# BIOL-2 Syllabus and Course Schedule

# Syllabus for BIOL-2 (Microbiology)

## Course Information:

- Semester & Year: Fall 2023
- Course ID & Section #: Biol-2 E5559
- Instructor's name: Christopher Callahan
- Day/Time:  Lecture Online; Lab Tuesday and Thursday 6:05-9:15pm
- Location: SC-104
- Number of units: 4.0

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## Instructor Contact Information

- Office location:  SC-216A
- Office hours:  After lab or by appointment
- Phone number: 707-476-4257
- 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: Micriobiology: Laboratory Theory & Application
  - Edition: 3e Brief
  - Autohor: Leboffe, Morton Publishing
  - ISBN: 978-1617314773

## Recommended Materials:

- Lab attire
  - lab coat, scrubs, or other protective clothes
- Personal Protective Equipment (PPE)
  - disposable gloves (latex or nitrile)

- eye protection
- face mask

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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.

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## 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 Practical Exam | 1 exam @ 50 points each | 50 |
| Syllabus Quiz | must be completed by 1/28 | 5 |
| Chapter Quiz | 12 quizzes @ 10 points each | 120 |
| Discussions | 3 @ 10 points each | 30 |
| Lab Activities | 13  activities @ 15 pts each | 195 |
| Antibiotics Activity | | 25 |
| Bergey's Activity | | 25 |
| Parasite Cafe | | 25 |
| Descriptive Chart | | 25 |
| Unknown Report | | 100 |
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| | **Total Points Attainable**: | **900** |

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.

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### 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 an in-person meeting with me.

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## 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)** (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.

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## Admissions deadlines & enrollment policies

Fall 2023 Dates

- *Classes begin: 8/19/23*
- *Last day to add a class: 8/25/23*
- *Last day to drop without a W and receive a refund: 9/1/23*
- *Labor Day Holiday (no class meeting): 9/4/23*
- *Census date: 9/5/23*
- *Last day to petition to graduate or apply for certificate: 10/26/23*
- *Last day for student-initiated W (no refund): 10/27/23*
- *Last day for faculty-initiated W (no refund): 10/27/23*
- *Veterans Day Holiday (no class meeting): 11/10/23*
- *Fall Break (no classes): 11/20/23-11/22/23*
- *Thanksgiving Day Holiday (no class meeting): 11/23/23-11/24/23*
- *Last Day to file P/NP (only courses where this is an option): 12/15/23*
- *Final examinations: 12/9/23-12/15/23*
- *Semester ends: 12/15/23*
- *Grades due: 12/22/23*
- *Grades available for transcript release: approximately: 1/5/24*

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.

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## 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/16931/pages/student-code-of-conduct-and-disciplinary-procedures?module_item_id=800002)** ) 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)** and on the **College of the Redwoods website (https://www.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies)** .

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### 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/16931/pages/student-code-of-conduct-and-disciplinary-procedures?module_item_id=800002)** ) 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)** and on the **College of the Redwoods website (https://www.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies)**

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## Policies for this Class

### Class participation

Lecture and lab are intimately interrelated. Attendance at all lab meetings is mandatory and required.

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

*Lab Exams:* There is one lab exam in the final lab period of the semester.

*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.

*Discussions:* There will be three online discussions to participate in.

*Misc Assignments:* There are 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 Monday/Wednesday 2:50pm-6:00pm in room SC-104. 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.

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### 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/16931/pages/academic-integrity?module_item_id=800003)** page and then complete the **Syllabus Quiz (https://redwoods.instructure.com/courses/16931/quizzes/95530?module_item_id=800005)** by Monday, January 24th at midnight.

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## 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)** 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)** .

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### Canvas Information

Please see **Online Orientation Letter (https://redwoods.instructure.com/courses/16931/pages/biol-2-orientation-letter?module_item_id=800000)** 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/16931/pages/biol-2-orientation-letter?module_item_id=800000) 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) (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) .
- For password issues with Canvas, Web Advisor or your mycr.redwoods.edu email, contact 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 (https://www.redwoods.edu/online) (Comprehensive information for online students)
- Library Articles & Databases (https://redwoods.libguides.com/az.php)
- Canvas help and tutorials (https://webapps.redwoods.edu/tutorial/)
- Online Tutoring Resources (https://redwoods.libguides.com/Tutoring/Online)

Counseling and Advising (https://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 (https://www.redwoods.edu/asc/Testing-at-a-Distance) for instructional support, tutoring, and learning resources.
- Library Services (https://www.redwoods.edu/library) to promote information literacy and provide organized information resources.
- Multicultural & Diversity Center (https://www.redwoods.edu/student-services/Home/Multicultural-and-Equity-Center)
- Student Tech Help (https://www.redwoods.edu/sts)

Special programs are also available for eligible students include

  - **Extended Opportunity Programs & Services (EOPS)** (https://www.redwoods.edu/student-services/Home/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) or in **Del Norte** (https://www.redwoods.edu/delnorte/TRiO)
  - The **Veteran's Resource Center** (https://www.redwoods.edu/student-services/Home/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/) 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.redwoods.edu/student-services/Home/Basic-Needs/Wellness) .
- **Wellness Central** (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) .

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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) 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) if you have any questions. For more information see the **Redwoods Public Safety Page** (https://www.redwoods.edu/about-us/Home/CR-Police-Department) .

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.

### 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 **CR Police Department- Public Safety (https://www.redwoods.edu/about-us/Home/CR-Police-Department)** It is the responsibility of College of the Redwoods to protect life and property from the effects of emergencies 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.

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## 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** | | | | |
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| | Online Lecture Begin Date Monday Tuesday | Online Lecture End Date Monday | Online Lecture Topic (OpenStax Textbook) | |
|---|---|---|---|---|
| 1 | August 22, 2023 | August 28, 2023 | **Topic 1: Intro to Microbiology & Cell Theory**<br>• Chapter 1: An Invisible World (https://openstax.org/books/microbiology/pages/1-introduction)<br>• Chapter 3: The Cell (https://openstax.org/books/microbiology/pages/3-introduction) | Online Orientation<br>**Lab: Intro to Micı**<br>• EX 1-3: Media |
| 2 | August 29, 2023 | September 4, 2023 | **Topic 2: Diversity of Life**<br>• Chapter 4: Prokaryotes (https://openstax.org/books/microbiology/pages/4-introduction)<br>• Chapter 5: Eukaryotes (https://openstax.org/books/microbiology/pages/5-introduction) | **Lab: Micro Techr**<br>• EX 1-4: Asepti<br>• EX 1-5: Colony |
| 3 | September 5, 2023 | September 11, 2023 | **Topic 3: Viruses**<br>• Chapter 6: Acellular Pathogens (https://openstax.org/books/microbiology/pages/6-introduction)<br>**Reduced workload in observance of Labor Day** | **Labor Day Holida**<br>**No Lab Meeting** |
| 4 | September 12, 2023 | September 18, 2023 | **Topic 4: Microscopic World**<br>• Chapter 2: How We See the Invisible World (https://openstax.org/books/microbiology/pages/2-introduction) | **Lab: Microscopy**<br>• EX 3-1: Micros<br>• EX 3-4: Simple<br>• EX 3-10: Motili |

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| | | | • **Chapter 7: Microbial Biochemistry** (https://openstax.org/books/microbiology/pages/7-introduction) | |
| 5 | September 19, 2023 | September 25, 2023 | **Topic 5: Metabolism**<br>• **Chapters 8: Microbial Metabolism** (https://openstax.org/books/microbiology/pages/8-introduction)<br>**Lecture Exam I**<br>***(Online)*** | **Lab: Unknown P**<br>• Unknowns<br>• EX 3-6: Gram<br>• Re-dos |
| 6 | September 26, 2023 | October 2, 2023 | **Topic 6: Microbial Growth**<br>• **Chapter 9: Microbial Growth** (https://openstax.org/books/microbiology/pages/9-introduction)<br>• **Chapter 10: Biochemistry of the Genome** (https://openstax.org/books/microbiology/pages/10-introduction) | **Lab: Environmer**<br>• EX 2-6: Fluid (https://redwoo 2-6-fluid-thiogl<br>• EX 2-7: Anaer<br>• EX 2-8: The E<br>• EX 2-9: The E |
| 7 | October 3, 2023 | October 9, 2023 | **Topic 7: Genetics**<br>• **Chapter 11: Microbial Genetics** (https://openstax.org/books/microbiology/pages/11-introduction)<br>• **Chapter 12: Biotechnology** (https://openstax.org/books/microbiology/pages/12-introduction) | **Lab: Differential**<br>• EX 4-1: Pheny<br>• EX 4-3: Manni<br>• EX 4-4: MacC<br>• EX 4-5: Eosin |

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| 8 | October 10, 2023 | October 16, 2023 | **Topic 8: Treatment Against Microbes**<br>• **Chapter 13: Control of Microbial Growth** (https://openstax.org/books/microbiology/pages/13-introduction)<br>• **Chapter 14: Antimicrobial Drugs** (https://openstax.org/books/microbiology/pages/14-introduction) | **Lab: Selective M**<br>• EX 5-1: O-F Te<br>• EX 5-2: Phenc<br>• EX 5-3: Methy |
| **9** | October 17, 2023 | October 23, 2023 | **Topic 9: Treatment Against Microbes**<br>• **Chapter 15: Pathogenicity** (https://openstax.org/books/microbiology/pages/15-introduction)<br>• **Chapter 16: Disease and Epidemiology** (https://openstax.org/books/microbiology/pages/16-introduction) | **Lab: Selective M**<br>• EX 5-6: Nitrate<br>• EX 5-7: Citrate<br>• EX 5-8: Amino (https://redwoo 5-8-amino-acid Tests<br>• EX 5-9: Deami |
| 10 | October 24, 2023 | October 30, 2023 | **Topic 10: Innate Immunity**<br>• **Chapter 17: Innate Nonspecific Host Defenses** (https://openstax.org/books/microbiology/pages/17-introduction)<br>**Lecture/Lab Exam II**<br>***(Online)*** | **Lab: Selective M**<br>• EX 5-10: Amyl<br>• EX 5-11: DNas<br>• EX 5-12: Lipas<br>• EX 5-13: Case<br>• EX 5-14: Gelat<br>• EX 5-15: Urea<br>• EX 5-16: Bile E |

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| 11 | October 31, 2023 | November 6, 2023 | **Topic 11: Adaptive Immunity and Diseases**<br>• Chapter 18: Adaptive Specific Host Defenses (https://openstax.org/books/microbiology/pages/18-introduction)<br>• Chapter 19: Diseases of the Immune System (https://openstax.org/books/microbiology/pages/19-introduction) | **Lab: Selective M**<br>• EX 5-18: Sulfu<br>• EX 5-19: Kligle<br>• EX 5-21: Hem<br>• EX 5-23: Coag<br>• EX 5-24: Motili |
| 12 | November 7, 2023 | November 13, 2023 | **Topic 12: Immune Response**<br>• Chapter 20: Analysis of Immune Response (https://openstax.org/books/microbiology/pages/20-introduction)<br>**Reduced workload in observance of Veterans Day** | **Lab: Antibiotics**<br>• EX 7-2: Kirby-I<br>• Re-dos |
| 13 | November 14, 2023 | November 20, 2023 | **Topic 13: Diseases by Organ System**<br>• Chapter 21: Skin and Eye Infections (https://openstax.org/books/microbiology/pages/21-introduction)<br>• Chapter 22: Respiratory System Infections (https://openstax.org/books/microbiology/pages/22-introduction) | **Lab: Bergey's Ma**<br>• EX 9-1: Gram<br>• EX 9-2: Gram<br>• EX 9-3: Gram<br>• Flow charts<br>• Dichotomous k<br>• Re-dos |
| **14** | **November 21, 2023** | **November 27, 2023** | **Fall Break & Thanksgiving** | **Fall Break & Tha** |

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| | | | **No Lecture Activities** | **No Lab Meeting** |
| 15 | November 28, 2023 | December 4, 2023 | **Topic 14: Diseases by Organ System**<br>• **Chapter 23: Urogenital System Infections** (https://openstax.org/books/microbiology/pages/23-introduction)<br>• **Chapter 24: Digestive System Infections** (https://openstax.org/books/microbiology/pages/24-introduction) | **Lab: Parasite Cat**<br>• EX 3-3: Eukary<br>• Protozoan Par |
| 16 | December 5, 2023 | December 11, 2023 | **Topic 15: Diseases by Organ System**<br>• **Chapter 25: Circulatory and Lymphatic System Infections** (https://openstax.org/books/microbiology/pages/25-introduction)<br>• **Chapter 26: Nervous System Infections** (https://openstax.org/books/microbiology/pages/26-introduction) | **Lab: Review**<br>**Unknown Papers**<br>**Descriptive Char**<br>**Notebook Check**<br>• All labs for wee |
| 17 | December 12, 2023 | December 15, 2023 | **Final Lecture Exam**<br>***(online)*** | **No Lab Meeting** |