

BIOL-2 Syllabus and Course Schedule

Syllabus for BIOL-2 (Microbiology)

Course Information:

- Semester & Year: Spring 2021
 - Course ID & Section #: Biol-2 D2960
 - Instructor's name: Christopher Callahan
 - Day/Time: Online
 - Location: Online
 - Number of units: 4.0
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Instructor Contact Information

- Office location: Online
 - Office hours: Tues/Thur after lab on Zoom or by appointment
 - Phone number: 707-465-2379
 - Email address: christopher-callahan@redwoods.edu
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Required Materials

- Textbook Title: OpenStax College Microbiology (Free)
 - Edition: 1e
 - Author: OpenStax College
 - ISBN: N/A
 - Laboratory Manual: Microbiology: Laboratory Theory & Application
 - Edition: 3e Brief
 - Author: Leboff, Morton Publishing
 - ISBN: 978-1617314773
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Catalog Description

A study of microorganisms including anatomy, physiology, genetics, and ecological importance. Emphasis will be on the role of microorganisms in disease and the mechanisms of microbe/host interactions. Laboratory work emphasizes the importance of aseptic techniques, methods of microbial control, and procedures for isolating, culturing microbes, and identifying microorganisms.

Course Student Learning Outcomes

1. Describe the anatomy, physiology and biochemistry of microorganisms and the consequential effects of various environmental factors upon them.
 2. Know the causative organism of the more common human diseases and the physiological effect of the drugs most commonly used in the fight against these diseases.
 3. Describe the principles and applications of genetic engineering and the role that microorganisms are playing in this process.
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Evaluation & Grading Policy

Assignment		Points
Lecture Exams	3 exams @ 100 points each	300
Lab Exams	2 exams @ 50 points each	100
Syllabus Quiz	must be completed by 1/24	5
Chapter Quiz	12 quizzes @ 10 points each	120
Lab Activities	11 activities @ 15 pts each	165
Bergey's Activity		10
Unknown Report		100
	Total Points Attainable:	700

If you receive 95-100% of total points you will receive an A; 90 to 94% earns an A-; 87-89% earns a B+; 84-86% earns a B; 80-83% earns a B-; 75-79 earns a C+; 70-74 earns a C; 60-69% earns a D; and 59% or below earns an F. There is no 'curving' or extra credit opportunities for missed work.

Prerequisites/co-requisites/ Recommended Preparation

Prerequisite: BIOL-1 or BIOL 3

Pre- or Co-requisite: CHEM-1A or CHEM-2

Student Feedback Policy

All work will be graded within two weeks of submission for evaluation. Grades will be posted on Canvas and will not be communicated through email. If you would like to discuss grades you'll have to set up a Zoom appointment with me.

Institutional Policies

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](http://www.redwoods.edu/dsps) (<http://www.redwoods.edu/dsps>) (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.

Admissions deadlines & enrollment policies

Fall 2022 Dates

- *Classes begin: 1/15/22*
- *MLK Holiday (no class meeting): 1/17/22*
- *Last day to add a class: 1/21/22*
- *Last day to drop without a W and receive a refund: 1/28/22*
- *Census date: 1/31/22*
- *Last Day to file P/NP (only courses where this is an option) 02/11/22*
- *Lincoln's Birthday (all campuses closed): 02/18/22*
- *Presidents Day (all campuses closed): 02/21/22*
- *Last day to petition to graduate or apply for certificate: 03/03/22*
- *Spring Break (no classes): 3/14/22-3/19/22*
- *Last day for student-initiated W (no refund): 04/01/22*
- *Last day for faculty-initiated W (no refund): 04/01/22*
- *Final examinations: 5/7/22-5/13/22*
- *Semester ends: 5/13/22*
- *Grades available for transcript release: approximately 5/30/22*

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 \(https://redwoods.instructure.com/courses/14340/pages/student-code-of-conduct-and-disciplinary-procedures?module_item_id=570553\)](https://redwoods.instructure.com/courses/14340/pages/student-code-of-conduct-and-disciplinary-procedures?module_item_id=570553)) 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 \(https://www.redwoods.edu/catalog\)](https://www.redwoods.edu/catalog) and on the [College of the Redwoods website \(https://www.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies\)](https://www.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies).

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 \(https://redwoods.instructure.com/courses/14340/pages/student-code-of-conduct-and-disciplinary-procedures?module_item_id=570553\)](https://redwoods.instructure.com/courses/14340/pages/student-code-of-conduct-and-disciplinary-procedures?module_item_id=570553)) 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](https://www.redwoods.edu/catalog) [_\(https://www.redwoods.edu/catalog\)](https://www.redwoods.edu/catalog) and on the [College of the Redwoods website](https://www.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies) [_\(https://www.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies\)](https://www.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies)

Policies for this Class

Class participation

Lecture and lab are intimately interrelated. The topics you learn about in lecture you see in lab, usually that very week.

Lecture Exams: There are three lecture exams including the lecture final. Exams are not comprehensive and will only cover new material.

Lab Exams: There are two lab exams. Lab exams are not comprehensive and will only cover new material.

Weekly Chapter Quizzes: Each week you will take a quiz covering that week's lecture material. We will not have a quiz on the week we take a lecture exam.

Unknown Report: You will be given an unknown bacterial species that you will systematically identify to species based on the lab skills learned this semester. You will submit your findings at the end of the semester in a report. More details will be given in lab.

Misc Assignments: There may be misc assignments given throughout the semester.

Attendance Policy

This is a hybrid class. All lecture material will be conducted online and as such you have the freedom to choose when you engage with course content, however, there are strict deadlines on

when assignments will be due. Lab activities meet in-person on Tuesday/Thursday 3 pm in the new science lab. You are expected and required to attend all in-person labs. This is not a self-paced course and you will have assignments due each week. You must complete assignments on time. No late assignments will be accepted and no extra credit opportunities will be given. In the event of Covid exposures, lab content will be shifted to online until it is safe to return to the classroom.

Academic Integrity and Honor Pledge

As a College of the Redwoods student enrolled in an online class you are expected to conduct yourself with integrity. Please review the [Academic Integrity](https://redwoods.instructure.com/courses/14340/pages/academic-integrity?module_item_id=570554) (https://redwoods.instructure.com/courses/14340/pages/academic-integrity?module_item_id=570554) page and then complete the [Syllabus Quiz](https://redwoods.instructure.com/courses/14340/quizzes/70911?module_item_id=570556) (https://redwoods.instructure.com/courses/14340/quizzes/70911?module_item_id=570556) by Monday, January 24th at midnight.

Information for this Class

Preferred Name in Canvas

Students have the ability to have an alternate first name and pronouns to appear in Canvas. Contact [Admissions & Records](https://www.redwoods.edu/admissions/Forms) (<https://www.redwoods.edu/admissions/Forms>) 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](https://www.redwoods.edu/Portals/28/A.R.Forms.Docs/Miscellaneous/Student%20Information%20Update.pdf) (<https://www.redwoods.edu/Portals/28/A.R.Forms.Docs/Miscellaneous/Student%20Information%20Update.pdf>).

Canvas Information

Please see [Online Orientation Letter](https://redwoods.instructure.com/courses/14340/pages/biol-2-online-orientation-letter) (<https://redwoods.instructure.com/courses/14340/pages/biol-2-online-orientation-letter>) for more information

- Log into Canvas at <https://redwoods.instructure.com> (<https://redwoods.instructure.com/>)
 - Password is your 8 digit birth date
 - For tech help, email its@redwoods.edu (<mailto:its@redwoods.edu>) or call 707-476-4160
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Technology skills, requirements, and support

Please see [Online Orientation Letter \(https://redwoods.instructure.com/courses/14340/pages/biol-2-online-orientation-letter\)](https://redwoods.instructure.com/courses/14340/pages/biol-2-online-orientation-letter) for more information

- Tech equipment and skills are required for student success, and of equal importance as required textbooks and materials.
 - Students can obtain a free [Office 365 license](https://www.redwoods.edu/Services/Office365) [_\(https://www.redwoods.edu/Services/Office365\)](https://www.redwoods.edu/Services/Office365) (includes Word, Excel, PowerPoint and more) with a valid CR email.
 - Before contacting Technical Support please visit the [Online Support Page](http://www.redwoods.edu/online/Help) [_\(http://www.redwoods.edu/online/Help\)](http://www.redwoods.edu/online/Help).
 - For password issues with Canvas, Web Advisor or your mycr.redwoods.edu email, contact its@redwoods.edu [_\(mailto:its@redwoods.edu\)](mailto:its@redwoods.edu) or call 707-476-4160 or 800-641-0400 ext. 4160 between 8:00 A.M. and 4:00 P.M., Monday through Friday.
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Student Support Services

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

- [CR-Online](http://www.redwoods.edu/online) [_\(http://www.redwoods.edu/online\)](http://www.redwoods.edu/online) (Comprehensive information for online students)
- [Library Articles & Databases](https://redwoods.libguides.com/az.php) [_\(https://redwoods.libguides.com/az.php\)](https://redwoods.libguides.com/az.php)
- [Canvas help and tutorials](http://www.redwoods.edu/online/Canvas) [_\(http://www.redwoods.edu/online/Canvas\)](http://www.redwoods.edu/online/Canvas)
- [Online Student Handbook](http://www.redwoods.edu/Portals/72/Documents/Students/CR-OnlineStudentHandbook.pdf) [_\(http://www.redwoods.edu/Portals/72/Documents/Students/CR-OnlineStudentHandbook.pdf\)](http://www.redwoods.edu/Portals/72/Documents/Students/CR-OnlineStudentHandbook.pdf)

[Counseling and Advising](http://www.redwoods.edu/counseling/) [_\(http://www.redwoods.edu/counseling/\)](http://www.redwoods.edu/counseling/) offers academic support and includes academic advising and educational planning

Learning Resource Center includes the following resources for students:

- [Academic Support Center](http://www.redwoods.edu/asc) [_\(http://www.redwoods.edu/asc\)](http://www.redwoods.edu/asc) for instructional support, tutoring, and learning resources.
- [Library Services](https://www.redwoods.edu/library) [_\(https://www.redwoods.edu/library\)](https://www.redwoods.edu/library) to promote information literacy and provide organized information resources.
- Multicultural & Diversity Center
- Math Lab & Drop-in Writing Center

Special programs are also available for eligible students include

- [Extended Opportunity Programs & Services \(EOPS\)](http://www.redwoods.edu/eops) [_\(http://www.redwoods.edu/eops\)](http://www.redwoods.edu/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](https://www.redwoods.edu/trio/eureka) [_ \(https://www.redwoods.edu/trio/eureka\)](https://www.redwoods.edu/trio/eureka) or in [Del Norte](https://www.redwoods.edu/delnorte/TRiO) [_ \(https://www.redwoods.edu/delnorte/TRiO\)](https://www.redwoods.edu/delnorte/TRiO)

- The [Veteran's Resource Center](https://www.redwoods.edu/vets) [_ \(https://www.redwoods.edu/vets\)](https://www.redwoods.edu/vets) 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
 - The [Honors Program](https://www.redwoods.edu/Honors/) [_ \(https://www.redwoods.edu/Honors/\)](https://www.redwoods.edu/Honors/) helps students succeed in transferring to a competitive four-year school.
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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](https://www.cccstudentmentalhealth.org/health-wellness-for-students/) [_ \(https://www.cccstudentmentalhealth.org/health-wellness-for-students/\)](https://www.cccstudentmentalhealth.org/health-wellness-for-students/).
 - [Wellness Central](https://ccconlineed.instructure.com/courses/1895?cf_id=2248) [_ \(https://ccconlineed.instructure.com/courses/1895?cf_id=2248\)](https://ccconlineed.instructure.com/courses/1895?cf_id=2248) 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 [_ \(mailto:counseling@redwoods.edu\)](mailto:counseling@redwoods.edu).
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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> [_ \(https://webadvisor.redwoods.edu\)](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 [_ \(mailto:security@redwoods.edu\)](mailto:security@redwoods.edu) if you have any questions. For more information see the [Redwoods Public Safety Page](https://www.redwoods.edu/publicsafety) [_ \(https://www.redwoods.edu/publicsafety\)](https://www.redwoods.edu/publicsafety).

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.

Course Schedule

Each week new learning topics will be available in the course modules. Topics are arranged by lecture exam (5 topics per exam). Each week will begin on Tuesday and end the following Monday at midnight. This schedule is subject to change with fair notice.

Week	Begin Date Tuesday	End Date Monday	Online Lecture Topic	In-Person Lab Topic Meet on Tues/Thur
1	January 18, 2022	January 24, 2022	Topic 1: Intro to Microbiology Chapter 1	Online Orientation and Introduction to the Course
2	January 25, 2022	January 31, 2022	Topic 2: Cell Theory Chapter 3	Lab 1: Intro to Micro Lab <ul style="list-style-type: none"> EX 1-3: Media Preparation EX 1-4: Aseptic Technique EX 1-5: Colony Isolation
3	February 1, 2022	February 7, 2022	Topic 3: Eukaryotes Chapter 3 & 6	Lab 2: Ubiquity of Microbes, Environmental Growth Conditions <ul style="list-style-type: none"> EX 2-1 : Ubiquity of Microbes EX 2-3: Growth on Slants EX 2-4: Growth in Broth
4	February 8, 2022	February 14, 2022	Topic 4: Pathogens Chapters 5	Lab 3: Staining Techniques <ul style="list-style-type: none"> EX 3-4: Simple Stains EX 3-6: Gram Stain EX 3-8: Capsule Stain EX 3-9: Endospore Stain
5	February 15, 2022	February 21, 2022	Topic 5: Microbial	Lab 4: Environmental Factors Influencing Growth

			Biochemistry Chapters 7 Lecture Exam I (Online)	<ul style="list-style-type: none"> EX 2-6: Fluid https://redwoods.instructure.com/courses/14340/pages/ex-2-6-fluid-thioglycollate-broth Thioglycollate Broth EX 2-7: Anaerobic Jar EX 2-8: The Effect of Temperature on Microbial Growth EX 2-9: The Effect of pH on Microbial Growth
6	February 22, 2022	February 28, 2022	Topic 6: Microbial Metabolism Chapter 8	Lab 5: Differential & Selective Media <ul style="list-style-type: none"> EX 4-1: Phenylethyl Alcohol Agar (PEA) EX 4-3: Mannitol Salt Agar (MSA) EX 4-4: MacConkey Agar (MAC) EX 4-5: Eosin and Methylene Blue Agar (EMB)
7	March 1, 2022	March 7, 2022	Topic 7: Microbial Growth & Bacterial Diversity Chapter 4 & 9	Lab 6: Selective Media I <ul style="list-style-type: none"> EX 5-1: O-F Test EX 5-2: Phenol Red Fermentation Broth EX 5-3: Methyl Red and Voges-Proskauer Tests EX 5-4: Catalase Test EX 5-5: Oxidase Test EX 5-6: Nitrate Reduction Test EX 5-7: Citrate Test
8	March 8, 2022	March 14, 2022	Topic 8: Microbial Genetics Chapter 11	Lab 7: Selective Media II <ul style="list-style-type: none"> EX 5-8: Amino Acid https://redwoods.instructure.com/courses/14340/pages/ex-5-8-amino-acid-decarboxylation-tests Decarboxylation Tests EX 5-9: Deamination Test EX 5-10: Amylase Test EX 5-11: DNase Test EX 5-12: Lipase Test EX 5-13: Casease Test EX 5-14: Gelatinase Test EX 5-15: Urease Test EX 5-16: Bile Esculin Test
9	March 15, 2022	March 21, 2022	Spring Break - No Class	Spring Break - No Class

10	March 22, 2022	March 28, 2022	Topic 9: Molecular Biology Techniques Chapter 12	Lab 8: No in-person lab this week. Online activity
11	March 29, 2022	April 4, 2022	Topic 10: Control of Microbial Growth Chapter 13 Lecture/Lab Exam II (Online)	Lab 9: Selective Media III <ul style="list-style-type: none"> • EX 5-18: Sulfur-Indole Motility (SIM Medium) • EX 5-19: Kligler Iron Agar Test • EX 5-21: Hemolysis Test • EX 5-23: Coagulase Test • EX 5-24: Motility Test
12	April 5, 2022	April 11, 2022	Topic 11: Antimicrobial Drugs Chapter 14	Lab 10: Unknown / Staining Techniques
13	April 12, 2022	April 18, 2022	Topic 12: The Unknown	Lab 11: Unknown / Bergey's Manuals
14	April 19, 2022	April 25, 2022	Topic 13: Antibiotic Resistance / Pathogenicity Chapter 15	Lab 12: Unknown / Kirby-Bauer Method

15	April 26, 2022	May 2, 2022	Topic 14: Disease and Epidemiology / Innate Immunity Chapter 16 & 17	Lab 13: Unknown / Water Quality Testing
16	May 3, 2022	May 9, 2022	Topic 15: Adaptive Immunity Chapter 18	Lab 14: Unknown / Re-do & Make-up tests
17	May 10, 2022	May 13, 2022		<i>Final Lecture/Lab Exam (In-person)</i>