

This syllabus is a general representation of the course as previously offered and is subject to change.

BIOL 548O – Advanced Topics in Biology: Dealing with Data Graduate Module

General Course Syllabus (as of April 2019)

About the Course:

Course Description: BIOL 548O is a short course designed to help graduate students develop the skills necessary to organize a computational project, keep records of changes (version control), efficiently optimize a dataset for analyses and future distribution, and improve the reproducibility of analyses

Course Format: Lecture. The course consists of 12 lecture hours (8 class periods).

Credit: 1

Pre-requisites: Enrollment in Zoology graduate program (or, with permission, other graduate programs)

Course Learning Objectives:

By the end of this course, students should learn:

- Principles of version control.
- How to use git and GitHub for version control for computational projects.
- Organizational principles for computational research projects.
- Advanced R programming skills.
- Managing R-based projects in RStudio.
- Principles of tidy data.
- How to use the 'tidyverse' suite of R packages to clean up and reformat untidy data.
- Principles of relational databases and R tools for working with these.
- How to script analyses to improve reproducibility.
- Principles of good metadata.
- Best practices for distributing data.

Grading Scheme / Evaluation:

The course grade is calculated as follows:

- Course participation and homework: 100%

Schedule of Topics:

See Learning Outcomes above

Course Policies:

Students are expected to attend all 8 classes. While it is understandable that students may occasionally have to miss class for research travel, etc. students are to notify the instructor ahead of time and it is required that students enrolled in the course do not miss more than 2 classes.

University Policies:

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence.

UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom.

UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances.

UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on [the UBC Senate website](#).