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

BIOL 326 – Experimental Biology of Invertebrates

General Course Syllabus (as of February 2020)

About the Course:

Course Description: This course focuses on the ecology of invertebrates, and covers topics ranging from physiology to behavior to community ecology. These topics will be explored through field surveys and laboratory-based experiments. The goal of the course is not to memorize volumes of data regarding the biology of invertebrates. Rather, the emphasis is on posing scientific questions, generating and testing hypotheses, and presenting results in both scientific and plain-language formats.

Course Format: Lecture and Laboratory

- One 5 hour lecture / lab section every week.
- Students work in pairs.
- Two mandatory field trips outside of class time.
- Two weeks devoted to independent projects.
- One week devoted to project presentations.
- No textbook, no exams.

Credits: 3
Prerequisites: BIOL 205
Corequisites: Either STAT 200 or BIOL 300

Course Learning Objectives:

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

- Understand how to frame and test hypotheses.
- Generate novel data.
- Learn how to analyze and interpret data.
- Learn how to write for scientific and lay audiences.
- Learn how to present results with Powerpoint.
- Gain a greater appreciation of invertebrates.

Textbooks and Additional Resources:

Textbook: There is no textbook for this course. Rather, there will be references to primary literature as it relates to the projects in the lab and in the field.

Course website: on Canvas

Grading Scheme:

Sample grading scheme from 2019W2 (subject to change):

Assessment	Weight
Lab write-ups (first write-up worth 5 points, remaining three worth 10 points each)	35%
Bamfield Trip	10%
Statistical homework assignment	5%
Blog posts (3 posts at 5 points each)	15%
Independent project write-up	20%
Independent project presentation	10%
Effort and participation	5%

Late assignments lose one point per day. There are no exams.

DETAILS ON ASSESSMENTS:

Lab write-ups: There are a total of 8 labs (not including the weekend trip to Bamfield or your independent project), some of which include a field trip. Four of these labs require write-ups. Lab reports will be written jointly with a single lab partner. Reports should be in scientific format, as if they were being submitted to a scientific journal. For the sake of fairness, lab partner pairings will be changed halfway through the term.

Blog posts: In addition to reporting results in scientific format, students will maintain an online blog to share the class findings with the public. Each student will select two labs and/or field trips during the term to write a short blog post discussing the experiment and/or observations and results in “plain English.” A final blog post will also be required for the independent project.

Field trips: There are two class exercises that occur outside of normally scheduled class time this term: an evening field trip to Stanley Park and a weekend trip to the Bamfield Marine Sciences Centre. The Bamfield trip is for the entire weekend (Friday morning through Sunday evening; or Saturday morning through Monday evening). Students with a legitimate, inescapable reason for missing the trip will be required to write an additional lab report (which will be considerably less fun than the field trip will be). There is a fee for this trip (TBA, approximately $150); please come and talk to the instructor if this presents a financial difficulty.

Independent projects: The last several weeks of the course will be devoted to independent projects. Students should submit a 1-paragraph proposal so that the teaching team can suggest refinements or alternatives if the project is unfeasible. The proposal is not marked. Independent projects will be done individually. Projects may be conducted in the lab or the field (or both), and may use marine or terrestrial invertebrates. Students should be aware that the space available to house marine invertebrates in the lab can become limiting, so field projects are encouraged. All

projects should involve a manipulative (experimental) component, rather than being simply observational. If students are particularly keen on their project, there is a possibility of continuing their research as a directed studies project in the future.

Schedule of Topics:

Sample schedule from 2019W2 (subject to change, depending on availability of equipment and critters)

Week	Topic
1	Introduction: patterns, questions, hypotheses, tests ***Evening field trip*** *to Stanley Park*
2	How to write a scientific paper; habitat preferences in terrestrial isopods; **field work** in Pacific Spirit Park (for **lab report 1**)
3	**Field trip** to Jericho RVYC marina, R tutorial (for **Stats homework**)
4	Trophic ecology of sea stars (for **lab report 2**)
5	Shore crab behaviour ***Weekend field trip*** *to the Bamfield Marine Science Centre*
(6)	READING WEEK (NO CLASS) *Optional evening collecting trip*
7	Salinity effects in Burrard Inlet (for **lab report 3**)
8	Thermal ecology *Optional evening collecting trip*
9	Tidepool communities (for **lab report 4**) **Project proposal due**
10	Ecology of freshwater invertebrates
11	PowerPoint tutorial; independent projects
12	Independent projects
13	Independent project presentations
(14)	No class; **Independent project write-ups due**

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 ae 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.