

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

## **BIOL 548M – Advanced Topics in Biology: Population Ecology**

General Course Syllabus (as of September 2019)

### **About the Course:**

**Course Description:** A course on the fundamentals of population ecology, including principles of population regulation, modelling age- and stage-structured population growth, metapopulation theory, and population viability analysis.

**Course Format:** Lecture (3h/week x 4 weeks)

**Credits:** 1

**Prerequisites:** This course is restricted to students in the GRAD faculty.

### **Course Learning Outcomes:**

By the end of this course, students will be able to:

- Understand the fundamental concepts in population ecology, their historical development, and their contemporary application.
- Critically evaluate theories in population ecology and the predictions they make.
- Outline experiments and observations to test hypotheses in population ecology using knowledge of tools used by population ecologists.
- Communicate concepts in population ecology to peers verbally and in writing.

### **Textbooks and Additional Resources:**

**Textbook:** None required (but, for those looking for extra background, Vandermeer & Goldberg's Population Ecology is a good reference).

**Additional readings** will be provided on the course website on Canvas ([canvas.ubc.ca](http://canvas.ubc.ca)).

### **Grading Scheme:**

| <b>Assessment</b>               | <b>Weight</b> |
|---------------------------------|---------------|
| Class participation             | 30%           |
| Pre-reading writing assignments | 35%           |
| Final project                   | 35%           |

### **DETAILS ON ASSESSMENTS:**

**Class participation and Pre-reading writing assignments:** Each class meeting will be a mix of lecture and participatory activities centered on a pair of required readings.

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For each class period (except for day 1), students will be assigned 1 classic paper and 1 contemporary paper that follows up on its themes, both to be read ahead of class. These will be the subject of short writing assignments due before class and will form the basis for class discussions. Writing assignments should consist of the following:

- a brief (~1 paragraph) summary of the main goals and findings for each paper.
- a short reflection on connections between the classic and the contemporary paper.
- 3 discussion questions for the class.

**Final project (essay or annotated bibliography):** One of the fundamental skills of a scientist is evaluating scientific literature and understanding the significance of work within the context of the field. This project is designed to practice that skill. The instructor will provide a list of additional papers that have made important impacts on population ecology and some guiding questions. Students have the option to either write an **essay (2-3 pages)** on one important paper chosen from the list, or write an **annotated bibliography** with a paragraph explaining why the paper(s) are a classic for its field. With instructor approval, students may also choose another topic under Population Ecology and create an annotated bibliography of 5 papers for it.

### **Schedule of Topics:**

A sample rough outline of topics from 2018W2 is as follows:

| <b>Week</b> | <b>Lecture</b>                           |
|-------------|--|
| 1           | Population regulation and life history   |
| 2           | Building age-and stage-structured models |
| 3           | Incorporating spatial structure          |
| 4           | Conservation applications                |

### **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](#).*