

# California State University, Los Angeles Department of Biological Sciences

## BIOL 1010, General Biology, SPRING 2023

### Instructor Information

**Instructor:** Mr. Chris DeMarco

**Email:** [cdemarc2@calstatela.edu](mailto:cdemarc2@calstatela.edu)

**Office Hours:** Virtual by appointment

**Class Days/Time:** Fri 10 am-12 pm

**Prerequisites:** None

### Course Description

This is an introductory biology course for non-majors with an emphasis on the process of science and principles common to all domains of life; topics include metabolism, inheritance, evolution, organismal structure and function. Lecture 2 hours, laboratory 3 hours. *No credit toward Biology major or minor.* This course satisfies the B2 (life science) lower division general education requirement.

The course will focus on unifying themes such as energy and information flow through biological systems, which integrate processes across multiple scales, from single cells and organisms to species and ecosystems. Following this approach, we will emphasize the commonality of plant and animal evolutionary solutions to shared challenges (e.g., energy acquisition, water and temperature balance, reproduction, receiving and responding to environmental signals, communication). Thus, the course will emphasize critical thinking by asking you to carefully consider the nature of the scientific evidence discussed, and the integrity of public statements on this topic.

### Course Objective/Outcomes

Upon successful completion of this course, students will be able to:

1. Apply scientific reasoning and evaluate evidence to reach a conclusion (this includes applying the scientific method, demonstrating understanding of living and non-living aspects of the world you live in, of human cultural and scientific endeavors, and the structures and institutions that frame human interactions).
2. Compare plant and animal solutions to similar fundamental life challenges
3. Describe levels of organization and related functions in among various organisms.
4. Identify the characteristics and basic needs of living organisms and ecosystems.
5. Explain the processes of growth and development in individuals and populations.
6. Design and critically assess the scientific investigations they perform.
7. Demonstrate critical thinking skills.
8. Collect, interpret and present information (this includes demonstrating effective oral and written communication, thinking logically, creatively and critically, applying quantitative reason and skills to solve problems, and using technology effectively to gather and communicate information).

### Specific Learning Objectives for Biology 1010

1. Examine the relationship between the nature of science and interpreting the biodiversity of life on Earth.
2. Identify and describe the properties of life.
3. Describe the levels of organization among living things.

4. Explain the flow of energy among organisms.
5. Explain how energy is utilized and transferred among organisms.
6. Analyze various metabolic pathways.
7. Discuss how enzymes function as molecular catalysts.
8. Describe what evolution is, the evidence for it, and how it operates resulting in changes in organismal structure and function.
9. Analyze the major kinds of interactions between organisms, and between organisms and their environment.
10. Explain the evolutionary and ecological basis of these interactions including, but not necessarily limited to, cost/benefit tradeoffs, sexual selection, and altruism.
11. Translate the potential benefits and consequences of conservation biology.
12. Evaluate how the actions of humans can destabilize interactions.
13. Evaluate media (e.g. newspaper stories) with a keener appreciation of the science behind the story.

## Required Course Materials

**No textbook is required. All content is on Canvas**

## Course Structure

For this course, **ALL LECTURES and TESTS** will be online. The class points are completely based on the quizzes you take.

Lecture classes meet via ZOOM twice a week. Links to the meetings are provided in that week's module and in weekly announcements. During lecture, I will go over that week's topic through Power Points, which are posted on Canvas. Lecture classes will also include doing a class activity for which there is a quiz. Students get two attempts at these quizzes, the highest score being recorded. In addition to class activities, there will be unit activities, for which there will also be quizzes. You will also have two attempts at these quizzes and the highest score will be recorded.

It is critical that you complete quizzes by or before the posted submission deadlines. **No late quizzes will be accepted. No make-ups allowed. Emergencies and extenuating circumstances may be considered if they are verifiable and documented. In this case, you should contact your lab instructor and, at their discretion, arrange to make-up your missed quizzes.**

## Exams

All exams will be done online via Canvas. The exams will be unlocked for a window of time after which time they will be locked. There are no make-up exams. No class will be on those exam days. The exams are to be done individually, not as a group or with anyone else.

Exams will consist of multiple choice, true/false, and fill in the blank. The content of exams will be derived from PowerPoint lectures and class activities. Specified supplemental materials or videos may also be included, and students will be notified which of these materials may also be included.

## Assignment/Quiz Policy:

No late quizzes will be accepted. No make-ups allowed. Emergencies and extenuating circumstances may be considered if they are verifiable and documented. In this case, you should contact your lab instructor and, at their discretion, arrange to make-up your missed quizzes.

## Computer Requirements

You need access to a reliable computer. It is the student's responsibility to have a reliable computer and reliable internet. Issues with computers or internet connections are **NOT** excuses for not doing modules. Make sure your computer has the needed software for the labs, eg Java, Html, etc . Do not wait until the night quizzes are due to find out that you don't know how to access the virtual labs and activities. If you have trouble running programs, first try Googling solutions. If that doesn't work, contact the ITS Help Desk. They should be available 24/7, except during holidays, breaks, and intersessions.

<https://www.calstatela.edu/its/helpdesk> Phone: 323-343-6170 The 24/7 Annex Computer Lab is closed, but students can access it remotely. <https://www.calstatela.edu/its/annex-247-lab>

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## Assignments and Grading Policy

### Points Possible:

40 points – In-Class Activities

60 points – Unit Activities/assignments

30 points – Exam I

25 points – Exam II

25 points – Exam III

25 points – Exam IV

100 points – Comprehensive Final Exam

300 points – Laboratory Activities and Assignments (Detailed in the Laboratory Syllabus)

**Total Course = 600 points**

**Grading Scale:** You will receive a single grade for the lecture and lab portions of the course.

Letter grades will be determined based on the grading scale below.

### Grade Percent

Grade Percent

A= 93-100%

A-= 90-92%

B+= 87-89%

B= 83-86%

B-= 80-82%

C+= 77-79%

C= 73-76%

C-= 70-72%

D+= 67-69%

D= 63-66%

F= below 62%

## How to Succeed

- Keep up with weekly quizzes and complete them on time. **There will be no make-up opportunities for missed quizzes.** If you have an extenuating circumstance or emergency that is verifiable and documented, you can contact your lab instructor about making up the quiz.
- Start the modules early in the week, don't wait until the last minute. Computers crash, internet goes out, and other things happen which will not be an excuse for missing a quiz.
- Be accountable. Because this class is online, you need to manage yourself. Your lab instructor will provide a syllabus and schedule for you to follow. It's up to you to get the work done.
- Be pro-active. If there are issues or you anticipate an issue that will prevent you from completing modules, contact your instructor ASAP. Don't wait until it's too late.

## Course Communication

### Email Policy

I will make every effort to communicate frequently with students through campus email. **Do not use the messages through our Canvas section site.** I will respond to an email within 48 hours. It is your responsibility to check your email daily for updates and announcements. Excessive emails impact both the professor and the student. Please make sure you have a legitimate reason for emailing. If you email me with a question that can be answered by looking at the syllabus, the announcements, or paying attention in class, I will not answer that question.

I will respond to email about:

- Questions arising from difficulty in understanding course content.
- Requests for feedback on a graded assignment.
- Private issues as why you missed an assignment.

I will not respond to email:

- About a question that is already answered in the course information.
- That lacks a subject line clearly stating the purpose of the email.
- That lacks your name and course name/section.
- That does not follow basic email etiquette.
- That is sent from a non-Cal State LA email address.
- Raises an inappropriate question like asking for extra credit.

## Participation and Attendance

Please log onto ZOOM on time and ready to learn. I expect students to attend ZOOM class sessions. However, I understand that internet connections can be fickle, and you may miss parts of class or entire class sessions. Do your best to attend class because it will help you understand the content. During class, I will ask questions and students can reply via the message board or through polls.

## Respectful Classroom Atmosphere

Just because class will be online, does not mean you behave any less appropriately than you would during a face to face class. These are the rules for online classes:

- Keep your mic muted unless you ask a question. This prevents any background noise from interrupting class. Students don't need to turn on their cameras during class. You can if you want. If you do turn on your camera, act professional and no other people should be in view.
- Profile pics must be appropriate, no nudity, no suggestive, or offensive pics.
- The chat board is not for student socializing. It's for students asking me questions or for students responding to my questions.

***Any inappropriate or offensive behavior is cause for removal from ZOOM lectures.***

## **Math**

Every biologist uses math and statistics. In this course you will use some math as it applies to biology. This mostly includes making and interpreting graphs, but may also include calculating averages and variation around an average. I will help you and there will be chances to practice. NOTE: a calculator is good for this class.

## **Helpful Student Resources**

### **Technical Resources**

Information on CSULA technical support resources for students: [Technical Support](#)

### **Student Support Services**

Information on CSULA student support resources for students: [Student Services](#)

### **Academic Support Services**

Information on CSULA academic support resources for students: [Academic Support](#)

### **Canvas Mentor Site**

Information for students on how to be a successful online student and how to use Canvas:  
[Canvas Mentor](#) (Canvas Tutorials)

## **Course & University Policies**

### **Student Handbook**

Information on student rights and responsibilities, academic honesty, standards of conduct, etc., can be found in Schedule of Classes for the current quarter visit the Cal State LA [Schedule of Classes Information](#) under Policies and Procedures.

### **Dropping and Adding**

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Students should be aware of the current deadlines and penalties for adding and dropping classes by visiting the [GET home page](#). (Registrar news and information)

### **Americans with Disabilities Act (ADA)**

Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation. For more information visit the [Office for Students with Disabilities](#) home page. <http://web.calstatela.edu/univ/osd/atlc.php>.

## **Academic Honesty/Student Conduct**

This link contains the Cal State LA Policies and Procedures on Academic Honesty:  
<http://ecatalog.calstatela.edu/content.php?catoid=12&navoid=842>

**Student Conduct:** <http://ecatalog.calstatela.edu/content.php?catoid=12&navoid=843>

## Lecture course outline and schedule

Week	Date	Topics	Activities
Week 1	January 24	Course Introduction/Expectations/ What is science	
	January 26	Scientific method /Hypothesis testing	Hypotheses
Week 2	January 31	Basic chemistry	Solubility & Concentration
	February 2	Biological molecules	Biological Molecules
Week 3	February 7	NO CLASS	
	February 9	EXAM I	
Week 4	February 14	Cell structure and function	Cell Organelles
	February 16	Cell membranes and transport	
Week 5	February 21	Respiration	Yeast Respiration
	February 23	Photosynthesis	
Week 6	February 28	EXAM II	
	March 2	Cell cycle and prokaryotic cell division	Mitosis
Week 7	March 7	DNA structure and Replication	DNA Replication
	March 9	DNA transcription and translation	Mystery protein; Transcr/Transl
Week 8	March 14	Meiosis and Mendelian genetics	Missing genotype
	March 16	Non-Mendelian genetics	Sex-linked traits
Week 9	March 21	EXAM III	
	March 23	Cancer & Viruses	COVID-19
	March 27- March 31	SPRING BREAK!! NO LECTURE AND NO LABS	
Week 10	April 4	Evolution and how it happens	Extreme Athletes
	April 6	Speciation	Ring species
Week 11	April 11	Evidence of evolution and misconceptions	Penguins; Ancient Egyptians
	April 13	Organizing life and evolutionary relationships	Dragons
Week 12	April 18	EXAM IV	
	April 30	Population ecology	Mosquito
Week 13	April 25	Community ecology	Barnacles
	April 27	Ecosystems	Fires; Food Web
Week 14	May 2	Biodiversity	Biomimicry
	May 4	Conservation	Climate Change
Week 15	May 9	NO CLASS	
	May 11	NO CLASS	
	May 14-19	FINAL EXAM WEEK	