

Functional Morphology BIOL 866-01, Spring 2021

Instructor

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Course Description

A study of the structure, form, function, and morphological adaptations in plants and animals (organisms) as examined through anatomical, mechanical, ecological, and evolutionary perspectives. While some background information will be presented as lectures, **this course will primarily utilize published papers** with a core emphasis placed on **self-study** as a mechanism of learning.

Learning Objectives

1. Students will become familiar with the morphology (structure) of representative examples that include single-celled organisms, fungi, plants and animals.
2. The function of specific structures will be evaluated at the level of morphology (how anatomy relates to function).
3. Students will become familiar with primary literature relating to functional morphology and develop the skills to extract basic information from this type of publication.
4. Comparison of morphology between different organisms will be emphasized when appropriate.

Course Materials

Required Textbook: No textbook required. Instructor will provide reading materials. Students will obtain additional information from publicly accessible sources, library, Internet, etc. as needed. Access to a good general biology textbook may be useful.

Computer and Software: Access to a computer, modern browser and Internet connection are required for the course. A word processor compatible with the instructor's software is needed for preparation of written assignments.

Web Resources: Canvas, an online course management system, is used for this course. Students will be responsible for becoming proficient at using the system. Instructions can be found online by searching the eCampus section of the University of Nebraska at Kearney web site. Students will be expected to check the Canvas site often for announcements and assignments. In addition, students are required to use and check the email account assigned to them by the university (Lopermail).

Legal: The materials on this course website are only for the use of students enrolled in this course for purposes associated with this course and may not be retained or further disseminated. The materials on this course website may be protected by copyright, and any further use of this material may be in violation of federal copyright law.

Grading

Quizzes: Numerous online quizzes are assigned throughout the semester and must be completed by the due date. Each quiz is multiple choice, fill in the blank, matching, short answer, etc. Quizzes may include questions about ANY material covered, and a time limit will be issued for each quiz, so studying before taking the quiz is advised.

Mini-assignments: Students will complete numerous mini-assignments. The topic and format will be assigned by the instructor. Typically each assignment will correspond to a reading.

Exams: Two time-limited online exams will be given. *All exams are comprehensive.*

Final Exam: Students will be provided access to the final exam approximately one week before the due date. Late exams will not be accepted.

Tentative Point Distribution: The value of each assignment will be as follows:

Assignment	Points Each	Total Points
Quizzes	12 @ 10pts	120 pts
Mini-assignments	18 @ 25 pts	450 pts
Exams	2 @ 100 pts	200 pts
Final	1 @ 230 pts	<u>230 pts</u>
	total	1000 pts

The final grade will be determined base on the number of earned points (not percentages). In the event that assignments are changed, the scores will be normalized to 1000 pts (points earned / total possible x 1000). Grades will be assigned as follows:

A+ (1000-990), A (989-960), A- (959-930), B+ (929-900), B (899-870), B- (869-840), C+ (839-810), C (809-780), C- (779-750), D+ (749-720), D (719-690), D- (689-660), F (Below 659)

Course Information and Policies

Expectations: Individual achievement and self-study are a major theme in this course. Students will be encouraged to identify their own solutions and develop their own well supported opinions relating to the subjects presented. You are free to contact the instructor by email as often as necessary, but please, do not be surprised when you are redirected to possible sources of additional information.

Due Dates: ***Due dates will be enforced.*** There will be no opportunity to make up missed quizzes or online exams, and a score of zero will be assessed. Late writing assignments will result in a loss of 10% of the maximum points per day. The final exam must be returned by the due date or a grade of zero will be given.

Note on Technology: While not common, problems with technology do happen. This can be caused by instructor error, server crashes, weather-related power outages or problems with Internet connections. Verified problems with course technology will be dealt with fairly. If you find that the Canvas service is not responding or behaving improperly, notify the instructor immediately. If the problem is reasonably beyond the student's control, an opportunity to reclaim missed points will be provided. *Normally, assessments will only be reset once per student per semester.*

Other Policies of Interest

Plagiarism: Presenting someone else's work as your own is a serious academic offense. Any assignments containing inappropriate use of someone else's work will receive a grade of zero. Because presenting another's work as your own is intellectual theft, a second incidence will result in assignment of a failing grade for the course. In addition, students risk the possibility of administrative action by the department, college or university.

Withdraw and Incomplete Grades: Students should consult the academic calendar for the last day to withdraw from a course which will result in a grade of "W". Instructors are not permitted to withdraw a student; therefore, any student not continuing the class that fails to withdraw will receive a

grade of "F". If circumstances prevent completion of a course (such as major hospitalization, overseas deployment, etc.), students may request a grade of incomplete which may be permitted at the *sole discretion of the instructor*. An "I" will only be considered for students passing at the time of the request, and the student will be issued an addendum to the syllabus specifying conditions for resolving the incomplete (maximum of one year permitted).

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 unkdsso@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 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>

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 or phone 8400).

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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.

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 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.

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Tentative Schedule

Potential topics for lessons, notes and reading assignments are listed. Date and sequence are tentative, and subject to change by the instructor. *Expect additional reading materials or lecture videos to be posted as the semester develops.*

Week/Date	Topic/Activities	Reading
1 January 25	Introduction	
2 February 1	Single Cell Organisms 01, flagella bacteria 02, flagella eukaryote Quiz 1	Cohen-Bazire, 1967 Bui, 2010
3 February 8	Fungi 03, ascospores 04, perithecium Quiz 2	Read, 1996 Lord, 2010
4 February 15	Exam 1	
5 February 22	Plants 05, roots 06, roots Quiz 3	Ennos, 1992 Lynch, 1995
6 March 1	07, seeds 08, seeds Quiz 4	Pujol, 2005 Kitajima, 2002
7 March 8	09, plant types 10, leaves Quiz 5	Dormann, 2002 Neinhuis, 1997
8 March 15	Animals 11, eating Quiz 6	Jackson, 2004
9 March 22	12, mandibular raking 13, eating frog eyes Quiz 7	Kley, 1999 Levine, 2004
10 March 29	Exam 2	
11 April 5	14, vision Quiz 8	Coates, 2003
12 April 12	15, vision Quiz 9	Douglas, 1998 Wagner, 1998

Week/Date	Topic/Activities	Reading
13 April 19	16, aspiration (breathing) Quiz 10	Brainerd, 2006
14 April 26	17, inflation Quiz 11	Brainerd, 1994
14a April 26	18, instructor's choice Quiz 12	TBA
15 May 3	Final Exam Finals Week (5/3-5/6)	
Last Day of Course May 6	Note this is on a Thursday afternoon. Course closes and becomes unavailable a few days later.	