POINT 1902 LOMA
NAZARENE UNIVERSITY

Bio 2012 Organismal Biology — Spring 2021

Dr. Dianne Anderson

You alone are the LORD. You made the heavens, even the highest heavens, and all their starry host, the earth and all that is on it, the seas and all that is in them.
You give life to everything, and the multitudes of heaven worship you. Nehemiah 9:6

PLNU Mission: To Teach ~ To Shape ~ To Send
Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Course description
Principles of animal and plant structure, function, and diversity. Lecture and lab must be taken at the same time. Offered every year. (3 units)

Where does this course fit in? It's one of three required courses (Bio 2010, 2011, and 2012) that form the lower division biology sequence for the Biology, Biology-Chemistry, and Environmental Science majors, and is required for the Organismal Biology minor. It also serves as preparation for upper-division organismal biology courses such as Applied Plant Biology and Advanced Human Physiology.

Course learning outcomes:
1. Students will explain the structure and function of multicellular organisms in terms of the adaptation of common body plans to diverse environmental challenges.
2. Students will analyze the common and divergent ways that animals, plants, protists, and fungi solve the physiological problems of maintaining homeostasis, detecting/responding to stimuli, obtaining energy/ nutrients, transporting materials, removing wastes, growing/developing, and reproducing.
3. Students will relate the properties of macromolecules, and the cells containing them, to the function of tissues, organs, and organ systems.
4. Use an understanding of how animals, plants, fungi and protists function to inspire sustainable solutions to societal problems including climate change, medical care, clean food/water and energy.

Class meeting places and times

Lecture: MWF 12:15-1:10 PM		Latter Hall 1 if in person or via zoom
Labs:	Section 1 - Mon. 2:45-5:45 PM	Rohr Science 40
	Section 2 - Tues. 8:00-11:00 AM	Rohr Science 40
	Section 3 - Tues. 1:30-4:30 PM	Rohr Science 40

Instructors and instructor availability
Dianne L. Anderson, Ph.D. Lecture and Quad I labs)
Rohr Science 146 dianneanderson@pointloma.edu (619) 849-2705
Zoom office hours (https://pointloma.zoom.us/j/95248189087): M,T, W & F (not Tues.) 10:30-11:30AM or by appt

Jennifer Niethammer (Quad II labs) jnietham@pointloma.edu
Office and Office Hours: 30 minutes before (Mon lab and Tuesday PM lab) or after class (Tuesday AM lab) in the lab room.

Required materials

1. Brooker, Widmaier, Graham & Stiling. (2021 edition) ***Principles of Biology***, 3rd edition. McGraw-Hill. ISBN 9781260708325 NOTE: If you already have the 2017 version (2nd edition), that will also work!
2. Chamovitz, Daniel (2017 edition). ***What a Plant Knows: A Field Guide to the Senses.*** Scientific American: New York, New York. (Referred to as "WAPK" in the schedule)
3. Catania, Kenneth. (2020). ***Great Adaptations: Star-Nosed Moles, Electric Eels, and Other Tales of Evolution's Mysteries Solved.*** Princeton University Press
4. **iClicker –** Available in the bookstore if you don't already have one. (needed for F2F lectures sessions)

Clicker registration
The iClicker remote is available to buy or rent at the bookstore or online. You need to register your clicker online by going to this web address: https://www.iclicker.com/remote-registration-form-for-classic

How we've organized this course and how you can succeed…
Lecture class is designed to introduce you to essential concepts illustrated by specific examples, and to equip you to apply your understanding to scientific problems. The associated reading comes from a stated portion of a chapter or chapters of Brooker, or from other reading that may be assigned. The lab exercises are an important component of the course. It's always a good idea to bring your textbook (Brooker) to lab. Each lab will have a 5 pt. quiz prior to lab to assess understanding of the previous week's lab.

Help with studying, keeping up, and writing
We recognize that students come from a great variety of academic backgrounds, and that some of you may not have yet developed the appropriate study skills to do as well as you would like in college. Everyone needs help from time to time. There are many places to gain assistance or study skills - your peers, the professors, or PLNU's Tutorial Services Center. The center is located at the south end of the Bond Academic Center, next to the Office of Global Studies. A list of the Center's services can be found here:
http://www.pointloma.edu/experience/offices/student-services/tutorial-services/services

Attendance
Lecture and laboratory attendance is mandatory. Poor attendance tends to correlate with low exam scores. Please communicate with us regarding any planned absences. At 5 lecture (or 2 lab) absences, we must contact the Vice-Provost for Academic Administration for possible de-enrollment. At 10 lecture (or 3 lab) absences, you will be dropped from the course unless there is an exception granted by the administration. Note these important dates:
March 12, 2021 is the last day to add BIO 2012.
May 7, 2021 is the last day to drop BIO 2012.

In-class expectations
Computer activity in class must be course-related. Misuse in this regard could lead to us to ban all personal computers and phones in class. We will endeavor to start lecture and lab classes at the stated times. Please do the same! Extend the same type of courteous, considerate, and respectful behavior towards each other and towards us as we will extend to you.

Course credit hour information
In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 4-unit class (3 units lecture and 1 unit lab) delivered over 15 weeks. It is anticipated that students will spend a minimum of 37.5 participation hours per credit hour on their coursework. For this course, students will spend an estimated 150 total hours meeting the course learning outcomes. The time estimations are provided in the Canvas modules.

Assignments and grading
All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances. Your grades for lecture and lab will be combined, and the same grade will be given to both.

Assignment/Exam	**Points possible**
Exams 3 @ 100 points each	300 points
Final exam (partly comprehensive)	100 points
10 lab quizzes @ 5 points each	50 points
Open-book reading quizzes 6 @ 10 points each	60 points
12 labs @ 10 points each (if you complete all 13 labs, one is extra credit)	120 points
Clicker questions or other in-class activities	Approx. 90 points
Misc. assignments	Approx. 30 points
TOTAL	**750 points**

Grade calculation

A 92-100%	A- 90-91%	B+ 88-89%	B 82-87%	B- 80-81%	C+ 78-79%
C 72-77%	C- 70-71%	D+ 68-69%	D 62-67%	D- 60-61%	F 59% or lower

Exams
The course has three lecture exams as well as the final exam. The first three exams consist of multiple-choice, matching, and short-answer questions. The final exam (all multiple choice) will consist of 60% items related to the last portion of the course, as well as 40% items related to the main ideas/themes of the overall course. Please notify the appropriate instructor **in advance** of the need to reschedule an exam in case of an excused absence.

Final Exam policy: Successful completion of this class requires taking the final examination on its scheduled day (**Monday, June 7, 2021 from 10:30 AM – 1:00 PM**). No requests for early examinations or alternative days will be approved, except in extremely rare occasions.

Coronavirus-Related Safety Requirements

1. **A face mask must be worn properly in the laboratory at ALL times.** This will be strictly enforced! If you forget your mask, you will be sent home to retrieve it. **Your face mask should completely cover both your nose and mouth at all times.** Do NOT let your mask sag below your nose or mouth and become a chin strap. You should have **several face masks** in your possession, since you may wish to switch to a fresh mask once or twice a day. You will also want to have a good supply of cloth masks so that they can be washed frequently.

2. Follow all safety instructions given to you by your professor and lab assistants. **Six feet must be maintained** between students or between student lab partners, depending on how your professor has set up the laboratory space. Do not visit other students or student pairs within the classroom during class, and do not visit any equipment or other station within the lab unless it is vacant of other students/student pairs. When in doubt, please ask for instructions.

3. **Absolutely NO consumption of food (including gum) or beverages within the lab**, since this would require removing your mask. You MUST leave the lab classroom and go outside to take a drink from a closed container. Closed beverage containers must be protected within a back pack or bag while in the lab classroom so that air particles do not fall on the drinking surface.

4. Hands should be washed **thoroughly (20-30 sec) with soap both at the beginning and at the conclusion of each laboratory period**. Coronaviruses are effectively trapped by soap (like grease on pots and pans when washing dishes) and removed from your hands if you thoroughly wash your hands with soap for at least 20-30 seconds, and then dry them completely. Hand sanitizer will be made available as well.

5. We will be very thorough and strict with our disinfection policies. Students will do the following at **both the beginning and the end of the laboratory session**.

   - Thoroughly spray down and clean your lab bench. The special covid-19 disinfectant should thoroughly cover the surface and be allowed to sit for 1 full minute before wiping the cleaner off. Use a timer to ensure a full minute has passed.

   - Using whatever cleaner and other supplies given to you (e.g., special cloth rags or lens paper, etc), wipe down any shared equipment being used that day.

Do NOT touch your face while in lab, regardless of whether or not you are wearing lab gloves. Do not touch your phone or laptop in lab until you have washed your hands or used hand sanitizer. Sanitize your hands after touching shared equipment before using your cell phone or computer.

Schedule BIO 2012 overview – schedule subject to change
(all assignment details and due dates on Canvas)

Week 1	Introduction, then Protists
Weeks 2 & 3	Plant Diversity
Weeks 4	Exam #1, then Plant Physiology **Field trips to tidepools:** **Fri. 3/26 2-5 PM, Sat 3/27 2-5 PM or Sun 3/28 3-6 PM**
Weeks 5 & 6	Plant Physiology
Week 7	Plant Physiology, then Fungi
Week 8	Exam #2, then Animal Diversity
Week 9	Animal Diversity
Week 10	Animal Physiology
Week 11	Exam #3, then Animal Physiology
Weeks 12-14	Animal Physiology
Week 15	Final exam

Undergraduate Syllabus Notification Page

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See Academic Policies for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center (DRC@pointloma.edu or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all **synchronous** class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions (virtual or face-to-face), the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. In some courses, a portion of the credit hour content will be delivered **asynchronously** and attendance will be determined by submitting the assignments by the posted due dates. See Academic Policies in the Undergraduate Academic Catalog. If absences exceed these limits but are due to university excused health issues, an exception will be granted.

Asynchronous Attendance/Participation Definition

A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date. Failure to meet these standards will result in an absence for that day. Instructors will determine how many asynchronous attendance days are required each week.

SPIRITUAL CARE

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the Office of Spiritual Development

USE OF TECHNOLOGY

In order to be successful in the online environment, you'll need to meet the minimum technology and system requirements; please refer to the Technology and System Requirements information. Additionally, students are required to have headphone speakers compatible with their computer available to use. If a student is in need of technological resources please contact student-tech-request@pointloma.edu.

Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.