

**PALO ALTO COLLEGE  
BIOLOGY 2106  
ONLINE SYLLABUS**

- Online lab.  
- Environmental  
Biology

**CATALOG DESCRIPTION:**

**Environmental Biology Laboratory (1-0-3)**

Biology 2106 is a laboratory course designed to complement the Biol. 2306 lecture. Selected laboratory studies will relate to topics in the Biol. 2306 lecture.

**PREREQUISITES:** INRW 0420, MATH 0305.

**RATIONALE:**

Humans reside on Earth as a member of one of the systems which make up the Earth's environment. Many human activities adversely affect the systems of the environment, in the past, present, and future. Today's students will be the leaders of the future and students must have a basic knowledge of the systems that make up Earth's environment to understand how human activity impacts the environment. The primary goal immediately before us is to reach a level of sustainability to allow for a continued existence in a clean, safe environment with the necessary level of resources to support human and wildlife existence.

**THECB STUDENT LEARNING OUTCOMES:**

**Upon successful completion of this course, the student will be able to:**

Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data. (CT, T, EQ)

Use critical thinking and scientific problem-solving to make informed decisions in the laboratory. (CT, T, EQ)

Communicate effectively the results of scientific investigations. (C)

Explain the structure and impact of biogeochemical cycles. (CT, C)

Describe energy transformations across trophic levels. (CT, C)

Illustrate abiotic/biotic interactions and symbiotic relationships. (CT, C)

Identify various types of natural resources, human impact on these resources, and common resource management practices. (CT, T, EQ, C)

Quantify and analyze the impact of lifestyle on the environment. (CT, EQ)

Depict evolutionary trends and adaptations to environmental change. (CT, C)

Describe environmental hazards and risks and the social and economic ramifications. (CT, C)

Describe ecological and statistical techniques and approaches used in the study of environmental biology. (CT, T, EQ, C)

(CT= Critical Thinking; T= Teamwork; C= Communication;  
EQ= Empirical and Quantitative Reasoning)

### **TEXTBOOK REQUIREMENTS – (Optional)**

No text is required for the lab. There is **no lab manual**. The text used in the lecture (THE ENVIRONMENT AND YOU by Norm Christensen and Lissa Leege) may help you.

### **GRADING PROCEDURES:**

Competencies will be demonstrated on major exams and class projects. Exams will have a combination of essay, listing, multiple choice and true/false questions. All types may not be included on each exam. As the College's general Teamwork competency is assessed in science classes, some class activities will be team projects. All exams, quizzes, reports, and projects will be graded on a 100 point scale. Exams are scheduled on the outline.

**Hints for Success:** Complete assignments and submit them on time. Do not wait until the night before to study for an exam or write a paper.

### **EVALUATION:**

Lab Assignments	40%
Lab Quizzes	30%
Lab Exams	30%

### **GRADE SCALE**

A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = < 60

### **CLASS POLICIES:**

**Posting and Responding to Bulletin Board Postings.** Check “announcements” and “discussions” in Canvas regularly for bulletins and course topic notices. All questions dealing with the course or course content should be addressed to the instructor using the course or college email.

If you, the student, will be off-line for an extended period of time, you should notify me, the instructor, by private email and explain the circumstances of your absence. You will be expected to catch up on all work missed.

Students are provided windows of dates in which assignments and exams are to be submitted. Students should plan ahead and submit assignments and exams in this time frame. If there are unusual circumstances, which prevent timely submission of assignments and examinations, notify the instructor as soon as possible in order to negotiate submission arrangements.

**Student and Instructor Communication.** Private communication between the student and instructor shall be by the course or college email feature. If you have a question about anything related to the course, please ask.

**Instructor Response Time to Student.** Unless there is a failure in technology or I am called out of town for emergency purposes, I will try to adhere to a response time to the student of no more than 24 hours during the regular work week. (It is usually much less than that.) I usually check Canvas and email on weekends, but that is not a promise. If I have not at least acknowledged your email or posting within 24 hours, please email me asking for a response.

If for some reason (emergency situation), I am not able to be reached on-line or by phone, follow the

assignment if possible. Phone me or email me, and I will answer my email just as soon as I am able to get to a computer and log on. The departmental secretary is Ms. Hernandez and she may be contacted at 210-486-3370. She has voice mail on her phone.

**Course Cancellation.** If the course does not meet minimum enrollment, the instructor or the department secretary will notify the students by email or by telephone (if valid contact information is available).

**Dropping the Course.** It is your responsibility to drop a course and if you do drop this course, please notify me by e-mail. If I have not heard from you for two weeks (14 calendar days), I will drop you from the course and notify you by e-mail.

#### **STUDENT SUPPORT AND MANAGEMENT:**

**Conference Time.** Faculty members are required to keep office hours. These are specific times set aside for faculty conferences with students. During office hours, the instructor is available to 1) help you with any questions you have concerning the course, 2) discuss learning strategies, or 3) provide advice for completing an academic or career pathway. I want you to succeed. Please come and see me if you have any questions. You can always contact the instructor at your convenience at [lsandberg@alamo.edu](mailto:lsandberg@alamo.edu).

**Student Support Services** provides a variety of support to students and information regarding types of support may be found at the Palo Alto web home page. Free tutoring is available on campus at the writing assistance center, mathematics learning center, and the two science learning centers. The locations and times of operation can be found at the Palo Alto College website. The number for the Science Learning Center in Brazos Hall 126 is (210) 486-3232. Brainfuse online tutoring is available through ACES.

**Time Management.** Students should set aside a particular time at least three to four times a week to read the text and instructor notes. Review the “announcements” and the “discussion” board regularly.

**Strategies for Success** is an on-line study tutorial and is recommended reading. Please visit this site if you are new to college courses and/or Internet courses.

**Study Groups.** Students are encouraged to form study groups on their own as a support group. The instructor will form study groups for the purpose of addressing issues posted on the bulletin board. These issues are designed to enhance critical thinking and prepare the student for the essay questions on major exams.

**Technology Failure.** If there is a technology failure when you are online, try to log on and continue. If this is not possible, contact the instructor. The instructor will provide an alternative date to complete the work. Any time you experience technical difficulty, contact Support Central by email or call (210) 486-0555.

#### **COLLEGE POLICIES:**

**Smart Start.** The Alamo College District has a **Smart Start Policy**. There is a connection between attendance, classroom participation, and good grades. Your first week of class, especially the first day, provides you with important information for the rest of the term. Beginning fall 2014, if you **do not attend on the first day** of each class in which you are enrolled, you will be **dropped** from the class. Online students must complete an activity (for this course the “Statement of Understanding”) by the

third class day to avoid being **dropped** from the class. The instructor will follow the Smart Start guidelines.

**Attendance.** Regular and punctual attendance in classes and laboratories is required. Online students must log in regularly. A student absent (or who has not logged on regularly) for any reason may be allowed to make up work at the discretion of the instructor. In all cases, the student will be held responsible for completion of requirements. Excused absences are given only to students representing the school in an official capacity. The appropriate instructional division chair and dean must approve such absences.

**Excessive Absence Policy.** Student absences are recorded from the official date of enrollment. A student absent the equivalent of two weeks of instruction may be dropped by the instructor. Instructors are encouraged to drop students who are excessively absent (or who have not logged on regularly), are not doing well in class, and do not attempt to contact the instructor about the absences and/or academic problems. Absences do not have to be consecutive. A student dropped from a class for excessive absences may be given a grade of "W". See the section on Dropping the Course (above) for the proper procedure for dropping a course. A student required to be in a remedial class will be subject to being withdrawn from all college-level courses if the student is dropped from the required remedial class.

**Readmission to Class.** A student dropped for excessive absences may be readmitted to class only if circumstances justify reinstatement. The decision to reinstate the student is left to the discretion of the instructor.

**ADA Policy and Services.** In compliance with Section 504 of the Rehabilitation Act of 1973, PAC is committed to ensuring that all programs, services, and facilities are accessible to and provide equal opportunities for education to all students. The Disability Support Services (DSS) Office (210-486-3020) coordinates accommodations for PAC students with permanent and temporary disabilities as defined by the Americans with Disabilities Act (ADA) of 1990. Students who meet the guideline criteria are encouraged to establish accommodations through the DSS Office.

If you have a disability and require accommodations to meet your needs, notify the instructor the first week of classes. You will need to provide a "letter of accommodation" from the DSS office, located in room 116 at the Palomino Center. The instructor will comply with any and all of the accommodations listed in the letter.

## **TECHNICAL REQUIREMENTS**

**Minimum Hardware Requirements for the Course.** Students must have a reliable computer and a reliable internet provider.

**Minimum Software Requirements for the Course.** Students must have a word processing program. Microsoft Word or WordPerfect is recommended. **Students must have Adobe Reader.**

**Canvas and BioSig's recommended settings are:**

- Microsoft Internet Explorer 8 or above
- Mozilla Firefox 12 or above
- Google Chrome 9 or above
- Apple Safari 6 or above

- Flash Player 11 or above
- JavaScript enabled in your browser

Page last updated by L. Sandberg 1-6-2017

▼ Getting Started

Contains modules to be completed the First Day of Class

▼ First Thing: Smart Start / Identity Verification activity

Complete All Items

 **Instructions**  
View

 **BioSig Enrollment Assignment**  
1 pts | Submit

▼ Other First Day Activities

Complete All Items

 **FIRST DAY**  
View

 **BioSig Verification Assignment for the Statement of Understanding BSVA 1**  
Jan 18 | 1 pts | Submit

 **STATEMENT OF UNDERSTANDING**  
Jan 18 | 1 pts | Submit

▼ Exam 1 Learning Modules

LABS FOR LAB EXAM I

▼ Week 1: Topic 1 - Environmental Issues


Prerequisites: Other First Day Activities

Complete All Items

 **LAB 01 - Environmental Issues**


 **Lab 1 Worksheet**

 **Additional Information for Lab 1**

 **Submit Lab 1**  
Jan 20 | 100 pts

 **Instructions for Quizzes**  
View

 **BioSig Verification Assignment for Quiz 1 BSVA 2**  
Jan 20 | 1 pts | Submit

 **Quiz 1**  
Jan 20 | 100 pts | Submit

▼ **Week 2: Topic 2 - Systems and Modules**

Prerequisites: Other First Day Activities

**Complete All Items**

 **LAB 02 - Systems and Models**

 **Lab 2 Worksheet**

 **Additional Information for Lab 2**

 **Submit Lab 2**  
Jan 27 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 2 BSVA 3**  
Jan 27 | 1 pts | Submit

 **Quiz 2**  
Jan 27 | 100 pts | Submit

▼ **Week 3: Topic 3 - Biomes**

Prerequisites: Other First Day Activities

**Complete All Items**


 **LAB 03 - Biomes**

 **Lab 3 Worksheet**

 **Additional Information for Lab 3**

 **Submit Lab 3**  
Feb 3 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 3 BSVA 4**  
Feb 3 | 1 pts | Submit

 **Quiz 3**  
Feb 3 | 100 pts | Submit

▼ **Week 4: Topic 4 - Ecosystems**

Prerequisites: Other First Day Activities

**Complete All Items**

 **LAB 04 -Ecosystems**

 **Lab 4 Worksheet**

 **Additional Information for Lab 4**

 **Submit Lab 4**  
Feb 10 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 4 BSVA 5**  
Feb 10 | 1 pts | Submit

 **Quiz 4**  
Feb 10 | 100 pts | Submit

▼ **Week 5 Module**

Prerequisites: Other First Day Activities

**Complete All Items**

**Module For TEAM Project and Taking Lab Exam 1**

 **TEAM Project: Lab 5**

 **Team Assignment W1**  
Feb 17 | 100 pts

 **Instructions for Lab Exam 1**  
View



 **BioSig Verification Assignment for Exam I BSVA 6**  
Feb 17 | 1 pts | [Submit](#)

 **Exam I**  
Feb 17 | 100 pts | [Submit](#)

▼ **Exam 2 Learning Modules**

**LABS FOR LAB EXAM II**

▼ **Week 6: Topic 5 - Climate and Weather**

Prerequisites: Other First Day Activities

[Complete All Items](#)

**Lab 5 is a TEAM assignment!**

 **LAB 05 - Climate and Weather**

 **Lab 5 Worksheet**

 **ADDITIONAL INFO FOR LAB 5**

**TEAM Project W2: TEAM coordinator, submit Lab 5!**

 **Submit Lab 5 Here**  
Feb 24 | 100 pts

**Evaluate the Team using the Module below.**

 **Instructions for Quizzes**

**Everyone should submit Quiz 5.**

 **BioSig Verification Assignment for Quiz 5 BSVA 7**  
Feb 24 | 1 pts | [Submit](#)

 **Quiz 5**  
Feb 24 | 100 pts | [Submit](#)

▼ **Module for Self and Peer Evaluation**

 **Self Evaluation**  
Mar 3

 **Peer Evaluation A**  
Mar 3

 **Peer Evaluation B**  
Mar 3

 **Peer Evaluation C**  
Mar 3

 **Peer Evaluation D**  
Mar 3

▼ **Week 7: Topic 6 - Population Biology**


Prerequisites: Other First Day Activities

**Complete All Items**

 **LAB 06 - Population and Population Dynamics**

 **Lab 6 Worksheet**

 **ADDITIONAL LAB INFO for LAB 6**

 **Submit Lab 6**  
Mar 3 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 6 BSVA 8**  
Mar 3 | 1 pts | Submit

 **Quiz 6**  
Mar 3 | 100 pts | Submit

▼ **Week 8: Topic 7 - Air and Air Pollution**

Prerequisites: Other First Day Activities

**Complete All Items**

 **LAB 07 - Air Resources and Pollution**

 **Lab 7 Worksheet**

 **Additional Information for Lab 7**

 **Submit Lab 7**  
Mar 10 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 7 BSA 9**  
Mar 10 | 1 pts | Submit

 **Quiz 7**  
Mar 10 | 100 pts | Submit

▼ **Spring Break March 13 - 19**

No work is due this week. You might want to get ahead.

▼ **Week 9: Topic 8 - Water and Water Pollution**


Prerequisites: Other First Day Activities

**Complete All Items**

 **LAB 08 - Water and Water Pollution**

 **Lab 8 Worksheet**

 **LAB 08 ADDITIONAL INFO**

 **Submit Lab 8**  
Mar 24 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 8 BSA 10**  
Mar 24 | 1 pts | Submit

 **Quiz 8**  
Mar 24 | 100 pts | Submit

▼ **Week 10: Module For Taking Lab Exam 2**

Prerequisites: Other First Day Activities

**Complete All Items**

 **Instructions for Lab Exam 2**  
View

 **BioSig Verification Assignment for Exam II BSVA 11**  
Mar 31 | 1 pts | [Submit](#)

 **Exam II**  
Mar 31 | 100 pts | [Submit](#)

▼ **Exam 3 Learning Modules**

**LABS FOR EXAM III**

▼ **Week 11: Topic 9 - Solid and Hazardous Waste**


Prerequisites: Other First Day Activities

[Complete All Items](#)

 **LAB 09 - Solid and Hazardous Waste Management**

 **Lab 9 Worksheet**

 **LAB 09 ADDITIONAL INFO**

 **Submit Lab 9**  
Apr 7 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 9 BSVA 12**  
Apr 7 | 1 pts | [Submit](#)

 **Quiz 9**  
Apr 7 | 100 pts | [Submit](#)

▼ **Week 12: Topic 10 - Pesticides**

Prerequisites: Other First Day Activities

[Complete All Items](#)

**Work is due April 14th. Easter Break is April 14 - 16.**

 **LAB 10 - Pesticides**

 **Lab 10 Worksheet**

 **LAB 10 ADDITIONAL INFO**

 **Submit Lab 10**  
Apr 14 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 10 BSVA 13**  
Apr 14 | 1 pts | Submit

 **Quiz 10**  
Apr 14 | 100 pts | Submit

▼ **Week 13: Topic 11 - Endangered Species**


Prerequisites: Other First Day Activities

**Complete All Items**

 **LAB 11 - Endangered Species**

 **Lab 11 Worksheet**

 **LAB 11 ADDITIONAL INFO**

 **Submit Lab 11**  
Apr 21 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 11 BSVA 14**  
Apr 21 | 1 pts | Submit

 **Quiz 11**  
Apr 21 | 100 pts | Submit

▼ **Week 14: Topic 12 - Energy Resources**


Prerequisites: Other First Day Activities

**Complete All Items**

 **LAB 12 - Energy Resources**

 **Lab 12 Worksheet**

 **LAB 12 ADDITIONAL INFO**

 **Submit Lab 12**  
Apr 28 | 100 pts

 **Instructions for Quizzes**

 **BioSig Verification Assignment for Quiz 12 BSA 15**  
Apr 28 | 1 pts | [Submit](#)

 **Quiz 12**  
Apr 28 | 100 pts | [Submit](#)

▼ **Week 15: Module For Taking Lab Exam 3**

Prerequisites: [Other First Day Activities](#)

[Complete All Items](#)

 **Instructions for Lab Exam 3**  
[View](#)

 **BioSig Verification Assignment for Exam III BSA 16**  
May 5 | 1 pts | [Submit](#)

 **Exam III**  
May 5 | 100 pts | [Submit](#)