

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

## **BIOL 306 – Advanced Ecology**

General Course Syllabus (as of Jun 2019)

### **About the Course:**

**Course Description:** This course covers fundamental ecological science materials and approaches. Key concepts and information are presented following four main themes that capture major research questions in ecology: 1) what is the fate of primary productivity?, 2) why do species differ in their population dynamics?, 3) how do species coexist?, and 4) are communities stable? Students participate in lectures, interactive learning activities and field labs to meet course learning objectives.

**Course Format:** Lecture and Laboratory

**Credits:** 3

**Pre-requisites:** BIOL 230.

### **Course Learning Objectives:**

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

- Articulate evidence and arguments in the context of the four main course questions (fate of primary productivity, population dynamics, species coexistence, and community stability).
- Illustrate ecological principles using real world examples.
- Explain and interpret classic ecological models and concepts.
- Evaluate scientific evidence for an ecological hypothesis.

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

Materials Needed:

- Clicker
- Access to Canvas course website
- Textbooks:
  - Cain, Bowman and Hacker. 2017. Ecology, 4 th ed. [CBH];
  - Gotelli, N. 2008. A primer of ecology , 4th ed. [G]

### **Evaluation:**

In most weeks pre-reading assignments and accompanying brief quizzes are posted on the course website. Slideshows will be posted, the timing decided by the lecturers.

Lectures prominently include small-group discussions. Students are assessed on both the pre-readings (by quiz) and attendance (by i>clicker). In case of occasional absence, be advised that clicking at 75% of clicker-offered lectures will result in an attendance-score of 100%.

There are three field-labs. Before each lab students study all lab-related postings and complete a brief online quiz; after each lab students share and analyze data and submit a report. Students are assessed for attendance, quiz-completion, and their written reports.

There are two midterm exams, and a cumulative final exam. Sample questions and midterm answer-schemes may be posted in the Exams module.

Assessments	Grade Distribution
Quizzes (online, text & lab)	5% of total
i>clicker responses	5%
Labs	20%
Midterms (2)	25%
Final Exam	45%

### Schedule of Topics:

There are four broad lecture questions in the course, each taking about the same number of lecture-days.

Week	Lecture Topic	Lab	Readings
1	An introduction to Syllabus Overview of four questions Begin Q1: Fate of NPP		[CBH] Chapter 3
2	Q1: Fate of NPP	Lab 1: Quiz	[CBH] Ch 20
3	Q1: Fate of NPP	Lab 1: Field trip	[CBH] Ch 21: 473-480, Ch 22: 495-503
4	Q2: Population Dynamics	Lab 2: Quiz Lab 1: Report due	[CBH] Ch 10: 228-243, Ch. 11: 254-257; [G] Ch 1, 2, 3.
5	Q2: Population Dynamics Midterm 1		[CBH] Ch 10: 228-243, Ch. 11: 254-257; [G] Ch 1, 2, 3.

6	Q2: Population Dynamics	Lab 2: Field trip	[CBH] Ch 11: 257-266, [G] Ch 4, 82-87
7	Q2: Population Dynamics Q3: Coexistence		[CBH] Ch 12: 281-290; [G] Ch 5 (omit 112- 114 top, 115-116)
8	Q3: Coexistence	Lab 2: Report due Lab 3: Quiz	[CBH] TBD
9	Q3: Coexistence Midterm 2	Lab 3: Field lab	[CBH] Ch 13: 292-298, 306-331
10	Q3: Coexistence	Lab 3: Field trip	[G] Ch. 6; [CBH] Ch. 14, 15: 367- 373.
11	Q3: Coexistence	Lab 3: Report due	[CBH] TBD
12	Q4: Stability		[CBH] Ch 17, Ch 18: 183-194
13	Q4: Stability Learning Activity		[CBH] TBD

### Course Policies

- Cheating is not tolerated, and will be reported.
- Total midterm grade: best of 10 + 15, or 15 + 10.
- No make-up midterms; missed exams require a doctor's note
- Participation in labs and class, and course readings are expected. Utilize the TA's office hours.

## **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](#).*