Advanced Limnology	**Department of Biology**
BIOL 830P, 3 credits	**College of Arts and Sciences**
Fall 2018	**University of Nebraska Kearney**

CLASS LOCATION AND MEETING TIME:
This course is delivered entirely in an online format; consequently, there will not be any on-campus meetings. Also, there are no formal online meeting requirements for this course though regular check-ins throughout the week are highly recommended. Deadlines for all assessments are provided in Canvas in several locations (e.g., on the assignment directions, in the announcements, etc.).

COURSE WEBSITE: canvas.unk.edu

INSTRUCTOR'S CONTACT INFORMATION:
Dr. Melissa R. Wuellner, Assistant Professor
Office: BHS 345
Office hours: Mondays: 10:00 – 11:00 am; Wednesdays: 9:00 – 10:30 AM; Thursdays: 1:00 – 3:00 PM
(***Note that these are the best times to get in contact with me during the week, but other times may be available to fit with your schedule.*)
Office phone: 865-8006
Email: wuellnermr@unk.edu or through Canvas

COURSE DESCRIPTION:
The study of the classification, structure, and function, of aquatic ecosystems. Online lectures will provide an introduction/review of the biological, physical, and chemical properties of inland waters. Weekly learning activities will more deeply explore ecosystem-level processes and concepts and how they relate to current environmental issues via readings, discussions, and/or at-home lab and field activities.

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

1) Describe the structure and function of limnetic systems.
2) Explain the dominating models that explain the structure and function of limnetic systems.
3) Describe how the limnetic environment influences and is influenced by human systems.

PREREQUISITES:
There are no formal prerequisites for this course but this course is only open to those who are enrolled at UNK as graduate students.

INSTRUCTIONAL METHOD:
This course is presented entirely online; therefore, good time management and self-study skills are critical to your success! 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 the assigned materials (including the short lecture videos) each week. Most weeks include at least one discussion. Weekly course updates and reminders will be provided via the "Announcements" feature in Canvas. Communication with the instructor can be by phone, e-mail, or in person. You are encouraged to use all three as frequently as needed.

You will be tested on your ability to critically evaluate, reflect on, integrate, and apply course information through written assignments and open-book "exams." You are welcomed to work with or share thoughts about your assignments and exams with your classmates, but you will be required to write and submit your own original material.

COURSE REQUIREMENTS:
Students are required to complete all textbook or other assigned readings, view all presentations, and contribute to all discussions as scheduled. Assignments and exams 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's just a "quick check" of the discussions or announcements.

MISSED ASSIGNMENTS/QUIZZES/EXAMS AND MAKE-UP POLICY:
Any and all discussion, assignments, and exams in this class MUST be submitted by the designated deadline (see course calendar below) unless you and I have discussed otherwise. If you do not have an approved absence, you will receive a zero on that assignment. Please note that computer emergencies (e.g., hard drive crashed, etc.) are NOT considered an excuse. You should always have an alternative means of accessing or submitting electronic information and course work. If you have an emergency (e.g., illness, death in the family, etc.), please contact me no later than *36 hours* after the missed deadline to make new arrangements.

REQUIRED MATERIALS:
All required readings will be provided on Canvas. There is no single textbook to purchase as I will be drawing from many textbooks, journal articles, and popular readings to illustrate the concepts of this course. If you are interested in purchasing any of the textbooks referenced in class for the future, please let me know and I can provide more information.

For research resources, please be sure to use your local library as well as online search engines (e.g., Google Scholar) as you will likely 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**
First Unit Exam	75
Second Unit Exam	75
Final Exam	75
Discussions (leading and participating)	280
At-home Labs	100
Other Assignments	80
TOTAL	**685**

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**	66 – 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, the Canvas calendar, and the "Announcements" page for due dates for discussions, assignments, and exams. *Please note that this schedule is subject to revision as necessary. Changes to the schedule will be communicated in a timely fashion.*

Week	Dates	Unit(s)	Readings	Discussions	Assignments
1	8/20 – 8/26	Welcome!	None	Post personal introduction	Survey: What do you know about limnology? Sign up for discussion leading
2	8/27 – 9/2	Introduction to Limnology	The Lake as a Microcosm (Forbes 1925)	What can we learn from lakes and streams: past, present, and future?	At-Home-Lab: Your Lake/Stream Observation, Part I
3	9/3 – 9/9	Physical and Chemical Properties: Water	Properties of Water (Dodds 2002)	Student-led Discussion #1	At-Home-Lab: Demonstrating the Properties of Water
4	9/10 – 9/16	Physical and Chemical Properties: Nutrient Cycling	Nutrient Cycling by Animals in Freshwater (Vanni 2002)	Student-led Discussion #2	None
5	9/17 – 9/23	Physical and Chemical Properties: Lake Stratification (Temperature and Oxygen)	Chapters 10, 11 & 12 (Cole 1994)	Student-led Discussion #3	Scenario Analysis #1: Putting Together What You've Learned So Far
6	9/24 – 9/30	Physical and Chemical Properties: Measuring Water Quality	Interpreting Chemical Data (Bain 1999)	What should I measure?	At-Home-Lab: Your Lake/Stream Observation, Part II

7	10/1 – 10/7	Physical and Chemical Properties: Identifying and Measuring Habitat	Chapters 2, 8 – 13, & 16 (Bain and Stevenson 1999)	Student-led Discussion #4	At-Home-Lab: Your Lake/Stream Observation, Part III
8	**10/8 – 10/14**	**First Exam *(75 points)*: Due by 11:59 pm on Sunday, October 7.**			
9	10/15 – 10/21	Limnological and Biological Relationships: Defining Communities	Chapter 4 (Cole 1994)	Create a Lesson: Community Teaching about Communities	None
10	10/22 – 10/28	Limnological and Biological Relationships: Energy Flow	Chapter 5 (Cole 1994)	Student-led Discussion #5	At-Home-Lab: Your Lake/Stream Observation, Part IV
11	10/29 – 11/4	Limnological and Biological Relationships: Lakes	Schupp (1992) Tomcko and Pierce (2001)	Student-led Discussion #6	How would you classify lakes in your state?
12	11/5 – 11/11	Limnological and Biological Relationships: Rivers and Streams	River Continuum Concept (Vannote at al. 1980) River Continuum Critique (Statzner and Higner 1985) Riverine Productivity Model (Thorpe and Delong 1994) Flood Pulse Concept (Junk et al. 1989)	Propose a new riverine model!	None
13	**11/12 – 11/18**	**Second Exam *(75 points)*: Due by 11:59 pm on Sunday, November 18**			

14	11/19 – 11/25	Human Influences: Eutrophication	Basic Concepts of Eutrophication (Sawyer 1966) Limnological Changes Associated with Reservoir Aging (Kimmel and Groeger 1986)	None	At-Home-Lab: Your Lake/Stream Observation, Part V
15	11/26 – 12/2	Human Influences: Alternative Stable States	Alternative Stable States (Scheffer 1989)	Student-led Discussion #7	None
16	12/3 – 12/9	Human Influences: Policies	Clean Water Act Summary (Copeland 2016)	Student-led Discussion #8	Scenario Analysis #2: Putting Together What You've Learned So Far
17	***FINAL EXAM (75 points):* Due by 11:59 pm on Friday, December 14.**				

PLAIGARISM:
Plagiarism is defined as using more than four consecutive words form 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. We expect you to use references for assignments given in this course and we expect you to cite your sources. 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.

STUDENTS WITH DISABILITIES OR THOSE WHO ARE PREGNANT:
Students with disabilities or those who are pregnant are encouraged to contact me for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities or those who are pregnant. To receive accommodation services for a disability, students must be registered with UNK Disabilities Services Coordinator, David Brandt, in the Academic Success Office, 163 Memorial Student Affairs Building, 308-865-8214 or by email unkdso@unk.edu. For those needing accommodation due to pregnancy, you need to visit with Student Health. 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.

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):l 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 308-865-8520 or unkveterans@unk.edu.