

Syllabus for BIOL-3 Cell Biology

Course Information

Semester & Year: Fall 2021

Course ID & Section #: BIOL-3-V2512

Instructor's name: Dr. Diqui LaPenta

Course units: 4

Instructor Contact Information

Office Location: online only

Office hours: Tuesdays at 3PM and by appointment (Via Zoom only)

Phone number: 707-476-4257

Email address: Contact me through Canvas email (diqui-lapenta@redwoods.edu)

Required Materials

Textbook: FREE OPEN SOURCE!

Online: <https://openstax.org/details/books/biology-2e>

Hard copy (NOT FREE) through CR bookstore: <https://bncvirtual.com/redwoods>

Lab Notebook: [LabArchives electronic notebook](#). You will receive the URL invitation before the first week of class. The cost is approximately \$20, and it is free for the first 2 weeks. Failure to pay the fee will lock you out of the software.

Catalog Description

A course intended for biology majors covering principles and applications of prokaryotic and eukaryotic cell structure and function, biological molecules, homeostasis, cell reproduction and its controls, classical and molecular genetics, cell metabolism, and cellular communication.

Course Student Learning Outcomes (*from course outline of record*)

1. Identify and describe biological molecules and cell structures, and explain their functions.
2. Compare and contrast cellular processes and interactions between prokaryotes and eukaryotes (including metabolism, reproduction, communication, and genetics).
3. Explain how DNA replicates and transmits genetic information within organisms.
4. Apply the processes of scientific inquiry and experimental design to the study of biological concepts.

Prerequisites/co-requisites/ recommended preparation

Prerequisite: CHEM-1A or CHEM-2 with a minimum grade of "C".

Recommended preparation: ENGL-1A and MMAP placement at transfer-level Mathematics

Accessibility

Students will have access to online course materials that comply with the Americans with Disabilities Act of 1990 (ADA), Section 508 of the Rehabilitation Act of 1973, and College of the Redwoods policies.

Students who discover access issues with this class should contact the instructor.

College of the Redwoods is also committed to making reasonable accommodations for qualified students with disabilities. If you have a disability or believe you might benefit from disability-related services and accommodations, please contact your instructor or [Disability Services and Programs for Students](#) (DSPS).

Students may make requests for alternative media by contacting DSPS based on their campus location:

- Eureka: 707-476-4280, student services building, 1st floor
- Del Norte: 707-465-2324, main building near library
- Klamath-Trinity: 530-625-4821 Ext 103

During COVID19, approved accommodations for distance education classes will be emailed to the instructor by DSPS. In the case of face to face instruction, please present your written accommodation request to your instructor at least one week before the first test so that necessary arrangements can be made. Last-minute arrangements or post-test adjustments cannot usually be accommodated.

Support for online learners during COVID-19

In response to COVID-19, College of the Redwoods moved the majority of its courses online to protect health and safety. As the faculty and students adjust to this change, clear communication about student needs will help everyone be successful. Please let me know about any specific challenges or technology limitations that might affect your participation in class. I want every student to thrive.

Evaluation & Grading Policy

Assignments and Grading:

Assignment	number	Points per assignment	Total points possible
Lecture discussions	25	5	125
Lecture exams	3	100	300
Final lecture essay	1	50	50
Lab discussions	10	5	50

Lab Reports	11	15	150 (lowest score dropped)
Lab quizzes	4	25-40	125
Lab Final	1	100	100
Total possible points			900

Letter grades:

Letter grade	%	#points
A	94-100	842-900
A-	90-93	806-841
B+	87-89	779-805
B	83-86	743-778
B-	80-82	716-742
C+	77-79	689-715
C	70-76	626-688
D	60-69	536-625
F	<60	<536

Lab and the Lab Notebook:

The purpose of the lab experiments is to demonstrate the way in which biological information is gained. This requires the use of scientific equipment and experimental techniques, many of which have been perfected only in the last 20-30 years. Remember that above all, a scientist is an observer of facts and not merely of expectations. All labs will be completed using the LabArchives electronic lab notebook. Due to the late switch to online, we might be able to have lab kits (free) delivered late in the semester. The site is free to use for 2 weeks, then you will be locked out unless you pay the ~\$20 access fee. All questions must be answered, and all images

must be uploaded where indicated (uploading elsewhere can lead to losing points. Please don't make me hunt for required materials). Your discussion should be accompanied by conclusions drawn from the data as well as informed speculations. Graphs: tables and graphs to organize the data. All tables and graphs should be labeled so that a reader could understand the contents **without scrolling back and forth to the procedures or data pages.**

Each graph must include:

- v Title of the graph
- v Labels, including units, on each axis
- v Legend if there is more than one line or bar
- v Separate lines/bars must be easily distinguishable

Analysis: Discussion and conclusions put into context as described above. The lab report grades will be based on the quality of the data presentation, formatting according to instructions, logic, and quality of the analysis. The analytical quality is the most important aspect.

Admissions deadlines & enrollment policies

Fall 2021 Dates

- *Classes begin: 8/21/21*
- *Last day to add a class: 8/27/21*
- *Last day to drop without a W and receive a refund: 9/03/21*
- *Labor Day Holiday (all campuses closed): 09/06/21*
- *Census date: 9/07/21 or 20% into class duration*
- *Last day to petition to graduate or apply for certificate: 10/28/21*
- *Last day for student-initiated W (no refund): 10/29/21*
- *Last day for faculty-initiated W (no refund): 10/29/21*
- *Veteran's Day (all campuses closed): 11/11/21*
- *Fall Break (no classes): 11/22/21 – 11/26/21*
- *Thanksgiving Holiday (all campuses closed): 11/24/21 – 11/26/21*
- *Final examinations: 12/11/21 – 12/17/21*
- *Last day to petition to file P/NP option: 12/17/21*
- *Semester ends: 12/17/21*
- *Grades available for transcript release: approximately 01/07/22*

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Students who have experienced extenuating circumstances can complete & submit the **Excused Withdrawal Petition** to request an Excused Withdrawal (EW) grade instead of the current Withdrawal (W) or non-passing (D, F & NP) grades. The EW Petition is available from the Admissions and Records Forms Webpage. Supporting documentation is required.

Academic dishonesty

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic dishonesty, determination of the grade and of the student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated academic dishonesty, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct ([AP 5500](#)) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the [College Catalog](#) and on the [College of the Redwoods website](#).

Disruptive behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process, a disruptive student may be temporarily removed from class. In addition, the student may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct ([AP 5500](#)) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the [College Catalog](#) and on the [College of the Redwoods website](#).

Inclusive Language in the Classroom

College of the Redwoods aspires to create a learning environment in which all people feel comfortable in contributing their perspectives to classroom discussions. It therefore encourages instructors and students to use language that is inclusive and respectful.

Setting Your Preferred Name in Canvas

Students have the ability to have an alternate first name and pronouns to appear in Canvas. Contact [Admissions & Records](#) to request a change to your preferred first name and pronoun. Your Preferred Name will only be listed in Canvas. It does not change your legal name in our records. See the [Student Information Update form](#).

Canvas Information

Log into Canvas at <https://redwoods.instructure.com>

Password is your 8 digit birth date

For tech help, email its@redwoods.edu or call 707-476-4160

Canvas Help for students: <https://www.redwoods.edu/online/Help-Student>

Canvas online orientation workshop:

<https://www.redwoods.edu/online/Home/Student-Resources/Canvas-Resources>

Community College Student Health and Wellness

Resources, tools, and trainings regarding health, mental health, wellness, basic needs and more designed for California community college students, faculty and staff are available on the California Community Colleges [Health & Wellness website](#).

[Wellness Central](#) is a free online health and wellness resource that is available 24/7 in your space at your pace.

Students seeking to request a counseling appointment for academic advising or general counseling can email counseling@redwoods.edu.

Emergency procedures / Everbridge

College of the Redwoods has implemented an emergency alert system called Everbridge. In the event of an emergency on campus you will receive an alert through your personal email and/or phones.

Registration is not necessary in order to receive emergency alerts. Check to make sure your contact information is up-to-date by logging into WebAdvisor <https://webadvisor.redwoods.edu> and selecting 'Students' then 'Academic Profile' then 'Current Information Update.'

Please contact Public Safety at 707-476-4112 or security@redwoods.edu if you have any questions. For more information see the [Redwoods Public Safety Page](#).

In an emergency that requires an evacuation of the building anywhere in the District:

- Be aware of all marked exits from your area and building
- Once outside, move to the nearest evacuation point outside your building
- Keep streets and walkways clear for emergency vehicles and personnel

Do not leave campus, unless it has been deemed safe by the campus authorities.

Del Norte Campus Emergency Procedures

Please review the [Crescent City campus emergency map](#) for campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). For more information see the [Redwoods Public Safety Page](#).

Eureka Campus Emergency Procedures

Please review the [campus emergency map](#) for evacuation sites, including the closest site to this classroom (posted by the exit of each room). For more information on Public Safety go to the [Redwoods Public Safety Page](#). It is the responsibility of College of the Redwoods to protect life and property from the effects of emergency situations within its own jurisdiction.

In the event of an emergency:

1. Evaluate the impact the emergency has on your activity/operation and take appropriate action.
2. Dial 911, to notify local agency support such as law enforcement or fire services.
3. Notify Public Safety 707-476-4111 and inform them of the situation, with as much relevant information as possible.
4. Public Safety shall relay threat information, warnings, and alerts through the Everbridge emergency alert system, Public address system, and when possible, updates on the college website, to ensure the school community is notified.
5. Follow established procedures for the specific emergency as outlined in the College of the Redwoods Emergency Procedure Booklet, (evacuation to a safe zone, shelter in place, lockdown, assist others if possible, cooperate with First Responders, etc.).
6. If safe to do so, notify key administrators, departments, and personnel.
7. Do not leave campus, unless it is necessary to preserve life and/or has been deemed safe by the person in command.

Klamath Trinity Campus Emergency Procedures

Please review the responsibilities of, and procedures used by, the College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to communicate to faculty, staff, students and the general public during an emergency. It is the responsibility of College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to protect life and property from the effects of emergency situations within its own jurisdiction.

1. In the event of an emergency, communication shall be the responsibility of the district employees on scene.
 - a. Dial 911, to notify local agency support such as law enforcement or fire services.
 - b. If safe to do so, notify key administrators, departments, and personnel.
 - c. If safe to do so, personnel shall relay threat information, warnings, to ensure the school community is notified.
 - d. Contact Jolene Gates 530-625-4821 to notify of situation.
 - e. Contact Hoopa Tribal Education Administration office 530-625-4413
 - f. Notify Public Safety 707-476-4111.
2. In the event of an emergency, the responsible district employee on scene will:
 - a. Follow established procedures for the specific emergency as outlined in the College of the Redwoods Emergency Procedure Booklet.

- b. Lock all doors and turn off lights if in lockdown due to an active shooter or similar emergency.
- c. Close all window curtains.
- d. Get all inside to safe location Kitchen area is best internal location.
- e. If a police officer or higher official arrives, they will assume command.
- f. Wait until notice of all is clear before unlocking doors.
- g. If safe to do so, move to the nearest evacuation point outside building (Pooky's Park), directly behind the Hoopa Tribal Education Building.
- h. Do not leave site, unless it has been deemed safe by the person in command. Student Support Services (required for online classes)

Student Support Services

The following online resources are available to support your success as a student:

- [CR-Online](#) (Comprehensive information for online students)
- [Library Articles & Databases](#)
- [Canvas help and tutorials](#)
- [Online Student Handbook](#)

[Counseling](#) offers assistance to students in need of professional counseling services such as crisis counseling.

Learning Resource Center includes the following resources for students

- [Academic Support Center](#) for instructional support, tutoring, learning resources, and proctored exams. Includes the Math Lab & Drop-in Writing Center
- [Library Services](#) to promote information literacy and provide organized information resources.
- [Multicultural & Diversity Center](#)

Special programs are also available for eligible students include

- [Extended Opportunity Programs & Services \(EOPS\)](#) provides financial assistance, support and encouragement for eligible income disadvantaged students at all CR locations.
- The TRiO Student Success Program provides eligible students with a variety of services including trips to 4-year universities, career assessments, and peer mentoring. Students can apply for the program in [Eureka](#) or in [Del Norte](#)
- The [Veteran's Resource Center](#) supports and facilitates academic success for Active Duty Military, Veterans and Dependents attending CR through relational advising, mentorship, transitional assistance, and coordination of military and Veteran-specific resources.

- Klamath-Trinity students can contact the CR KT Office for specific information about student support services at 530-625-4821

Class schedule BIOL3 Fundamental Cell Biology Tentative Lecture Schedule

Readings are from the Open Stax textbook, Biology, 2e. Any revisions to this schedule will be posted in announcements and only the most current syllabus will be available on Canvas.

Date	Topic	Reading
M Aug 23	Intro to course; Themes and Concepts	Ch. 1
W Aug 25	Chemistry Review: atoms, molecules, and importance of water and carbon	Ch. 2
M Aug 30	Biological Macromolecules	Ch. 3
W Sep 1	Biological Macromolecules	Ch. 3
M Sep 6	Labor Day Holiday	
W Sep 8	Cell Structure	Ch. 4
M Sep 13	Membranes	Ch. 5
W Sep 15	Energy, Metabolism and Enzymes	Ch. 6
M Sep 20	Energy in Living Systems & Glycolysis; Citric Acid Cycle; Electron Transport	Ch. 7
W Sep 22	EXAM I (through 9/15 material)	
M Sep 27	Anaerobic metabolism & lipid and protein metabolism; Regulation of metabolism	Ch. 7
W Sep 29	Photosynthesis	Ch. 8

M Oct 4	Cell communication: signals, receptors & signal propagation	Ch. 9
W Oct 6	Cell communication: response & signals in single-celled organisms	Ch. 9
M Oct 11	Mitosis and the Cell Cycle	Ch. 10, pp279-288
W Oct 13	Cell Cycle control, cancer and binary fission	Ch. 10 pp289-306
M Oct 18	Meiosis and sexual reproduction	Ch. 11
W Oct 20	EXAM II (through 10/13 material)	
M Oct 25	Mendelian inheritance	Ch. 12
W Oct 27	Modern genetics	Ch. 13
M Nov 1	Genetics Practice problems	
W Nov 3	DNA Structure and function	Ch. 14
M Nov 8	Genes and proteins	Ch. 15
W Nov 10	Genes and proteins continued	Ch. 15
M Nov 15	Gene expression through epigenetics	Ch. 16 pp429-438
W Nov 17	Gene expression continued	Ch. 16 pp439-452
Monday November 22-Friday November 26: Thanksgiving Holiday		

M Nov 29	Biotechnology and genomics	Ch. 17 pp455-467
W Dec 1	EXAM III (through 11/17 material)	
M Dec 6	Biotechnology and genomics, continued	Ch. 17 pp468-484
W Dec 8	Review for Final Lecture Essay requirements	

BIOL3 Fundamental Cell Biology Tentative Lab Schedule

<u>Week:</u>	<u>Exercise:</u>
1: Aug 26	Learning how LabArchives works Virtual Microscope/Cell Structure
2: Sep 2	Osmosis and Diffusion
3: Sep 9	Chromatography
4: Sep 16	Spectroscopy (Lab Quiz 1)
5: Sep 23	Enzymes
6: Sep 30	Respiration and Photosynthesis
7: Oct 7	Mitosis

8: Oct 14	Meiosis
9: Oct 21	Genetics (lab quiz 2)
10: Oct 28	DNA isolation
11: Nov 4	Intro to Biotechnology
12: Nov 11	Analyze mitochondrial DNA sequences (lab quiz 3)
13: Nov 18	Continue DNA sequence analysis
14: Dec 2	LAB EXAM
15: Dec 13	Discussion of Final Lecture Learning Outcomes Essay