

Wildlife 311/511 – Quantitative Methods for Wildlife and Fisheries Research and Management

Spring 2024 Semester Syllabus

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in a course announcement or through email.

"Sanity is not statistical." – Winston Smith | Winston Smith – "Sanity was statistical."

Course Information

Meeting Times

Lecture: Tuesdays 1:00 – 2:50pm TNR 120

Section 1 Lab: Thursdays 9:00 – 10:50am TNR 356

Section 2 Lab: Thursdays 1:00 – 2:50pm Science Building (SCI) B 228

Instructor Information

Instructor: Jason Riddle

Office: TNR 265

Office Hours: Wednesdays 1:00pm – 2:50pm, or by appointment

Office Telephone: 715-346-3224

E-mail: Jason.Riddle@uwsp.edu (preferred contact)

Course Description

Practical experience in formulating hypotheses, designing field studies, analyzing and interpreting data commonly collected in wildlife and fisheries research and management. Through examples and collected data sets, learn appropriate design, selection of quantitative methods, biological interpretation of results, field complications, and impacts of violations of assumptions.

Credits: 3

Prerequisite/Co-requisite: Either MATH 255 (or concurrent registration) or FOR 321 (or concurrent registration), and CNR major; or Instructor Consent.

Expected Instructor Response Times

- I will attempt to respond to student emails within 1-2 business days. If you have not received a reply from me within 2 business days, then please resend your email. In general, I do not check email late at night or on weekends.
- I will attempt to grade written work within 1 week.

Textbook & Course Materials

Required Text: McKillup (2011) Statistics Explained: An Introductory Guide for Life Scientists, 2nd Edition, Cambridge University Press. The book is available as a rental, but I highly recommend that you purchase a copy of your own.

Course Learning Outcomes

- 1) Define basic terminology of scientific method, experimental design, and statistics
- 2) Describe the relationship between the scientific method, experimental design, and statistics
- 3) Describe data sets using formal statistical terminology
- 4) Justify the most appropriate statistical procedure to test a hypothesis
- 5) Correctly perform statistical calculations and programming
- 6) Interpret the outcomes of statistical procedures
- 7) Design and execute an experiment from hypothesis development to the interpretation of statistical procedures

You will meet the outcomes listed above through a combination of the following activities in this course:

- Engagement with lecture material, labs, and discussions
- Completion of problem sets
- Examinations
- Participation in a group project

Topic Outline/Schedule

Week 1 : January 23-25

Lecture: Introduction to the course

Lab: Why Bother with Statistics? (Chapters 1 and 2)

Week 2 : January 30-February 1

Lecture: Introduction to Hypotheses, sample collection, and experimental design (Chapters 3 and 4)

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Week 3 : February 6-8

Lecture: Hypotheses, sample collection, and experimental design (Chapters 3 and 4)

Lab: Hypotheses, sample collection, and experimental design (Chapters 3 and 4)

Week 4 : February 13-15

Lecture: Data types, visualization, and communication (Chapter 3)

Lab: Data types, visualization, and communication (Chapter 3) & Some probability basics (Chapters 6 and 7)

Week 5 : February 20-22

Lecture: Exam 1 on February 20

Lab: Parametric Statistics and descriptive statistics for populations and samples

Week 6 : February 27-29

Lecture: Descriptive statistics for populations and samples

Lab: Z-tests and t-tests (Chapters 9 and 10)

Week 7 : March 5-7

Lecture: Z-tests and t-tests (Chapters 9 and 10)

Lab: Z-tests and t-tests (Chapters 9 and 10)

Week 8 : March 12-14

Lecture: Single factor ANOVA (Chapter 11)

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Week 9 : March 19-21

No Lecture: Spring Break.

No Lab: Spring Break.

Week 10 : March 26-28

Lecture: Follow-up tests (Chapter 12)

Lab: Two factor ANOVA (Chapter 13)

Week 11 : April 2-4

Lecture: Exam 2 on April 2

Lab: Group Project Progress Meetings

Week 12 : April 9-11

Lecture: Simple linear regression (Chapters 16 and 17)

Lab: Simple linear regression (Chapters 16 and 17)

Week 13 : April 16-18

Lecture: Introduction to Nonparametric Statistics and Chi-square tests

Lab: Introduction to Nonparametric Statistics and Chi-square tests

Week 14 : April 23-25

Lecture: Mann-Whitney test (Chapter 21)

Lab: Kruskal-Wallis test

Week 15 : April 30-May 2

Lecture: Information-Theoretic approaches

Lab: Information-Theoretic approaches

Week 16 : May 7-9

Lecture: Bayesian approaches

Lab: Undergraduate presentations (Chapter 5)

Week 17 : Final Exams5/15 Final Exam on Wednesday from 10:15am – 12:15pm**Student Expectations**

In this course you will be expected to complete the following types of tasks.

- communicate via email
- download and upload documents to Canvas
- read documents online
- view online videos
- participate in online discussions
- complete quizzes/tests online
- upload documents to Canvas to submit an assignment

Technology**Protecting your Data and Privacy**

UW-System approved tools meet security, privacy, and data protection standards. For a list of approved tools, visit this website.

<https://www.wisconsin.edu/dle/external-application-integration-requests/>

Tools not listed on the website linked above may not meet security, privacy, and data protection standards. If you have questions about tools, contact the UWSP IT Service Desk at 715-346-4357.

Here are steps you can take to protect your data and privacy.

- Use different usernames and passwords for each service you use
- Do not use your UWSP username and password for any other services
- Use secure versions of websites whenever possible (HTTPS instead of HTTP)
- Have updated antivirus software installed on your devices

Course Technology Requirements

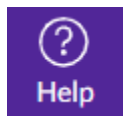
- View this website to see [minimum recommended computer and internet configurations for Canvas](#).
- You may also need access to the following tools to participate in this course in the event that we transition to online learning.
 - o webcam

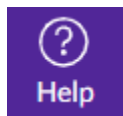
- o microphone
- o printer
- o a stable internet connection (don't rely on cellular)

UWSP Technology Support

- Seek assistance from the [IT Service Desk](#) (Formerly HELP Desk)
 - o IT Service Desk Phone: 715-346-4357 (HELP)
 - o IT Service Desk Email: techhelp@uwsp.edu

Canvas Support



Click on the  button in the global (left) navigation menu and note the options that appear:

| Support Options | Explanations |
|--|--|
| <p>Ask Your Instructor a Question Submit a question to your instructor</p> | <p>Use Ask Your Instructor a Question sparingly; technical questions are best reserved for Canvas personnel and help as detailed below.</p> |
| <p>Chat with Canvas Support (Student) Live Chat with Canvas Support 24x7!</p> | <p>Chatting with Canvas Support (Student) will initiate a <i>text chat</i> with Canvas support. Response can be qualified with severity level.</p> |
| <p>Contact Canvas Support via email Canvas support will email a response</p> | <p>Contacting Canvas Support via email will allow you to explain in detail or even upload a screenshot to show your particular difficulty.</p> |
| <p>Contact Canvas Support via phone Find the phone number for your institution</p> | <p>Calling the Canvas number will let Canvas know that you're from UWSP; phone option is available 24/7.</p> |
| <p>Search the Canvas Guides Find answers to common questions</p> | <p>Searching the Canvas guides connects you to documents that are searchable by issue. You may also opt for Canvas video guides.</p> |
| <p>Submit a Feature Idea Have an idea to improve Canvas?</p> | <p>If you have an idea for Canvas that might make instructions or navigation easier, feel free to offer your thoughts through this Submit a Feature Idea avenue.</p> |

All options are available 24/7; however, if you opt to email your instructor, s/he may not be available immediately.

- Self-train on Canvas through the [Self-enrolling/paced Canvas training course](#)

Grading Policies

Graded Course Activities

| | |
|--------------------|---------------|
| Written Assignment | 50pts |
| Exam 1 | 100pts |
| Exam 2 | 100pts |
| Group Project | 200pts |
| Problem Sets | 250pts |
| Final Exam | 200pts |
| Total | 900pts |

Participation

Students are expected to participate in all graded course activities.

Complete Assignments

All assignments for this course will be submitted electronically through Canvas unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given except under extreme circumstances.

Late Work Policy

Be sure to pay close attention to deadlines—there will be no make-up assignments or quizzes, or late work accepted without a serious and compelling reason and instructor approval.

Viewing Grades in Canvas

Points you receive for graded activities will be posted to Grades. Click on the Grades link to view your points.

Letter Grade Assignment

Final grades assigned for this course will be based on the percentage of total points earned and are assigned as follows:

| Letter Grade | Percentage |
|---------------------|-------------------|
| A | 93-100% |
| A- | 90-92% |
| B+ | 87-89% |
| B | 83-86% |
| B- | 80-82% |
| C+ | 77-79% |
| C | 73-76% |
| C- | 70-72% |
| D+ | 67-69% |
| D | 60-66% |
| F | 0-59% |

Course Policies

Cell Phones and Other Electronics

Cell phones, tablets, and laptops may be distracting to those around you. This is especially true if you are using these devices to view other content. As such, as a courtesy to your classmates and instructors, we ask that electronic devices be put away unless they are being used for note taking or interacting with digital lecture material in class. Please speak with your instructors ahead of time if you have some other reason which requires access to electronics.

Netiquette Guidelines

Netiquette is a set of rules for behaving properly online. Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Working as a community of learners, we can build a polite and respectful course community.

The following netiquette tips will enhance the learning experience for everyone in the course:

- Do not dominate any discussion.
- Give other students the opportunity to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
- Popular emoticons such as 😊 or / can be helpful to convey your tone but do not overdo or overuse them.
- Avoid using vernacular and/or slang language. This could possibly lead to misinterpretation.
- Never make fun of someone's ability to read or write.
- Share tips with other students.
- Keep an "open-mind" and be willing to express even your minority opinion. Minority opinions have to be respected.
- Think and edit before you push the "Send" button.
- Do not hesitate to ask for feedback.
- Using humor is acceptable

Adapted from:

Mintu-Wimsatt, A., Kernek, C., & Lozada, H. R. (2010). *Netiquette: Make it part of your syllabus*. *Journal of Online Learning and Teaching*, 6(1). Retrieved from http://jolt.merlot.org/vol6no1/mintu-wimsatt_0310.htm

Shea, V. (1994). *Netiquette*. Albion.com. Retrieved from: <http://www.albion.com/netiquette/book/>.

Handling Online Materials and Class Recordings (if needed)

Lecture materials and recordings for this class are protected intellectual property at UW-Stevens Point. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or share lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students also are prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that we can help you find a solution.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider unenrolling from a course. Refer to the UWSP [Academic Calendar](#) for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons includes: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Incomplete Policy

Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned if there is a personal or family emergency that hinders you from completing the class by the end of the semester. All incomplete course assignments must be completed by the following semester.

Inform Your Instructor of Any Accommodations Needed

If you have a documented disability and verification from the [Disability Resource Center](#) (DRC) and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student's responsibility to provide documentation of disability to DRC and meet with a DRC counselor to request special accommodation *before* classes start.

The Disability Resource Center (DRC) is located in 108 Collins Classroom Center (CCC) and can be contacted by phone at (715) 346-3365 (Voice) (715) 346-3362 (TDD only) or via email at drc@uwsp.edu.

Statement of Policy

UW-Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. The results of such evaluation must demonstrate the student's achievement in the academic activity, rather than describe his/her disability.

If modifications are required due to a disability, please inform the instructor and contact the Disability Resource Center in 108 CCC, or (715) 346-3365.

Commit to Integrity

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in class and also integrity in your behavior in and out of the classroom.

UWSP Academic Honesty Policy & Procedures

Student Academic Disciplinary Procedures

UWSP 14.01 Statement of principles

The board of regents, administrators, faculty, academic staff and students of the university of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the university of Wisconsin system. The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students who violate these standards must be confronted and must accept the consequences of their actions.

UWSP 14.03 Academic misconduct subject to disciplinary action.

- (1) Academic misconduct is an act in which a student:
 - (a) Seeks to claim credit for the work or efforts of another without authorization or citation;
 - (b) Uses unauthorized materials or fabricated data in any academic exercise;
 - (c) Forges or falsifies academic documents or records;
 - (d) Intentionally impedes or damages the academic work of others;
 - (e) Engages in conduct aimed at making false representation of a student's academic performance; or
 - (f) Assists other students in any of these acts.

- (2) Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a

person other than the student under whose name the work is submitted or performed.

Masking Policy

Face coverings must be properly worn indoors as well as on University transportation if UWSP and/or UW System require. Failure to comply with policies is considered student misconduct. Any exemptions must be cleared with DRC and communicated with the instructor prior to the start of class.

Religious Beliefs

Relief from any academic requirement due to religious beliefs will be accommodated according to UWS 22.03, with notification within the first three weeks of class.