



**University  
of Victoria**

**BIOL 330 / ES 344 - STUDY DESIGN AND DATA ANALYSIS**

**COURSE OUTLINE – SPRING 2019**

**Instructor:** Dr. Janaina Brusco  
**Office hour:** Tuesdays, 2:30-3:30

**Office:** Petch (PCH) 007

**Email:** jbrusco@uvic.ca

**Lab Instructor:** Dr. Neville Winchester **Office:** Cunningham 232 **Email:** winchest@uvic.ca

**Learning Objectives:** Upon successful completion of this course, students will demonstrate:

Ability to frame appropriate and testable hypotheses for a set of data.

Ability to analyze and interpret a set of data in a statistically sound way, so that your interpretation will withstand scrutiny as being a logical and appropriate hypothesis test and interpretation of the data.

**Textbook:** Whitlock & Schluter. 2015. The Analysis of Biological Data. 2nd Ed. Roberts & Co.

**Course Material:** Lecture notes will be available before class on the CourseSpaces website. Exams will be based on lecture material, but the textbook will reinforce the concepts.

<b>Evaluation</b>	
Lecture midterm	20%
Final lecture exam	35%
Lab Quizzes	25%: Three quizzes worth 5%, 8% and 8%
Lab Research Project	Presentation 4%, Report 20%

<b>Letter grade conversion</b>			
A+ 90-100	B+ 77-79.5	C+ 65-69.5	D 50-59.5
A 85-89.5	B 73-76.5	C 60-64.5	F Under 49.5
A- 80-84.5	B- 70-72.5		

**Course Policies:**

- There will be no deferred or supplemental midterm or final exams. If you miss the midterm for a documented medical reason, the evaluation breakdown will be adjusted accordingly. Make-up final exams will only be considered if a formal Request for Academic Concession (RAC) is provided. RAC is available from Undergraduate Admissions and Records in the University Centre.
- The final exam is scheduled by the University. Do not make any plans for that period until you know your schedule.
- Final grades will be assigned on the basis of UVic's official grading scale with 'F' and 'N' as per university regulations.
- The last date for course withdrawal without academic penalty ('F') is 28 February 2019.
- Cellphones are not allowed during class and computers may be used for lecture purposes only

## Course Schedule\*

Week of	Lecture Topic	Chapter	Lab
Jan 7	Statistics and samples Displaying data	1 2	Sample Design & Term Projects
Jan 14	Describing data Estimating uncertainty Probability	3 4 5	Fern lab: Exploring sample variation
Jan 21	Hypothesis testing Normal distribution One sample T-test	6 10 11	T-test Lab 1 <b>Project Description DUE</b>
Jan 28	Comparing two mean Experimental design	12 14 Interleaf 2, 5, 6	T-test Lab 2 Work on Research Projects
Feb 4	Violating test assumptions	13	<b>LAB QUIZ #1</b> Work on Research Projects
Feb 11	ANOVA	15	ANOVA Lab 1
Feb 18	Reading Break		
Feb 25	<b>MIDTERM EXAM (FEB 26)</b> Correlation	16	ANOVA Lab 2
Mar 04	Regression	17, Interleaf 4	<b>LAB QUIZ #2</b> Regression Lab 1
Mar 11	General linear models; ANCOVA	18	Regression Lab 2
Mar 18	Binomial distribution Chi-square goodness-of-fit Contingency analysis	7 8 9	<b>LAB QUIZ #3</b> Work on Research Projects
Mar 25	Computer-intensive methods Meta-analysis	19 21, Interleaf 10	<b>RESEARCH PROJECT PRESENTATIONS</b>
April 1	Knowing which statistical test to use Final exam preparation	Interleaf 7	<b>NO LAB PROJECT REPORT DUE</b>
April 8 - 27	<b>Final Exam Period</b>		

\*The lecture schedule is flexible, topics may or may not be given on the dates shown above