

**Course Syllabus:**  
**Biology of Size BIOL 836, 3 credits**  
**Summer 2021**

**Instructor:**

Dr. Letitia Reichart  
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**Note:** Email is my preferred method of contact if you inquire about a personal issue. General questions about the course can be posted on the Frequently Asked Questions Discussion Board in Canvas.

**Office Hours:** Email to arrange a time for zoom call or phone call

**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. For BIOL 836: During Phase III, students are **required** to wear masks that cover the nose and mouth at all times during class. This will continue until Dr. Reichart deems it safe to not wear masks.

Questions regarding COVID-19 should be directed to the Public Health Center [unkhealth@unk.edu](mailto: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](mailto:bicakc@unk.edu). Questions regarding department specific requirements should be directed to the chair of the Biology department - Dr. Julie Shaffer, BHS 335, 308-865-8661, [shafferjj@unk.edu](mailto:shafferjj@unk.edu)

**The above directions must be followed by everyone for the health and safety of our University. Students who do not comply may face disciplinary action from the university.** Violations of any University or Campus Policy is a violation of the Student Code of Conduct.

**Course Description:** This course examines the importance of size for biological organisms from bacteria to blue whales, microcosms to large-scale communities. Often in biology we fail to consider the importance of physical laws, which determine rates of diffusion and heat transfer, transfer of force and momentum, the strength of structures, the dynamics of locomotion and more. This class attempts to rectify this oversight with readings and lectures examining the impacts of being a given size. Assigned readings from the scientific literature, exams, inquiry based activities/assignments, and online discussions will be used to explore these topics. Plan to spend several hours each week on reading, writing, responding to topic discussions, and participating in activities.

**Course Objectives:**

- 1). Gain familiarity with allometry, the study of biological scaling relationships, and basic allometric relationships
- 2). Examine and discuss recent research for current topics in scaling and allometric relationships across biological organisms.
- 3). Learn techniques used to study a variety of different allometric relationships and identify potential research questions from discussions of current literature

**Instructor Role:** As your instructor I will provide feedback to students in two ways. First, students will receive individual feedback for specific assignments (see assignment list below). Second, I will read and may comment on student journal class discussions, and provide clarification or summary information for student questions. Any general comments or observations that would be helpful to the class as a whole will be made available to all students via announcement. I will respond to every email sent from student UNKlopermail accounts, you can expect a response to your emails within 24 hours of sending, Monday-Friday. However emails sent on the weekends (or late on Friday) will not be seen until Monday morning.

**Required Equipment/Hardware/Software:**

1. Webcam (e.g., built-in to your personal computer or as an external plugin)
2. Students should refer to the following eCampus website to make sure you meet the minimum hardware/software and internet connection speed required by all UNK eCampus students.  
eCampus requirements: [https://canvas.unk.edu/courses/25822/pages/minimum-computer-requirements?module\\_item\\_id=525687](https://canvas.unk.edu/courses/25822/pages/minimum-computer-requirements?module_item_id=525687)

**NOTE:** Microsoft Office Word is the only acceptable word processing software for this course (All other file formats are unacceptable for submitting online documents). This software is available for download with your Office365 account. Please go to the following link to learn more about getting setup with appropriate software.

[http://www.unk.edu/offices/its/instructional\\_technology/office365\\_unk\\_email/index.php](http://www.unk.edu/offices/its/instructional_technology/office365_unk_email/index.php)

**Academic Integrity:** UNK's Policy is the maintenance of academic honesty and integrity is a vital concern of the University community. Any student found in violation of the standards of academic honesty shall be subject to both academic and disciplinary sanctions. Academic dishonesty includes, but is not limited to, the following: Cheating, Fabrication and Falsification, Plagiarism, and Other Acts of Academic Dishonesty. You are expected to uphold the UNK standard of Student Conduct relating to Academic Integrity. You assume full responsibility for the content and integrity of the work you submit. Academic integrity will be strongly enforced in this course and plagiarism will not be tolerated. All assignments will be scanned through TurnitIn via Canvas. **Students who plagiarize any part of their writing assignments will fail this course.**

**Class Participation:** Regular participation each week is important for successful completion of this course. The student is expected to complete coursework by the assignment deadlines. Reasons for not completing assigned work on time may include:

illness, hospitalization, injury, family emergency, or other situations that cannot be avoided; however, documentation for incomplete work must be provided to the instructor. Negotiations may be made at time of occurrence, if the reason for missing an assignment deadline is acceptable in the opinion of the instructor. **Students must contact the instructor prior to missing a scheduled coursework!**

**Grading:** Grades are based on performance on lecture exams, assignments, and group discussion. Final grades will be calculated from the average of all assignments.

| Course Evaluation                              | Points     |
|--|------------|
| Personal Introduction                          | 20         |
| Lecture Exams (2 Exams, 100pts each)           | 200        |
| Group Activity Assignments (50pts per assign.) | 100        |
| Class Discussions (4, 20pts each)              | 80         |
| <b>Total Points Possible</b>                   | <b>400</b> |

**Grading Scale:**

|                |                |                 |
|----------------|----------------|-----------------|
| 93 - 100 % = A | 78 - 79 % = C+ | 60 - 62 % = D-  |
| 90 - 92 % = A- | 73 - 77 % = C  | 59% or less = F |
| 88 - 89 % = B+ | 70 - 72 % = C- |                 |
| 83 - 87 % = B  | 68 - 69 % = D+ |                 |
| 80 - 82 % = B- | 63 - 67 % = D  |                 |

**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](mailto:unkdso@unk.edu)

**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>

### **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 Ferenc 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>

### **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.

If you have questions regarding the information in this email please contact **Mary Chinnock Petroski, Chief Compliance Officer** ([petroskimj@unk.edu](mailto:petroskimj@unk.edu) or phone 8400).

**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](mailto:unkveterans@unk.edu).

**Class Schedule & Assignments:** A general class schedule can be found below. There will be recorded video lecture(s) each week, for general lecture topics, posted Tuesday by 5pm CST. In addition, readings from the primary literature will be assigned in some weeks. Exams will be essay and will cover topics discussed during the course. Assignments include written assignments, data analysis, and/or simulation activities. **Due Dates for each assignment will be provided when the assignment is announced.** Due dates must be followed and assignments

are due by **midnight CST** on the date given, specific dates will be specified when the assignment is posted. For assignments turned in late a penalty of 5 points per day will be deducted until the assignment is no longer worth any points.

**Note:** The instructor reserves the right to modify the class schedule and assignments if necessary; however, students will be informed of minor modifications via Canvas announcements.

**Expectations:** Students are expected to keep up with assigned course material and are responsible for checking announcements and assignments for each week. All grades will be based on participation and the quality of the assignment or discussion. There will be **two group activities** and **four group discussions throughout the course**. During the first week of class, you will be assigned to a discussion group of 3-4 students, based on shared availability indicated on a *When is Good* Survey (link available on the course Canvas page). During weeks in which groups are assigned to discuss a paper, you will be required to schedule one hour with your group to discuss and record a group discussion over assigned reading from the primary literature. Each student must prepare for the discussion by carefully reading the paper prior to the group discussion and prepare some questions for discussion by the group. Once your group identifies the meeting time and zoom link when you will meet, you will share the meeting with the instructor. If I am also available at the same time, I will join your group discussion that week.

Finally, during discussions I expect students to use appropriate language (e.g., profanity and derogatory comments are unacceptable), to respect differences in opinion, and to show evidence of knowledge on the subject matter (i.e., gleaned from assigned reading and/or lectures)

**NOTE:** Topics and Assignments are subject to change at the instructor's discretion. Exam dates will NOT change. Class readings and readings from the primary literature will be made available on the Course Webpage.

**Biol 836P - Biology of Size Summer 2021**

| <b>Week</b> | <b>Date</b>      | <b>Assignments</b>  | <b>Group Disc. Board</b> | <b>Lecture Topics</b>   | <b><u>Readings</u><br/>Primary Lit.</b> |
|-------------|------------------|---|--------------------------|---|---|
| 1           | May 24 - 30      | Personal Introduction, Group Assignment Survey - Whenisgood |                          | Scaling in Biology; Allometry & Natural Selection                           |   |
| 2           | May 31- June 6   | Group Activity 1 - Due June 15 <sup>th</sup> midnight CST   | 1                        | Problems in Scaling; Scaling in Terrestrial Organisms                       | Taugbol et al 2020                      |
| 3           | June 7- 13       |   | 2                        | Size Change during Ontogeny & Evolution; Universal Scaling Laws in Biology  | Moreno-Rueda et al. 2020                |
| 4           | June 14 - 20     | <b>Exam 1, DUE June. 18<sup>th</sup>, midnight CST</b>      |                          |   |   |
| 5           | June 21 - 27     | Group Activity 2 - Due July 6 <sup>th</sup> , midnight CST  | 3                        | Scaling in Cardiovascular Biology; Allometric Scaling in Vascular Plants    | Staples and Mikel-Stites 2018           |
| 6           | June 28 - July 4 |   |                          | Cell Size and Shape; The Strength of Bones & Skeletons                      |   |
| 7           | July 5 - 11      | <b>Exam 2, DUE July 13<sup>th</sup>, midnight CST</b>       | 4                        | Metabolic Rate and Body Size; Movement - running, jumping, swimming, flying | Cloyed et al 2021                       |
| 8           | July 12 - 16     | <b>Exam 2, DUE July 13<sup>th</sup></b>                     |                          |   |   |