SYLLABUS
ENR 8375
Design of Natural Resource Studies
Autumn 2020 (full term)
3 credit hours
Synchronous Online — Tuesday 9:10–12:10

COURSE OVERVIEW
This is a discussion-driven course that will emphasize student understanding of different types of study design, critical considerations when designing studies, and appropriate analytical and inferential frameworks for interpreting results. The course is practical in that students can use this course as an opportunity to develop or flesh out the design of a study relevant to their graduate research.

Instructor
Instructor: Dr. William Peterman
Email address: Peterman.73@osu.edu (preferred contact method)
Phone number: 573-823-0768 Office location: 375B Kottman Hall
Office hours: Thursday 8:00 am – 12:00 pm

Prerequisites
None

Course description
Catalog description: This is a discussion-driven course that will emphasize student understanding of different types of study design, critical considerations when designing studies, and appropriate analytical approaches and inferential frameworks. The course is practical in that students can use this course as an opportunity to develop or flesh out the design of a study relevant to their graduate research.

This course will teach beginning graduate students the principles of natural resource study design in the context of wildlife, conservation, ecological, behavioral, and evolutionary research. It is a
A discussion-driven course revolving around primary literature and book chapters, as well as study design proposals and presentations prepared by each student. The course is meant to be practical in that students can use this opportunity to develop or flesh out the design of a study relevant to their graduate research. Emphasis will be placed on understanding different types of study designs, critical considerations when designing studies, and appropriate analytical and inferential frameworks.

**Course learning outcomes**

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

- Design a field research study that can critically evaluate research hypotheses or address research goals
- Assess the trade-offs and/or limitations between different study designs
- Develop testable predictions or hypotheses
- Identify the analytical and inferential framework that is most appropriate to evaluating data collected under different study designs

**HOW THIS ONLINE COURSE WORKS**

**Mode of delivery:** This course is 100% online. Course meetings will occur synchronously during the scheduled meeting time (Tuesday 9:10 am –12:10 pm).

**Pace of online activities:** As a discussion-based course, students are expected to be present online in Zoom classroom during the scheduled class time.

**Credit hours and work expectations:** This is a 3-credit-hour course. According to Ohio State policy (go.osu.edu/credithours), students should expect around 3 hours per week of time spent on direct instruction (instructor content and group discussion) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average.

**Attendance and participation requirements:** Because this is an online course, your attendance is based on your presence and participation during the scheduled course time. The following is a summary of students’ expected participation:

- **Participating in online weekly discussion:** EVERY WEEK
  You are expected to be present on Zoom during our scheduled course meeting time. Student success in this course is tied to regular attendance. Your participation grade will be reduced 5% for each unexcused absence. Absences can be excused with communication and documentation related to the absence. If you have a situation that might cause you to miss class, please discuss with me as soon as possible.
Office hours and live sessions: OPTIONAL
Office hours are optional, but available Thursdays 8:00 am –12:00 pm. Email or text me to set up a Zoom meeting.

COURSE MATERIALS AND TECHNOLOGIES

Readings

All readings will be made available on Carmen (https://carmen.osu.edu), or can be accessed through OSU library, and will consist of articles from the primary literature and select book chapters.

Course technology

Technology support

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

- Self-Service and Chat support: ocio.osu.edu/help
- Phone: 614-688-4357(HELP)
- Email: servicedesk@osu.edu
- TDD: 614-688-8743

Technology skills needed for this course

- Basic computer and web-browsing skills
- Navigating Carmen (go.osu.edu/canvasstudent)
- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings)

Required equipment

- Computer: current Mac (MacOs) or PC (Windows 10) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone
- Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication
Required software

- Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Full instructions for downloading and installation can be found at go.osu.edu/office365help.

Carmen access

You will need to use BuckeyePass (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device help article for step-by-step instructions (go.osu.edu/add-device).
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click Enter a Passcode and then click the Text me new codes button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the Duo Mobile application (go.osu.edu/install-duo) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357(HELP) and IT support staff will work out a solution with you.

GRADING AND FACULTY RESPONSE

How your grade is calculated

<table>
<thead>
<tr>
<th>ASSIGNMENT CATEGORY</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research proposal</td>
<td>25</td>
</tr>
<tr>
<td>Peer review</td>
<td>25</td>
</tr>
<tr>
<td>Presentation</td>
<td>50</td>
</tr>
<tr>
<td>Participation</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
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</table>

See course schedule below for due dates.
Descriptions of major course assignments

Research Proposal

Description:
You will write a research proposal on a topic or project of interest. It should be of practical benefit for you and your research, regardless of where you are in your career. This is not intended to be a full-blown proposal. Much less time and effort will be spent on background, justification, and implications. These are obviously critical, but are not the focus of this exercise. Emphasis will be placed on clearly aligning your study design with your stated goals, objectives, and hypotheses, as well as proposed analyses.

- Initial draft due Week 11
- Final proposal due Week 15

Academic integrity and collaboration:
Your research proposal is expected to be your own work, but may be modified from an existing written proposal.

Peer Review

Description:
You will provide critical review of a peer’s research proposal. We will discuss the anatomy and expectations of a quality peer review, and your review will be evaluated in light of these.

- Reviews will be due Week 12

Academic integrity and collaboration:
This is an independent assignment that must be your own original work.

Presentation

Description:
You will give a ~12 minute presentation, followed by a ~12 minute class discussion. Presentations need to detail the objectives, hypotheses, and analyses being proposed. Emphasis will be placed on developing meaningful visual displays of your study design and hypotheses.

- Presentations will occur during Weeks 13 & 14

Academic integrity and collaboration:
This is an independent assignment that must be your own original work.
Participation

Description:
Each week you are expected to be an active and engaged participant in the discussion of assigned readings.
  • Students will lead discussion on at least 2 papers during the semester – 15 points (2x)
  • Participation in weekly discussion when not leading – 5 points (12x)

Academic integrity and collaboration:
NA

Late assignments

*Late assignments will be issued a 5% percent penalty for every 24 hours late, including weekends* Communication/documentation of extenuating circumstances will remove this penalty. Please refer to Carmen for due dates.

Grading scale

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Letter Grade</th>
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<tbody>
<tr>
<td>93–100</td>
<td>A</td>
</tr>
<tr>
<td>90–92.9</td>
<td>A-</td>
</tr>
<tr>
<td>87–89.9</td>
<td>B+</td>
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<tr>
<td>83–86.9</td>
<td>B</td>
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<tr>
<td>80–82.9</td>
<td>B-</td>
</tr>
<tr>
<td>77–79.9</td>
<td>C+</td>
</tr>
<tr>
<td>73–76.9</td>
<td>C</td>
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<tr>
<td>70–72.9</td>
<td>C-</td>
</tr>
<tr>
<td>67–69.9</td>
<td>D+</td>
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<tr>
<td>60–66.9</td>
<td>D</td>
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<tr>
<td>Below 60</td>
<td>E</td>
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</table>

Instructor feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call 614-688-4357(HELP) at any time if you have a technical problem.)

  • **Grading and feedback:** For large weekly assignments, you can generally expect feedback within 7 days.
    Email: I will reply to emails within 24 hours on days when class is in session at the university.
OTHER COURSE POLICIES

Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. **Above all, please remember to be respectful and thoughtful.** A significant component of our interactions in this class will occur through Zoom videoconferencing (NOTE: meetings will **not** be recorded). Because this mode of discussion has benefits and challenges that differ from in-person class sessions, I want to share my expectations for how we will meet and communicate:

- Come to the session having completed the assigned readings and ready to have open, civil, and supportive discussions in video and chat spaces.
- Be present during the entire class session.
- I ask that you update your Zoom profile with your preferred name and add a picture with your face.
- As your internet connectivity permits, I ask that you keep your camera on at all times so that we can see each other and more meaningfully connect.
- Please feel encouraged to use a non-distracting virtual background.
- Mute your microphone when others are talking to minimize background noise in the meeting.

If you have any concerns about participating in class over Zoom in this way, please let me know. My goal is to create a safe environment where we can benefit from seeing each other and connecting, but I want to prioritize your safety and well-being.

- **Tone and civility**: Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.
Academic integrity policy

See Descriptions of major course assignments, above, for my specific guidelines about collaboration and academic integrity in the context of this online class.

Ohio State’s academic integrity policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university’s Code of Student Conduct (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university’s Code of Student Conduct and this syllabus may constitute “Academic Misconduct.”

The Ohio State University’s Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: “Any activity that tends to compromise the academic integrity of the university or subvert the educational process.” Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university’s Code of Student Conduct is never considered an excuse for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university’s Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- Committee on Academic Misconduct web page (go.osu.edu/coam)
- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)
Copyright for instructional materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Statement on Title IX

All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources.

If you or someone you know has been harassed or discriminated against based on your sex or gender, including sexual harassment, sexual assault, relationship violence, stalking, or sexual exploitation, you may find information about your rights and options at titleix.osu.edu or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu. Title IX is part of the Office of Institutional Equity (OIE) at Ohio State, which responds to all bias-motivated incidents of harassment and discrimination, such as race, religion, national origin and disability. For more information on OIE, visit equity.osu.edu or email equity@osu.edu.

Commitment to a diverse and inclusive learning environment

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

Your mental health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may
lead to diminished academic performance or reduce a student’s ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University’s Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, on-demand resources are available at [go.osu.edu/ccsondemand](http://go.osu.edu/ccsondemand). You can reach an on-call counselor when CCS is closed at 614-292-5766, and 24-hour emergency help is also available through the 24/7 National Prevention Hotline at 1-800-273-TALK or at [suicidepreventionlifeline.org](http://suicidepreventionlifeline.org). The Ohio State Wellness app is also a great resource available at [go.osu.edu/wellnessapp](http://go.osu.edu/wellnessapp).

**ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

**Requesting accommodations**

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; 098 Baker Hall, 113 W. 12th Avenue.

**Accessibility of course technology**

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- Canvas accessibility ([go.osu.edu(canvas-accessibility)](http://go.osu.edu(canvas-accessibility))
- Streaming audio and video
- CarmenZoom accessibility ([go.osu.edu(zoom-accessibility)](http://go.osu.edu(zoom-accessibility))
- Collaborative course tools
**COURSE SCHEDULE**

Refer to the Carmen course for up-to-date assignment due dates.

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics, Readings, Assignments, Deadlines</th>
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<tbody>
<tr>
<td>2</td>
<td>Sept 1</td>
<td>Philosophy of Science / Types of Study</td>
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<tr>
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<td>Romesburg, H.C. 1981. Wildlife science: Gaining reliable knowledge</td>
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<td>3</td>
<td>Sept 8</td>
<td>Experimental Design</td>
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<td>4</td>
<td>Sept 15</td>
<td>Pseudoreplication</td>
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<td>5</td>
<td>Sept 22</td>
<td>Survey Strategies</td>
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<td>6</td>
<td>Sept 29</td>
<td>Sampling Strategies / Impact Assessment</td>
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<td>7</td>
<td>Oct 6</td>
<td>Inventory &amp; Monitoring / Design Applications</td>
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<td>8</td>
<td>Oct 13</td>
<td>Hypothesis Testing &amp; Inference</td>
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<td>Blog Post: <a href="https://tinyurl.com/multicausality">https://tinyurl.com/multicausality</a></td>
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<tr>
<td>9</td>
<td>Oct 20</td>
<td>Model Selection &amp; Competing Hypotheses</td>
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<tr>
<td>Week</td>
<td>Dates</td>
<td>Topics, Readings, Assignments, Deadlines</td>
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<tr>
<td>13</td>
<td>Nov 17</td>
<td>Proposal Presentations</td>
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<td>14</td>
<td>Nov 24</td>
<td>Proposal Presentations</td>
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<tr>
<td>15</td>
<td>Dec 1</td>
<td>*** Final Proposals Due [submit to Carmen by midnight, 12/4/2020]</td>
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