

**BIOL 330 / ES 344**  
**STUDY DESIGN AND DATA ANALYSIS**  
**University of Victoria – Spring 2017**

**Instructor:** Dr. Terri Lacourse – [tlacours@uvic.ca](mailto:tlacours@uvic.ca)  
Cunningham 155a  
Office hours: By appointment

**Lectures (ECS 116):** Tues, Wed, Fri 11:30 AM – 12:20 PM

**Lab Instructors:** Dr. Neville Winchester (Senior Lab Instructor – [winchest@uvic.ca](mailto:winchest@uvic.ca))  
Dr. Rachel Boschen (Teaching Assistant – [reboschen@uvic.ca](mailto:reboschen@uvic.ca))  
Dan Durston (Teaching Assistant – [ddurston@uvic.ca](mailto:ddurston@uvic.ca))

**Labs (HSD A160):** Tues, Wed, Thurs: 2:30–5:20 PM; Thurs 8:30–11:20 AM

**Textbook:** Whitlock, M. & Schluter, D. 2015. The Analysis of Biological Data. 2<sup>nd</sup> Ed. Roberts & Co.

**Course website:** BIOL 330 / ES 344 on [coursespaces.uvic.ca](https://coursespaces.uvic.ca)

**Learning Objectives:** *At the end of the course:*

1. You demonstrate an ability to frame appropriate and testable hypotheses for a set of data.
2. You demonstrate an 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.

**Assessment of Grades:**

Midterm Exam	20%	February 10
Lab Quizzes	25%	three quizzes worth 5%, 10% and 10%
Research Project	20%	Presentation 5% (week of March 27), Report 15% (due April 7)
Final Exam	35%	During Exam Period: April 7-25 (Date set by University)

**Important Notes:**

- 1) If you have any special concerns or needs, please talk to me (or staff at the UVic Resource Centre for Students with a Disability) as soon as possible, so that appropriate accommodations can be made to ensure that you succeed in the course.
- 2) If you miss the midterm (due to an emergency or medical reason with original documentation), the final exam grade will be used in place of the midterm in the final grade assignment.
- 3) The last date for course withdrawal without academic penalty (an 'F') is 28 Feb. 2017.
- 4) Students who do not complete all tests and assignments will be given a final grade of 'N' and will not be permitted to write the final exam.
- 5) Final grades will be assigned on the basis of UVic's official grading scale with 'F' and 'N' as per university regulations.

**BIOL 330 / ES 344 Course Schedule\* – Spring 2017**

<b>Week of</b>	<b>Lecture Topics</b>	<b>Relevant Text Chapters</b>	<b>Lab</b>
Jan 4	Introduction; Types of data; Random sampling	1	No Labs
Jan 9	Describing & Displaying Data; Estimating Uncertainty	2, 3, 4	Fern Lab 1: Field Sampling
Jan 16	Probability; Hypothesis testing; Normal distribution	5, 6, 10	Fern Lab 2
Jan 23	Confidence limits; t-tests; Experimental design	11, 12, 14, Interleaf 2, 5, 6	Fern Lab 3 <b><i>Project Description DUE</i></b>
Jan 30	Experimental design; Violating test assumptions	13, 14	<b>LAB QUIZ #1</b> Work on Research Projects
Feb 6	ANOVA; <b><i>Midterm Exam (Feb 10)</i></b>	15	ANOVA Lab 1
Feb 13	<i>Reading Break</i>		
Feb 20	Correlation; Regression	16, 17 Interleaf 4	ANOVA Lab 2
Feb 27	Regression; General linear models; ANCOVA	17, 18	<b>LAB QUIZ #2</b> Regression Lab 1
March 6	Binomial distribution; Chi-square goodness-of-fit	7, 8	Regression Lab 2
March 13	Contingency analysis; Computer- intensive methods	9, 19	<b>LAB QUIZ #3</b> Work on Research Projects
March 20	Effect size; Meta-analysis; Likelihood	20, 21	Work on Research Projects
March 27	Knowing which statistical test to use; Review	Interleaf 7	<b><i>PROJECT PRESENTATIONS</i></b>
April 3	Final exam preparation		No Labs <b><i>PROJECT REPORT DUE APRIL 7</i></b>

\* The lecture schedule is subject to revision.