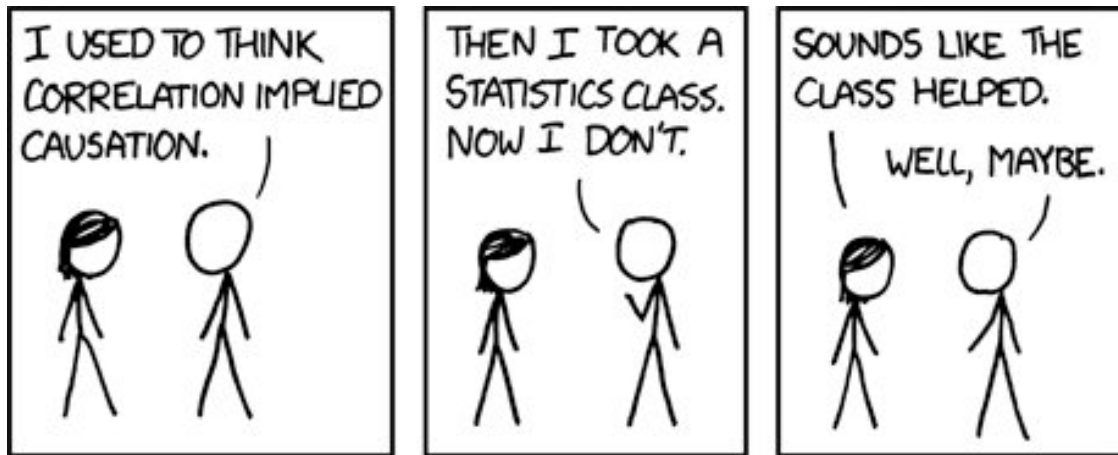


WILD 240 - INTRODUCTION TO BIOSTATISTICS (3 CR)
SPRING 2023



Instructor: Claire Seibold

Email: claire.seibold@mso.umt.edu

*put WILD 240 in the subject line so I can prioritize you!

Office hours: Tuesdays 2-3 pm, Wednesday 4-5pm, and by appointment (in-person or Zoom). Location FOR 314

Class meeting times: Tuesdays and Thursdays, 12:30 – 1:50 pm

Class location: *Stone Hall (SH) 218*- this is a computer lab with workstations available for your use.

Course description: This class is an introduction to statistical ecology, including probability distributions, hypothesis testing, statistical theory, philosophy of science, and fitting models to data with emphasis on problems in ecological sampling. Prerequisites are calculus and/or consent of instructor.

Course outcomes: By the end of the semester students will be able to...

- Demonstrate comprehension and the ability to communicate statistics
- Describe probability distributions of data
- Discuss appropriate sampling and statistical approaches based on research needs
- Collect, manage, and analyze data for ecological research using program R and Excel

Textbook: *None required.* I will be supplying required readings and additional, optional reference material on the various topics throughout the semester from a variety of resources. Please read assigned materials *before* class! It will help you with quizzes.

Course website: Moodle found through UMOonline (<https://umonline.umt.edu/>). I will post announcements, assignments, quizzes, exams, and forums through

Moodle. You can also check your current grade on Moodle. The basics of Moodle are taught in a tutorial, "Moodle 101 for Students", on the course Introduction page if you are not familiar with the site.

Required course software: RStudio Cloud, which is available in the browser: <https://rstudio.cloud/>. You may also download RStudio to your personal computer or the lab workstations. To download, you will need to download R (<https://www.r-project.org>) as well as RStudio (<https://rstudio.com/products/rstudio/download/#download>).

Grading: Your overall grade will be based on exams, homework, quizzes, participation, and the final project as shown in the table on the right. This may change depending on if the class schedule changes. Traditional grading (e.g., A is 90-100%, B is 80-89%, etc.).

***Tentative
Grading***

<i>Participation</i>	10%	40 points
<i>Quizzes</i>	15%	60 points (6 each)
<i>Homework</i>	25%	100 points (10 each)
<i>Exam I</i>	15%	60 points
<i>Exam II</i>	15%	60 points
<i>Final project</i>	20%	80 points
<i>Total</i>	100%	400 points

- *Late assignments-* work will be penalized 10% for being more than a day late. After a week, it will not be accepted unless there are extenuating circumstances.
- *Grammar and spelling-* This is not a writing class, but I need to be able to understand you! Please make sure the work you turn is clear so I can give you the appropriate number of points.
- *Homework-* These assignments give you a chance to practice the theory we are learning in the lecture. You are welcome to work with other students on the homework, but please do not simply share answers. Your lowest homework grade will be dropped at the end of the semester.
- *Quizzes-* These are short and open book, their purpose is to provide you with a checkpoint on your understanding. Your lowest quiz grade will be dropped at the end of the semester.
- *Exams-* These are closed book, but I will provide you with any equations you might need. The exams will be open for students in the computer lab between 12:30 pm and 1:50 pm the day of the exam.
- *Final project-* You will be conducting your own research project in this class through your final project! I will guide you through the steps as problems in your homework then give you more details and set you free to do your own work towards the end of the semester. During finals week you will present your project to the class and turn in a write-up to Moodle. It is a good idea to keep track of your work on this project throughout the semester!

Class attendance and participation policy: Attendance is required and is part of your participation grade.

- If you are late or miss class, communicate with me to receive participation points for the day(s) missed. I will accept one unexcused absence, and after that you will lose participation points for the day(s) missed.

- Quizzes and exams will start promptly when class begins, and no extra time will be given to students entering the classroom late.

Tentative class schedule: The schedule below is likely to change based on class needs and desires. See Moodle for the most up-to-date schedule.

Date	Topic	Assignment(s) due
17-Jan	Course introduction and context	
19-Jan	Probability	Quiz 1
24-Jan	Probability	Homework 1
26-Jan	Introduction to R	Quiz 2
31-Jan	Probability distributions	Homework 2
2-Feb	Probability distributions	Quiz 3
7-Feb	Descriptive statistics	Homework 3
9-Feb	Descriptive statistics	Quiz 4
14-Feb	Confidence intervals	Homework 4
16-Feb	Hypotheses testing	Quiz 5
21-Feb	Hypotheses testing	
23-Feb	Exam I	
28-Feb	Experimental design	Homework 5
2-Mar	Experimental design	
7-Mar	Managing data	Homework 6
9-Mar	Managing data	Quiz 6
14-Mar	Regression	Homework 7
16-Mar	Regression	Quiz 7
21-Mar	Spring break- no classes	
23-Mar	Spring break- no classes	
28-Mar	Analysis of variance	Homework 8
30-Mar	Analysis of variance	Quiz 8
4-Apr	Exam II	
6-Apr	Model selection and inference	
11-Apr	Model selection and inference	Homework 9
13-Apr	General linear models	Quiz 9
18-Apr	Occupancy models	Project Proposal
20-Apr	Abundance models	Quiz 10

25-Apr	Community models	Homework 10
27-Apr	Demographics models	Project Rough Draft
2-May	Final Project Work	
4-May	Final Project Work	
9-May	<u>Finals week:</u> project presentations	Project Final Draft

COVID precautions

- If you feel sick and/or are exhibiting COVID-19 symptoms, please do NOT come to class and contact the Curry Health Center at (406) 243-4330.
- If you are required to isolate or quarantine, you will receive support in the class to ensure continued academic progress. Please notify me to make alternative arrangements.
- UM recommends students get the COVID-19 vaccine. Please direct your questions or concerns about vaccines to Curry Health Center.
- Drinking liquids and eating food is discouraged within the classroom. Please eat or drink away from the computer equipment or in the hallway if you must eat or drink.

Classroom conduct: While you will have access to a computer workstation, your laptop is allowed for solving problems and using Program R. However, you are not allowed to use laptops, cell phones (i.e., please shut them off or on silent mode), etc. to text, email, tweet, surf the internet, use Facebook, or otherwise disrupt learning opportunities for other students. I reserve the right to take away participation points if you disrupt your classmates' opportunities to learn and participate in class. This includes noncompliance with UM and this class's COVID protocols/guidelines/mandates.

The Writing Center: The Writing and Public Speaking Center provides free, one-on-one tutoring to students at all levels and at any time in the writing process and it will be useful for communicating statistics in your homework and final project. www.umt.edu/writingcenter.

UM POLICIES AND GUIDELINES

Grading option: This class is offered for traditional letter grade only.

Student conduct code: 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 \(or see link: https://www.umt.edu/student-affairs/community-standards/default.php\)](https://www.umt.edu/student-affairs/community-standards/default.php).

Cultural leave: Cultural or ceremonial leave allows excused absences for cultural, religious, and ceremonial purposes to meet the student's customs and traditions or to participate in related activities. To receive an authorized absence for a cultural,

religious, or ceremonial event the student or their advisor (proxy) must submit a formal written request to the instructor. This must include a brief description with inclusive dates of the cultural event or ceremony and the importance of the student's attendance or participation. Authorization for the absence is subject to approval by the instructor. Appeals may be made to the Chair, Dean, or Provost. The excused absence or leave may not exceed five academic calendar days- not including weekends or holidays. Students remain responsible for completion or make-up of assignments as defined in the syllabus, at the discretion of the instructor.

Mental health: College students often experience issues that may interfere with academic success such as academic stress, sleep problems, juggling responsibilities, life events, relationship concerns, or feelings of anxiety, hopelessness, or depression. If you or a friend is struggling, we strongly encourage you to seek support. Helpful, effective resources are available on campus.

- If you are struggling with this class, please visit during office hours or contact me by email.
- Check in with your academic advisor if you are struggling in multiple classes, unsure whether you are making the most of your time at the University of Montana.
- Reach out for Support-Curry Health Center Counseling-to make a counseling appointment call 406-243-4712 or email mary.rust@mso.umt.edu.
- If you feel that you would benefit from general wellness skills to support your overall stress, reach out to Curry Health Center Wellness: 406-243-2809.
- If you are experiencing a mental health crisis and seeking immediate help, call 911, go to the nearest hospital emergency room or call Campus Safety at 406-243-4000.
- If you have experienced sexual assault, relationship violence, bullying, intimidation, or discrimination contact Student Advocacy Resource Center (SARC): 406-243-4429; 24-hour support line: 406-243-6559.

Students with disabilities: The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office for Disability Equity (ODE). If you anticipate or experience barriers based on disability, please contact the ODE at: (406) 243-2243, ode@umontana.edu, or visit www.umt.edu/disability for more information. Retroactive accommodation requests will not be honored, so please, do not delay. As your instructor, I will work with you and the ODE to implement an effective accommodation, and you are welcome to contact me privately if you wish.

COVID resources

- Curry Health Center is offering COVID-19 vaccines to anyone who would like one.
- Curry Health Center offers free COVID-19 testing to UM students.
- If you have COVID symptoms, please get a COVID test at Curry Health Center. To assist with contact tracing, please sign the self-disclosure form so

that if you test positive, Curry can share this information with the health department and the University.

- If you test positive for COVID, you will be required to self-isolate, per Missoula City/County Health Department protocol. Please let me know so I can help you to receive materials and keep up with the class.
- If you need to attend class remotely, please take advantage of these [resources for online and remote students](#).

Course withdrawal deadlines: More information can be found at <https://www.umt.edu/registrar/calendar/spring-2022.php>.

Dates	Description
Jan 17, 2023	Spring classes begin Class waitlists expire
Jan 25, 2023 (by 5 pm)	Spring Class Day 7: Last day for students to add classes via CyberBear without consent of instructor.
Jan 26 – Feb 6, 2023	Instructors must issue digital registration overrides in CyberBear to approve any Spring class adds. Departments may continue to enter registration overrides via Banner
Feb 6, 2023 (by 5 pm)	Spring Class Day 15: <ul style="list-style-type: none">• Last day to drop individual Spring classes on CyberBear with no “W”; refunds where applicable• Last day to withdraw from Spring (drop all courses) with no “W”s; partial refunds where applicable – see Withdrawal Policy below.• Last day to add Spring classes with registration override on CyberBear.

	<ul style="list-style-type: none"> • Last day to change Spring credits in variable credit courses & switch grade mode in CyberBear. • Last day to change Spring grading option to or from audit. <p>Last day to buy or refuse UM's student health insurance coverage.</p>
March 20-24, 2023	Spring Break – no classes held
Feb 7 – March 28, 2023 (by 5 pm)	<p>Through Spring Class Day 45:</p> <ul style="list-style-type: none"> • Spring course adds & drops require instructor's & advisor's approval using the Course Add/Change/Drop link in CyberBear. \$10 fee applies per add or drop. • A 'W' will appear on the transcript for dropped classes. No refunds.
March 29 - May 5, 2023 (by 5 pm)	<p>After Spring Class Day 45:</p> <ul style="list-style-type: none"> • Adds require instructor's & advisor's approval using the Course Add/Change/Drop link. \$10 fee applies. • Drops require instructor's, advisor's, & Dean's approval via Course Add/Change/Drop link. \$10 fee applies. • A 'WP' or 'WF' will appear on the transcript for dropped classes. No refunds. • Students can change variable credit amounts, or change grading options, (except audit) using the Course/Add/Change Drop link in CyberBear.
May 8-12	Final exams week

**May 19,
2023**

Grades post to CyberBear and to student transcripts *on or around* this date.