. The rest of the semester will only have weekly check-in meetings, to ensure progress on analysis continues. However, students are expected to continue working on their datasets, and to complete a thesis chapter or draft manuscript by the end of the spring semester. Students will need to schedule 1 on 1 or small group meetings with Dr von Wettberg to discuss particular analyses and writing progress.

Draft order of topics: All topics subject to change

Day 1 (tentatively January 2): Introductions; types of population genetic data; quality control approaches; and basic diversity analysis

Day 2: Describe the data you have; STRUCTURE and simple phylogenetic analysis (ie, how many groups do I have in my dataset?)

Day 3: Simple population genetics in R. Paper topic due to Dr von Wettberg.

Day 4: Spatial statistics and effective population size

Day 5: Bayesian Demography

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Following our intensive week, we will have a weekly brown bag meeting (tentatively Thursday at noon) to discuss current progress and allow students to show analyses as they progress

Subsequent due dates:

Preliminary analysis: February 1.

First draft of paper: March 15

Final draft: April 15