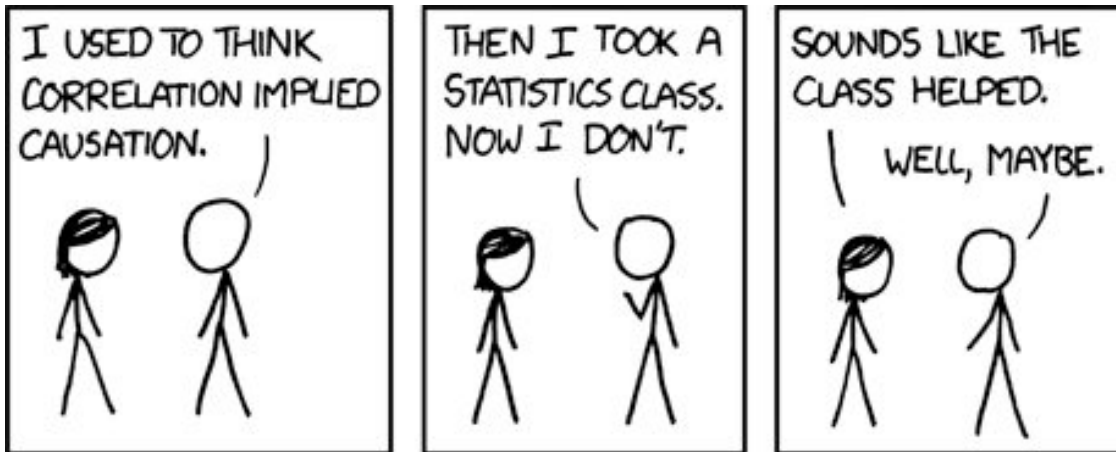


Introduction to Biostatistics - Honors – WILD 240



Fall Semester 2020

Instructor: Dr. Mark Hebblewhite
Professor, FOR 304

E-mail: mark.hebblewhite@umontana.edu



CLASS MEETING TIMES:

Tues 9:40-11:00 via ZOOM <https://umontana.zoom.us/j/95167315317>
Thur 9:40-11:00 via ZOOM <https://umontana.zoom.us/j/92410839285>

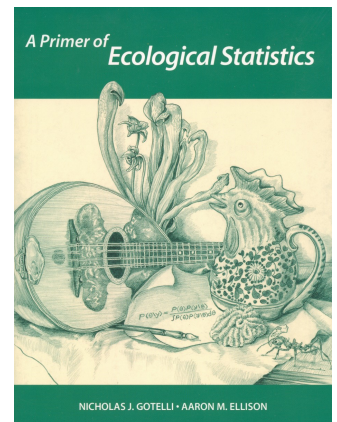
OFFICE HOURS (FOR 304): By Appointment (prefer just after class on Tues/Thur)

COURSE DESCRIPTION: Introduction to statistical ecology: probability distributions, hypothesis testing, statistical theory, philosophy of science and fitting models to data with emphasis on problems in ecological sampling.

COURSE WEBSITE: [Moodle](#)

PRE-REQUISITES: Calculus and/or consent of instructor.

TEXTBOOK: A Primer of Ecological Statistics, 2nd edition. Gotelli and Ellison (2013). Chapter reading assignments for each class shown in brackets with the corresponding dates in class. Readings are required to be read BEFORE class when assigned. Additional readings will be assigned through the semester.



COURSE SOFTWARE: (required) program R (R Core Team 2018), available FREE at <https://www.r-project.org> and R Studio (recommended) available FREE at: <https://rstudio.com/products/rstudio/download/#download>

COURSE OBJECTIVE: To avoid the above joke by the end of the semester; to instill statistical literacy in students; familiarize students with the basic concepts of probability, sampling, and different statistical

approaches; and to gain hands-on experience analyzing, collecting, and managing data for ecological research using R and Excel.

SCHEDULE & REQUIRED TEXTBOOK READINGS

Readings should be read before class each day, additional readings to be assigned in class.

No.	Date	Topic	Readings	Assignments/Exams
1	20-Aug	Course Introduction and Context	None	Stochasticity Podcast
2	25-Aug	Introduction to Probability	Chapter 1	
3	27-Aug	Probability Distributions	Chapter 2	Homework 1
4	1-Sep	Introduction to R & Probability	R readings, Chapter 2	
5	3-Sep	Probability Distributions II	Chapter 2	Homework 2
6	8-Sep	Descriptive Statistics in R	Chapter 3	
7	10-Sep	Confidence Intervals	Chapter 3	Homework 3
8	15-Sep	Hypotheses	Chapter 4	
8	17-Sep	Three Frameworks for Statistical Analysis	Chapter 5	Homework 4; Exam 1 Assigned
9	22-Sep	R Review		Exam 1 Due
10	24-Sep	Experimental Design	Chapter 6	
11	29-Sep	Experimental Design II	Chapter 7	
12	1-Oct	Managing and Curating Data	Chapter 8	Homework 5
13	6-Oct	Descriptive Statistics from Data in R		
14	8-Oct	Analysis of Variance	Chapter 7	Homework 6
15	13-Oct	Analysis of Variance II	Chapter 7, 10	
16	15-Oct	Analysis of Variance III	Chapter 10	Homework 7
17	20-Oct	Regression in R	Chapter 9	
18	22-Oct	Regression in R- II	Chapter 9	Homework 8; Exam 2 Assigned
19	27-Oct	Guest Lecture: Applied Statistics	Assigned readings	Exam 2 DUE
20	29-Oct	Guest Lecture: Applied Statistics	Assigned readings	
21	3-Nov	<i>Election Day - No Classes, Offices Closed</i>		
22	5-Nov	General Linear Models	Assigned readings	Homework 9
23	10-Nov	Survival Analysis - Last Class	Assigned readings	
24	12-Nov	Generalized Linear Models	Assigned readings	Homework 10
25	17-Nov	Model Selection and Inference - Last Class	Assigned readings	
	23-Nov	Final Take Home Exam Due 5:00pm		

FINAL EXAM: Take Home Format, due the last day of exam week, Wednesday November 25 by 5:00 pm.

GRADING: Grades will be based on 2 take home mid-term exams, a take home final exam, and weekly homework assignments. Late assignments will be penalized 10% for each day late. All assignments must be turned in as hard copies; emailed or other electronic files will not be accepted.

- Mid-term exam 1: 25%
- Mid-term exam 2: 25%
- Final exam: 25%
- Homework: 25% (weekly, normally assigned on Thursday, due the following Tuesday)

Note: All homework and take-home exams will be submitted via MOODLE.

Students with Disabilities Statement

- Students with disabilities may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction for students with disabilities in collaboration with instructors and Disability Services for Students, which is located in Lommasson Center 154. The University does not permit fundamental alterations of academic standards or retroactive modifications.
- For more information visit <https://www.umt.edu/dss/>

Student Conduct Code Statement

- All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at: <http://www.umt.edu/student-affairs/dean-of-students/default.php>

Grading Option Statement

- Please note, this class is offered for traditional letter grade only, it is not offered under the credit/no credit option.

Course Withdrawal Deadlines Statement

Important Dates Restricting Opportunities to Drop a Course during Fall 2018:

<https://www.umt.edu/registrar/PDF/201870-Official-Dates-and-Deadlines.pdf>

7 th Instructional Day	Last day for students to add classes on Cyberbear without consent of instructor	August 27 (5:00pm, same for rest)
To 15 th instructional day	Last day for students to drop classes on Cyberbear with refund.	Sept 9
16 th to 45 th instructional day	Drop requires form with instructor and advisor signature, a \$10 fee from registrar’s office, student will receive a ‘W’.	Sept 9 through October 21
Beginning 46 th instructional day	Students are only allowed to drop a class under very limited and unusual circumstances. Not doing well in the class, deciding you are concerned about how the class grade might affect your GPA, deciding you did not want to take the class after all, and similar reasons are not among those limited and unusual circumstances. If	Oct 21

	you want to drop the class for these sorts of reasons, make sure you do so by the end of the 45 th instructional day of the semester.	
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