BIOL213: Structure and Function Across the Tree of Life
(a.k.a., Principles of Biological Structure and Function)

Course Syllabus, Spring 2020

Lead Instructors:	Dr. David Tank	Dr. Christine Parent
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Office Hours:	M 3:00-4:00pm or by appointment	M 1:00-2:00pm

Lectures: MWF, 11:30 –12:20; LSS 277

Labs: All Labs will be in LSS 361

Sec 01: TUE 9:30am –12:20pm
Graduate TA: Malia Santos (msantos@uidaho.edu)
Peer TA: Rachel Arnzen (arnz3515@vandals.uidaho.edu)

Sec 02: TUE 1:30pm – 4:20pm
Graduate TA: Sam McCauley (mcca6713@vandals.uidaho.edu)
Peer TA: Maria Martinez (mart2066@vandals.uidaho.edu)

Sec 03: WED 1:30pm – 4:20pm
Graduate TA: Sam McCauley (mcca6713@vandals.uidaho.edu)
Peer TA: Aaron McNee (aaro1667@vandals.uidaho.edu)

Sec 05: THU 1:30pm – 4:20pm
Graduate TA: Harpo Faust (faus3225@vandals.uidaho.edu)
Peer TA: Case Zuiderveld (zuid5273@vandals.uidaho.edu)

Course Materials. Textbook (required) – Freeman et al., Biological Science, 7th edition (5th and 6th editions have very similar content and could also be used.
Note: There are copies of Freeman on reserve in the library under Biology 114/115/213.
Laboratory Exercises – will be posted on blackboard course site.

Course Description. BIOL114 surveyed the appearance of different organisms, their diversity, ecology, and evolution. In BIOL115, the fundamental concepts of life were studied at the cellular level. In BIOL213 we are going to build on your knowledge from these courses and examine some of the morphological and physiological similarities and differences that exist across the tree of life in a comparative framework. You may (or may not) have previously considered that organisms often faced similar challenges as they were presented with different environments during different geological time periods. To survive, these organisms evolved morphological and physiological adaptations that allowed them to overcome these challenges. We will discuss similarities and also the diversity among the many adaptations found in different organisms.

Learning Outcomes. The objectives of this course are to learn how plants and animals have evolved morphological structures and physiological processes to adapt to the common challenges faced by all organisms.

Course Material. Class Notes, labs, and other course information can be found on the class site on blackboard: https://bblearn.uidaho.edu/. You will be prompted to enter your username (vand1234) and password to access course materials.

We will be using iClicker Reef app (works on smartphone, tablet, or laptop: www.app.reef-education.com) for in class 'clicker' questions throughout the semester.

Lecture slides and/or notes will be posted on blackboard as study aids following lectures.

Grading. Letter grades will follow the University of Idaho grade scale:

A	90 – 100%
B	80 – 89.9%
C	70 – 79.9%
D	60 – 69.9%
F	0 – 59.9%

And, will be based on:

4 lecture exams (100 pts each)	400
Comprehensive final exam	150
Labs	200
Lab practicums	100
Paired Structure/Function Blog Post	50
In class ('clicker') questions	variable (10% of grade)
TOTAL	900+

Absence from exams and lab sessions will only be excused with a written letter *in advance* documenting reasons of illness, family emergency, or conflict with an official University function (athletics, FFA, college ambassadors, course field trips, etc.). Missed lab sessions may be rescheduled at the discretion of the instructors, however, for excused absences, it is always best to arrange with your TA to attend a different lab section that week, if possible.

Final Exam Policy. Students with University excused absences during the final exam period must notify us *in advance*. Failure to notify instructors in writing (email) at least ONE WEEK *in advance* will result in you NOT being allowed to make-up the final exam. Not showing up for the final exam means you get a zero. Please note that it is departmental policy for NO EARLY FINAL EXAMS. Please make your travel arrangements accordingly.

Grading Concerns. Exam keys will be posted online. If you think your exams or labs were incorrectly graded, you must submit your concern to us in writing justifying your request for re-grading within 3 days of receiving your graded assignment.

Lecture Exams will consist of a combination of fill in the blank, short-answer, matching, multiple-choice, and short essay questions. Lecture exams will be scheduled during the normal lecture period.

Paired Blog Posts. Students will work in pairs to produce a blog post related the theme of Form and Function. Details and a grading will be presented in lab.

Laboratory Exercises and investigations will supplement lecture material, and be available for download from the class site on blackboard (https://bblearn.uidaho.edu/) prior to lab. Further details will be presented in lab.

Readings are assigned in the course schedule by chapter in Freeman, or as noted in supplementary readings.

Academic Dishonesty. Acts of cheating or plagiarism will not be tolerated. Your exams and writing assignments must be your own work. According to university policy cheating or plagiarism can result in you failing this class. This includes giving your work to others to copy.

Cheating refers to the acquisition of answers to test questions in a dishonest fashion.

Plagiarism is defined as i) the representation of another person's work as your own, in its entirety or with slight changing of wording, ii) the use of writing from published sources without citing the author(s) or, iii) downloading material from the internet and presenting it as your own work.

The UI Faculty-Staff Handbook (http://www.webpages.uidaho.edu/fsh/2300.html) further outlines the expected code of conduct for students at the University of Idaho; Article II addresses academic honesty of students.

Withdrawal from Course. Students withdrawing from the course need to have their drop form dated no later than Wednesday, January 29, 2020 for a full refund of laboratory fees. Last day to withdraw from the course is Friday, April 3, 2020.

Center for Disability Access and Resources (CDAR). Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through CDAR located in the Idaho Commons Building, Room 127, to notify your instructor(s) as soon as possible regarding accommodation(s) needed for the course. Phone: 208-885-6307 Email: cdar@uidaho.edu Website: www.uidaho.edu/cdar Please notify the instructor during the first week of classes if accommodations are required.

Tutoring and College Success (TCS) offers three distinct services dedicated to student success: tutoring, SI–PASS, and Academic Coaching. Vandal Tutoring provides drop-in style tutoring in person at the Library or online through www.uidaho.edu/tutoringonline at no cost to undergraduates. SI-PASS provides peer assisted study sessions for difficult courses. You can find the schedule of currently supported courses at www.uidaho.edu/si. Academic Coaching offers students an opportunity to work with a coach, one on one, to improve their academic skills such as: effective studying, test taking, time management, and note taking. Visit www.uidaho.edu/academic-coaching to schedule an appointment.

LECTURE SCHEDULE SPRING 2020

Lecture topics and assigned readings could be changed.

Date	Topic	Textbook Reading		Lab	Supplementary Reading
		Freeman 7th Ed	Freeman 5th Ed		
W Jan 15	Intro, Tree thinking			No lab	Chapters 1-3 in Tree Thinking (Baum & Smith, 2012); Gregory, T. R. 2008. Understanding Evolutionary Trees)
F Jan 17	Tree thinking				
M Jan 20	MLK day – no class			Animal diversity and tree thinking	
W Jan 22	Animal Diversity & Evolution	Fr. 30, 31, 32 (review from BIOL114), 47.4	Fr. 23		
F Jan 24	Animal Diversity & Evolution				
M Jan 27	Animal Development			Animal development	
W Jan 29	Animal Development				
F Feb 31	Animal Development				
M Feb 3	Animal Nutrition	FR. 41	Fr. 44	Animal nutrition	
W Feb 5	Animal Nutrition				
F Feb 7	Gas Exchange & Circulation	Fr. 42	Fr. 45		
M Feb 10	Gas Exchange & Circulation			Animal circulation	
W Feb 12	Catch up & review				
F Feb 14	**Exam I**				
M Feb 17	President's day – no class			Behavior, movement, and communication	
W Feb 19	Animal Neurons	Fr. 43	Fr. 46		
F Feb 21	Animal Nervous Systems				
M Feb 24	Animal Sensory Systems	Fr. 44	Fr. 47	Lab TBD	
W Feb 26	Animal Sensory Systems				
F Feb 28	Animal Movement	Fr. 45	Fr. 48		
M Mar 2	Animal Movement			Lab practicum	
W Mar 4	Animal Behavior	Fr. 50	Fr. 53		
F Mar 6	Animal Behavior				
M Mar 9	Topic TBD			No Lab	
W Mar 11	Catch up & review				
F Mar 13	**Exam II**				
M Mar 16	Spring break			No lab	
W Mar 18	Spring break				
F Mar 20	Spring break				

Dr. Tank takes over					
M Mar 23	Plant Diversity & Evolution	Fr. 28		No lab	Donoghue, M. J. 2002. Plants. Pp. 911-918 in Encyclopedia of Evolution, Vol. 2
W Mar 25	Plant Diversity & Evolution				
F Mar 27	Plant Diversity & Evolution				
M Mar 30	Plant Form & Function	Fr. 34		Land plant diversity & evolution	
W Apr 1	Plant Form & Function				
F Apr 3	Plant Form & Function				
M Apr 6	Water & Sugar Transport	Fr. 35		Plant tissues	
W Apr 8	Catch up & review				
F Apr 10	Exam III				
M Apr 13	Water & Sugar Transport			Plant stomata	
W Apr 15	Water & Sugar Transport				
F Apr 17	Water & Sugar Transport				
M Apr 20	Plant Nutrition	Fr. 36		Plant responses	
W Apr 22	Plant Nutrition				
F Apr 24	Plant Nutrition				
M Apr 27	Plant Nutrition			Angiosperm reproduction	
W Apr 29	Catch up & review				
F May 1	Exam IV				
M May 4	Angiosperm Reproduction	Fr. 38		Lab practicum	
W May 6	Angiosperm Reproduction				
F May 8	Review for the final				

Final exam will be Thursday, May 14 from 10:15am-12:15pm. Location LSS 277.

All “Fr.” readings refer to chapters from “Biological Science”, Freeman.