

COURSE SYLLABUS

BIOL 830P: Special Topics in Biology Ecological Restoration

Department of Biology, University of Nebraska at Kearney

Term: Fall 2022

Course Credits: 1

Course Delivery: Online - Asynchronous

Instructor

Dr. Gregory J. Pec, UNK Department of Biology, pecg@unk.edu, office: 308.865.8410

Zoom office hours: By appointment.

Email should be used judiciously to address questions pertaining to course administration/scheduling or urgent matters. I respond to messages as quickly as I can, generally within 24-48 hours. Direct issues related to the course content should be posted to the Canvas forum described below.

Course Description

Topics are studied which are not assigned or covered in other courses in the department. For this special topics in biology course (i.e., ecological restoration), principles and practices of restoring ecosystem biodiversity, structure, and function following natural or anthropogenic disturbance will be covered. This course focuses on ecological theory and its application to ecological restoration. Topics include monitoring and adaptive management, soil and water quality, invasive species and revegetation, as well as ethics and societal aspects of ecological restoration. It is suggested that students have taken an introductory field biology or ecology course before taking this class. Per the [UNK Graduate Course Catalog](#).

Course Learning Objectives

Upon successful completion of this course students will be able to do the following.

- Define restoration ecology and explain the importance of this applied discipline in today's world
- Describe and give examples of how ecological theory is relevant to restoration ecology
- Illustrate how different types of disturbances impair ecological structure and function
- Determine when and why impairment of ecological structure and function necessitates ecological restoration
- Describe general approaches for restoration of species/populations, communities and ecosystems and illustrate these with specific examples
- Explain how you could set objectives for restoration activities
- Create and critically evaluate approaches to define restoration success
- Turn evidence into written arguments and discuss scientific findings critically with their peers

Important University Dates

- First day of the session: August 22, 2022
- University Breaks/Holidays: September 5, 2022, October 17-18, November 23-27
- Last day to withdraw: November 11, 2022
- Last day of the session: December 15, 2022
- See the [UNK Academic Calendar](#) for other important University dates

Required Texts and Materials

Holl, K. 2020. Primer of Ecological Restoration. Island Press.

Required Technology

- As an online course, access to an up-to-date computer and Canvas several times a week is required (checking in daily is encouraged).
- You may need to use software, such as Microsoft Word or PowerPoint or another equivalent.
 - [Microsoft365](#) software is available to UNK students for free download.
- Ability to use search engines (for example, [Google Scholar](#) or [the Calvin Library search engine](#)) to locate scholarly works is expected of graduate students. If you are not already comfortable with this, I encourage you to reach out to me or the [Natural Sciences Librarian](#) at Calvin Library for assistance.
- For issues with Canvas or other technologies associated with your university account, please contact the [University technology help desk](#).

Course Organization

Canvas

For this class we will use an online course management system called Canvas. Course information, updates, and related information, etc. will be posted here. I have also created a forum in Canvas for asking/answering questions about course information.

Participation

The more students are engaged in a course, the more they tend to get out of it. I encourage you to spend at least a little time each day with course material or activities though I recognize this is not always possible.

Communication

Please check course announcements in Canvas frequently. This the primary way I will communicate. Please feel free to reach out to me at any time via Canvas messages, email, or office phone. I will respond as quickly as possible, usually within 24-48 hours. Emails sent after 3 pm (CST) on Fridays will be answered by the following Monday. If sending an email or leaving a voicemail, please be sure to include BIOL 881 in the subject (email) or message (voicemail) so I can prioritize responding to it.

Course Structure and Assessment

All work is due by 11:59 PM Central Time on the date listed in Canvas and on the course schedule, unless otherwise indicated. This is a discussion-based graduate course. Few lectures will be given by the instructor – instead, my role will be to facilitate discussions and learning. All materials for each week will be posted on Canvas. This course consists of recorded presentations, reading assignments, and online discussion boards. All materials for each week will be posted on Canvas. This is not a self-paced course. You will be expected to keep up with the pace of the course, and the course structure is designed to help with this. If this is your first distance class, you will find that these classes can be fast paced. Understandably, everyone in this class has several commitments other than this class. Nonetheless, as a student who has registered for this class, it is your full responsibility to ensure that you can meet the requirements and commit the needed time for this course. If you start to fall behind, it may be difficult to catch up. Please do not hesitate to contact me.

Assignments:

Discussion participation: You are expected to compose at least **two posts** for each discussion (more are encouraged!): one in direct response to a discussion prompt on or before **Saturday** and a response to one other student on or before **Tuesday** of the assigned week. The grading rubric and information regarding expectations for discussion participation are available in Canvas. Participation in each discussion is worth 10 points. There will be 12 graded discussions.

I will follow discussions throughout each module. However, being cognizant that students will be posting at different times during the week and to avoid steering discussion too much, I will generally limit my contributions unless there are areas in need of immediate attention. Following each module, a summary of group discussions will be posted by the discussion leader (see below) to the corresponding Discussion Recap page for review by all students in the course.

Discussion leading: Each student will be assigned **one module topic to lead discussion** (40 points). Student leaders are also expected to participate in and will receive a separate participation grade for the discussion they are assigned to lead. See the Discussion Leading Assignment in Canvas for complete instructions, schedule, and grading rubric.

Discussion leaders are expected to complement the textbook information with peer-reviewed scientific studies (journal articles, book chapters, etc.) from any field of biology relevant to that week's topic for the group to critique. The leader(s) will pose two to three thought-provoking questions about the topic and how it relates to the week's topic for their group to discuss.

Materials are due to be posted to the discussion board by the discussion leader no later than 11:59PM Central Time on **Tuesday of the assigned module**. At the conclusion of the module, the leader will write a *brief* summary highlighting the main points discussed for each question and post it to the Discussion Recap page of the corresponding module by the 11:59PM on **the Tuesday of the next module**.

SER Webinar: Find a [SER webinar talk](#) on a topic of your choice and write a small summary on that topic. The summary should include relevant peer-reviewed articles and critical review of the talk. I am looking more for content rather than length (but they should be around 1 page in length).

Restoration project: For this assignment, students will choose a degraded local (or regional) habitat in need of restoration, visit the site (if possible), and then design a basic restoration plan.

Written report: Each student (or group) will write a report (should be as long as is needed - nothing more nor less) with the following components: (1) assessment of the problem, (2) statement of restoration goals/targets, (3) restoration plan describing what should be done, (4) a description of the monitoring plan. Grades will be assigned based on the completeness and detail of the project design, and ability to integrate principles discussed during the course for the restoration proposal. More details about expectations for the project will be provided in class.

Lightning talk: Each student (or group) will present their restoration proposal in a 3-5-min lightning talk. Assessment criteria for the assignment will be based on the clarity and professionalism of the presentation and the ability to convincingly justify the restoration proposal.

Basis for final grade

Discussion participation (11 @ 10pts each)	110
Discussion leading (1 @ 40pts)	40
SER webinar	20
Restoration project: Report	40
Restoration project: Lightning talk	20
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Total	230

Grades will be assigned using the Department of Biology standard grading scale: follows: A (93-100%), A- (90-92%), B+ (88-89%), B (83-87%), B- (80-82%), C+ (78-79%), C (73-77%), C- (70-72%), D+ (68-69%), D (63-67%), D- (60-62%), and F (below 60%).

Course Policies

I take my role as your instructor very seriously; I care about how well you do in this course and that you have a challenging and rewarding experience. It is my commitment to you to respond individually to the work you submit in this class and to return your work promptly.

Grading Policy

Scores for each assignment will be posted on the course Canvas page. If you think there was a grading error or do not understand the feedback you receive on graded work, please contact me as soon as possible. If you would like me to regrade your work, requests should be made within three days after the graded work has been returned to you. Regrade requests may result in a lower grade.

Late Work Policy

As a student enrolled in this course, one of your responsibilities is to submit course work on time. Course work will not be accepted late unless prior arrangements have been made due to *documented* professional or extenuating personal circumstances (e.g., family emergency, participation in university-sanctioned activities, religious observation, etc.). Please contact me as soon as possible to discuss alternative arrangements. Late submissions will be docked 10% per day up to 3 days late. If more than 3 days late, the submission will not be accepted and a grade of 0 (zero) will be recorded for that assignment. Please contact me as soon as possible.

Professionalism and Academic Integrity Policy

Students are expected to uphold [UNK Values](#) by being engaged in the course, conducting yourself with integrity, and treating others with respect and inclusivity. Critical questions and discussion to advance knowledge and understanding are strongly encouraged but must be done in a respectful way. Students who habitually disturb the class and have been warned may suffer a reduction in their final class grade.

Academic integrity is a term that encapsulates honesty, trust, fairness, respect, and responsibility among students and faculty. You are expected to follow the [University of Nebraska Student Code of Conduct](#). In particular,

“Students are expected to approach and complete their academic work with integrity. They are expected to do their own work, to be honest in the statements they make, to refrain from harming others, to refrain from improperly helping others, and to follow the rules. Students must read instructions and syllabi carefully so that they know what their instructors expect in terms of academic integrity.

Students who are unsure whether or not particular conduct is appropriate should ask their instructors or university administrators. Failing to act with integrity is a violation of the Code.” (Student Code of Conduct, Section IIA)

You may be asked to affirm the statement as true on submitted work: ***“By submitting this test or assignment, I unequivocally state that all work is entirely my own and does not violate UNK’s Academic Integrity policy.”***

Plagiarism: It is of utmost importance in this course to understand and avoid plagiarism. Writing discussion posts and a paper critique are a core feature of this course. TurnItIn may be used for assignments submitted in Canvas. For more information and tips, please visit the TurnItIn’s webpage [“Preventing Plagiarism when Writing”](#) or reach out to me for guidance. If you plagiarize in your submitted work you could fail the assignment or fail the course. Each instance of plagiarism, classroom cheating, and other types of academic dishonesty will be addressed in accordance with the [UNK Academic Integrity policy](#).

Students with Disabilities or Who are Pregnant

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 unkdso@unk.edu

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. For more information regarding pregnancy rights: <http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-faqs-college-and-graduate-students>

If you have an accommodation plan, please see the instructor as soon as possible, so any necessary arrangements can be made for your learning. **No accommodations can be**

provided until a Reasonable Accommodation Plan is in place. Please remember, plans are not retroactive and cannot be used for assignments prior to the date of the instructor's signature. To the greatest extent possible, University Representatives, shall observe confidentiality with respect to any request for accommodation.

Veteran 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

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

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>

Distribution of course materials: Audio or video recording, digital or otherwise, of lectures, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructors or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s). Any further use or dissemination of this material may be in violation of Federal copyright law and University sanctions including failure in the course.

Disclaimer: Any typographical errors in this Course Outline are subject to change and will be announced on the course Canvas page.

Tentative Fall 2022 Course Schedule

All work due by 11:59PM CT unless otherwise indicated. Required content not listed here may be provided in Canvas.

Week	Schedule/Topic	Due
1	Introductions	Aug 27, 30
2	Why restore ecosystems Defining restoration	Sept 3, 6
3	Project planning	Sept 10, 13
4	Monitoring and adaptive management	Sept 17, 20
5	Applying ecological knowledge to restoration	Sept 24, 27
6	Landform and hydrology SER webinar	Oct 1, 4 Oct. 4
7	Soil and water quality	Oct 8, 11
8	Fall Break	No Assignment
9	Invasive species	Oct 29, Nov 1
10	Revegetation	Nov 5, 8
11	Fauna	Nov 12, 15
12	Legislation	Nov 19, 22
13	Paying for restoration	Dec 3, 6
14	Thanksgiving Break	No Assignment
15	Restoration project report	Dec 8
16	Restoration project lightning talk	Dec 11

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