

Quantitative Fish and Wildlife Analysis
BIOL 830P, Sections 03 & 04, 3 credits
Spring 2021

Department of Biology
College of Arts and Sciences
University of Nebraska Kearney

CLASS LOCATION AND MEETING TIME: CMCT 241; Wednesdays, 10:10 – 11:00 am

Note: This course is delivered as a blended format. This means that on-campus students will meet synchronously for one hour per week (or 1/3 of the course). Online students will be encouraged to participate in the synchronous meetings through a live recording, but this is not required. *Synchronous meetings will be recorded so that online students who cannot participate live will be able to view each week's lecture/in-class discussion.* The rest of our contact time each week will be online. This may include online readings, discussions, practice problems, other assignments, and projects. Deadlines for all assessments are provided in Canvas in several locations (e.g., on the assignment itself, in the announcements, etc.) and will be reminded in class.

INSTRUCTOR CONTACT INFORMATION:

Dr. Melissa R. Wuellner, Associate Professor

Office: BHS 345

Office hours: Mondays and Wednesdays: 1:30 – 2:30 pm; Tuesdays: 2:00 – 3:00 pm. Zoom meetings can be scheduled upon request.

Office phone: (308) 865-8006

Email: wuellnermr@unk.edu or through Canvas

COURSE WEBSITE: See Canvas course page (<http://canvas.unk.edu>)

**You can also install the Mobile App for Apple or Android.

COURSE DESCRIPTION:

Review of study designs and statistical analyses commonly used in field- and laboratory-based wildlife and fisheries research.

STUDENT LEARNING OUTCOMES:

By the end of this course, students should be able to:

- 1) Write goals, research questions, objectives, and hypotheses for any wildlife or fisheries research project.
- 2) Develop a study design to address the objectives and goals of a wildlife or fisheries research project.
- 3) Identify which statistical analyses are most appropriate for a given wildlife or fisheries research project and justify why that analysis was selected.

PREREQUISITES:

There are no formal prerequisites for this course.

INSTRUCTIONAL METHOD:

This course is presented as a blended course as previously noted. Before our synchronous meeting (on-campus) or before viewing the lecture (online) please be sure to read the assigned material so that you are prepared for our interactive lecture/discussion. Taking notes on the assigned reading and in class are both good steps! Please use the classwide discussion board or contact me whenever you have questions on the content.

The online portion of the class each week requires good time management and self-study. The online portion will include analytical exercises related to that week's content and/or discussions of additional readings or

planning of the group project you'll be working on throughout the semester (see next paragraph). In general, extra effort is often required in an online course compared to the classroom-based version because most of the work rests on your shoulders. You will be required to read or view any additional assigned materials (example: another reading for the discussion) each week. Most weeks include at least one discussion. Weekly course updates and reminders will be provided via the "Announcements" feature in Canvas and one other assignment. Communication with the instructor can be by phone, e-mail, or in person. You are encouraged to use all three as frequently as needed.

Instead of exams, I will be "testing" your ability to integrate and apply what you have learned from the class into a small group project. I will be assigning you to your groups so that I can mix up areas of interest and on-campus and online students together. The project will be broken down into different sections, and you will be working on it throughout the entire semester.

COURSE REQUIREMENTS:

On-campus students are required to make each week's synchronous meeting (unless your absence has been previously communicated with me), and online students are required to view the recorded discussion each week (if they don't join the live class via Zoom). All students are required to complete all assigned readings, view all presentations, and contribute to all discussions as scheduled. Assignments and other assessments must be turned in by the assigned due dates. Students should make the effort to log into the class throughout the week rather than just one or two days, even if it is just a "quick check" of the discussions or announcements.

UNIVERSITY POLICIES RELATED TO COVID-19:

The university community is deeply concerned for the well-being of its students, faculty, and staff. Keeping each other as safe as possible will require commitment from each of us; failure to do so will literally place lives in danger. The full policy relating to mitigation of the spread of infectious diseases can be found at <https://www.unk.edu/coronavirus/>. Policies that apply to all courses (online, remote, blended, or face-to-face) include:

- Students shall monitor their health daily. No student shall attend classes in person while sick. Those who have had contact with positive-tested individuals or show COVID-19 related symptoms must have clearance from the Public Health Center prior to returning to face-to-face classes. There will be no penalties for missing classes for COVID-19 related absences. Students will still be responsible for course content through alternative attendance or other options arranged with the instructor.

Additional policies specific to face-to-face instruction include the following:

1. During Phases I and II, all students are required to wear masks that cover the nose and mouth at all times during class and at any time, inside or outside, where physical distancing of at least 6' is not possible. Instructors shall maintain 16' of distance from students while lecturing but may be closer, if masked. Instructors have the authority to direct students who refuse to wear masks to leave the classroom. Students who have medical issues that make masks inadvisable should contact Disability Services for Students at 308.865.8214 to request an exemption.
2. Students shall not arrive for class more than 5 minutes before the scheduled start time for the course. Instructors shall dismiss students promptly at the end time and all shall leave the classroom promptly. Students who have questions should use office hours rather than before/after class times.
3. Instructors and students should clean their desks prior to class. Cleaning materials will be provided.
4. Additional requirements for Phase III, for specialty courses such as labs or performing arts, or for experiential learning are detailed below.
 - a. Because this is an online course, there are no additional requirements for Phase III at this time. If you do come to campus for another class or any other reason, please review the related policies for that course or any additional campus guidelines prior to coming to campus.

Questions regarding COVID-19 should be directed to the Public Health Center unkhealth@unk.edu or 308-865-8254. Questions regarding the COVID-19 academic policy should be directed to Sr. Vice Chancellor Bicak at bicakc@unk.edu. Questions regarding department specific requirements should be directed to the

chair of the relevant department. The chair for the Department of Biology is Dr. Julie Shaffer. She may be contacted via email at shafferjj@unk.edu or by phone at 308-865-8661.

WHAT HAPPENS IF UNK GOES REMOTE?

It is possible that on-campus classes could move to remote delivery at any time during this semester. I will work to make the transition for all as seamless as possible. The course schedule will proceed as noted in the syllabus, regardless of whether the UNK campus is open or closed.

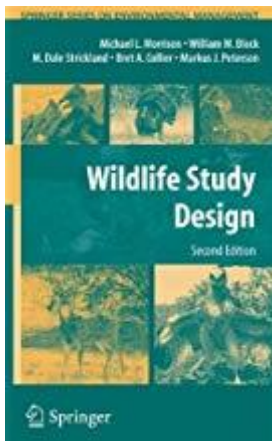
MISSED ASSIGNMENTS/QUIZZES/EXAMS AND MAKE-UP POLICY:

Any and all assignments, quizzes, or exams in this class **MUST** be submitted or completed by the deadlines provided unless you and I have discussed otherwise. This helps me manage grading and ensure that your assessments are returned back to you as soon as possible. If we have not discussed missing class or an assignment/quiz/exam, you will receive a **zero** on any relevant assessments. **Please note that computer emergencies (e.g., hard drive crashed, internet outage etc.) may not be NOT considered an excuse in some situations. You should always have an alternative means of accessing or submitting electronic information and course work.**

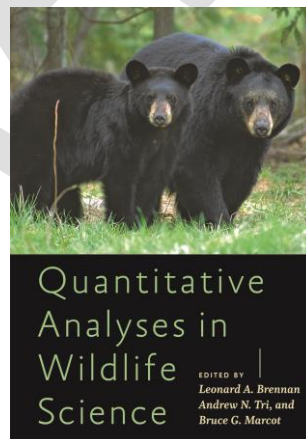
If you are experiencing symptoms that could be COVID or other illnesses, please let me know as soon as possible. We can discuss options for making up missed coursework, or I can provide you options for how you might exit the course without penalty within the confines of university policies. Options may vary depending on the duration and timing of your illness.

REQUIRED MATERIALS:

There are two textbooks required for this course. Please see book information below. These books will be available at UNK's Antelope Bookstore or can be purchased through your favorite textbook provider (Amazon, Barnes and Noble, etc.).



Wildlife Study
Design, 2nd Edition
Morrison et al. 2008
ISBN-13: 978-
0387755274



Quantitative Analyses in
Wildlife Science
Brennan et al. 2019
ISBN-13: 978-
1411431079

All other assigned readings will be provided on Canvas. For research resources, please be sure to use the distance services provided by the UNK library as well as online search engines (e.g., Google Scholar) as you may need to access older articles that may or may not be available online.

GRADING POLICY: Below is a roughly estimated breakdown of the assignments and points for this course. Please note that these points may be subject to change but that those changes will be communicated with you in a timely fashion. Grades will be entered in Canvas so you should be aware of where you stand throughout the semester.

Grade Item	Points
Project Proposal/Study Design	100
Project Analysis/Discussion	100
Final Presentation	50
Online Discussions	200
Various assignments	200
TOTAL	650

Grades in this class will be assigned according to the standard scoring system described below. Only by attaining these percentages can you be assured of receiving a desired grade.

A+	97 – 100%	A	94 – 96 %	A-	90 – 93%
B+	87 – 89%	B	84 – 86%	B-	80 – 83%
C+	77 – 79%	C	74 – 76%	C-	70 – 73%
D+	67 – 69 %	D	60 – 64%	D-	60 – 63%
		F	< 60%		

Please note: If your final grade is within 0.5% of the next highest grade, your grade will be rounded up (e.g., an 89.50% will be considered an "A-"). This is the definitive cutoff for rounding grades. There will be no exceptions to this policy.

COURSE CALENDAR: This is a *tentative* course schedule. If changes are made to the schedule, the class will be notified. Check the assignment directions and the “Announcements” page for due dates for all assessments.

Week Dates (Meeting Day)	Theme	Pre-Lecture Reading	Reading for Discussion	Discussions	Assignments
1/25 – 1/31 (1/27)	Getting Started	None, but do watch the “Navigating the Course” video	Chapter 1 (Morrison et al. 2008)	What are the biggest challenges to studying wildlife and fish?	Personal Introduction Video and Responses Experience with Stats Survey
2/1 – 2/7 (2/3)	Study Design: Part I	Chapter 2 (Morrison et al. 2008)	None	Introduction to the Group Project	Rate and Rank the Projects
2/8 – 2/14 (2/10)	Study Design: Part II	Chapter 3 (Morrison et al. 2008)	Johnson (1999)	Meet your Group Should we do away with hypothesis testing?	Beginning Your Project: Developing Your Research Goal, Question(s), Objectives, and Hypotheses
2/15 – 2/21 (2/17)	Critiquing Studies: An Introduction	Hurlburt (1984) Vance et al. (2013)	Phillipp et al. (2009)	Critiquing Phillip et al. (2009) Revision of First Assignment	Revise Goal, Questions, and Objectives
2/22 – 2/28 (2/24)	Population-level Analyses: Counts, Abundance, Density	Chapter 5 (Brennan et al. 2019)	None, but do watch the “R Demonstration” for this week.	Building Your Bibliography	Pop. Estimate Exercise in R Bibliography of Similar Studies
3/1 – 3/7 (3/3)	Population-level Analyses: Age & Size	Paukert and Spurgeon (2017) Schoup and Michaletz (2017) Ogle et al. (2017) Neumann et al. (2012)	None, but do watch the “Age and Size Demonstration” for this week.	Working on Your Group’s Study Design Idea	Age and Size Exercise Submit Your Group’s Study Design Idea
3/8 – 3/14 (3/10)	Population-level Analyses: Resource Selection	Chapter 12 (Brennan et al. 2019)	None	Peer-review Feedback on Study Design	Resource Selection Exercise Peer Feedback on Study Design
3/15 – 3/21 (3/17)	Population-level Analyses: Spatial Analysis	Chapter 13 (Brennan et al. 2019)	None	Working on Your Group’s Study Design Idea	Spatial Analysis Exercise Revise Study Design

Week Dates (Meeting Day)	Theme	Pre-Lecture Reading	Reading for Discussion	Discussions	Assignments
3/22 – 3/28 (3/24)	Community Analyses: Multivariate Models	Chapter 3 (Brennan et al. 2019)	Data Organization in Spreadsheets for Ecologists	Discuss your Data: How does it need to be Organized and Cleaned	Multivariate Model Exercise Show Me the Data!
3/29 – 4/4 (3/31)	Community Analyses: Competition and Predation	Crowder (1990) Smith (1985) Pianka (1974)	None	Discussing Your Analyses	What Analysis Will you Choose?
4/5 – 4/11 (4/7)	Social Science Data	Little and Rubin (1989)	None	Revising and Conducting Analyses for Group Project	Revision of Proposed Analysis for Group Project
4/12 – 4/18 (4/14)	Final Project and Presentation Preparation: Figures and Tables	Weissgerber et al. (2015)	None	Data Analyses and Visual Presentation	None (But continue to prepare for final group presentation and report)
4/19 – 4/25 (4/21)	Week 1 of Final Projects and Presentations	None	None	None	Final Presentations and Reports
4/26 – 5/2 (4/28)	Week 2 of Final Projects and Presentations	None	None	None	Submit peer evaluations
Finals Week	<i>FINAL REFLECTION (Due by 11:59 pm Central on 5/5)</i>				

PLAGIARISM AND ACADEMIC DISHONESTY:

Plagiarism is defined as using more than four consecutive words from a source without a citation. You may not use another's words directly without putting them within quotations. It is also plagiarism when either an author's ideas or organization of concepts are used without giving a citation. Students caught plagiarizing will receive a failing grade for the assignment and will face additional punishments up to expulsion as outlined by University policy. I invite you to visit the online resource <http://www.plagiarism.org/> to make sure you understand what plagiarism is and how to avoid it.

In a similar vein, copying another student's work and claiming it as your own is considered a similar form of academic dishonesty. In this class, I do allow students to collaborate with one another, whether on homework or even exams. However, your submissions should reflect your own efforts and not the efforts of a classmate or classmates. Your learning and grade are your own and should be earned by you, even when collaborating with others.

STUDENTS WITH DISABILITIES:

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities. To receive accommodation services for a disability, students must be registered with the UNK Disabilities Services for Students (DSS) office, 175 Memorial Student Affairs Building, 308-865-8214 or by email unkdso@unk.edu.

STUDENTS WHO ARE PREGNANT:

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students who are pregnant. To receive accommodation services due to pregnancy, students must contact Cindy Ference in Student Health, 308-865-8219. The following link provides information for students and faculty regarding pregnancy rights. <http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-faqs-college-and-graduate-students>.

UNK STATEMENT OF DIVERSITY & INCLUSION:

UNK stands in solidarity and unity with our students of color, our LatinX and international students, our LGBTQIA+ students and students from other marginalized groups in opposition to racism and prejudice in any form, wherever it may exist. It is the job of institutions of higher education, indeed their duty, to provide a haven for the safe and meaningful exchange of ideas and to support peaceful disagreement and discussion. In our classes, we strive to maintain a positive learning environment based upon open communication and mutual respect. UNK does not discriminate on the basis of race, color, national origin, age, religion, sex, gender, sexual orientation, disability or political affiliation. Respect for the diversity of our backgrounds and varied life experiences is essential to learning from our similarities as well as our differences. The following link provides resources and other information regarding D&I: <https://www.unk.edu/about/equity-access-diversity.php>.

REPORTING STUDENT SEXUAL HARASSMENT, SEXUAL VIOLENCE OR SEXUAL ASSAULT:

Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree possible. Any student who believes she or he may be the victim of sexual misconduct is encouraged to report to one or more of the following resources:

Local Domestic Violence, Sexual Assault Advocacy Agency: 308-237-2599

Campus Police (or Security): 308-865-8911

Title IX Coordinator: 308-865-8655

Retaliation against the student making the report, whether by students or University employees, will not be tolerated.

VETERANS' SERVICES:

UNK works diligently to support UNK's military community by providing military and veteran students and families with resources and services to help them succeed. Veterans Services assists with the GI Bill process and acts as a liaison between the student and the Veterans Administration. If you need assistance or would like more information, please contact Lori Weed Skarka at 308-865-8677 or unkveterans@unk.edu.

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