

**Cell Biology: BI 315 and BI 315L**  
Winter 2023, CRNs 20186, 20187, 20188  
Western Oregon University

**CONTACT INFORMATION**

**Dr. Michael J. Baltzley** (he/him/his); [baltzlem@wou.edu](mailto:baltzlem@wou.edu), 503-838-8832

**Office Hours:** M 9:00 – 11:00 a.m., W 12:00 – 1:00 p.m.

**Office:** DeVolder Family Science Center (DFSC) 114

**Zoom:** <https://wou-edu.zoom.us/my/baltzley>

**Jim Dawson** (he/him/his); [dawsonj@wou.edu](mailto:dawsonj@wou.edu), 503-838-8832

**Office Hours:** TBD

**Office:** NS 002

**MEETING TIMES AND LOCATION**

BI 315: NS 103, MWF 11:00 - 11:50 a.m.

BI 315L: NS 202, T 9:00 - 11:50 a.m. or R 9:00 - 11:50 a.m.

- You are required to attend the lab section that you registered for

**REQUIRED MATERIALS**

The primary textbook for the course is *Cell and Molecular Biology*, 4<sup>th</sup> edition, 2020, by Bergtrom, G. This is an open access textbook that you can download from the course Canvas site. We do not have enough time in class to cover the entire book; the sections we will focus on are listed in the course schedule posted on the class Canvas site.

**COURSE DESCRIPTION**

This course is an introduction to the key concepts of cell biology. Among other topics, we will cover protein structure and function, cytoskeleton structure and function, membrane channels, and cellular communication. We will cover techniques important to cell biology—both in lecture and in lab. You will have covered some of these topics and techniques in other classes; hopefully, we will build on your current expertise and expand your knowledge and skill set.

**COURSE GOALS**

1. Master basic concepts of cell structure and function, including metabolism, protein production and processing, membrane functions, and cell motility.
2. Improve your ability to understand scientific literature and communicate scientific results.
  - WOU Undergraduate Learning Outcome #2: Written communication
3. Understand how to analyze data and master the conventions of data presentation.
  - WOU Undergraduate Learning Outcome #1: Quantitative literacy

**CLASS MEETINGS**

Before most class meetings you will need to watch lecture videos or other informational videos. From experience (thanks, COVID!!) I have found that when a 50-minute in-person lecture is converted to a video lecture, the video lecture is ~20-25 minutes long. You should expect to take notes during the video lectures, which will probably require you to pause the video at times and possibly even re-watch sections of the video. And just like with an in-person class, you should budget time outside of the lecture viewing to review your notes regularly.

When we meet in class, we will discuss those videos and/or solve problems related to the video topics. We will also be discussing multiple primary literature articles during course meetings during the term. Attendance and participation in class are vital for succeeding in this course.

## **LAB**

Lab will expose you to techniques that are commonly used in cell biology. There is not a lab manual that you have to purchase, but you will need to bring a hard copy of the lab instructions if you want them. You can also work from an electronic version in lab if you prefer. You are expected to prepare for lab before you attend lab each week. Most labs have an assignment that is due at the end of the lab meeting. However, you will be writing a formal lab report that is due at the end of the term.

If you are going to miss lab due to illness or another emergency, you should first complete a **STUDENT ABSENCE FORM FOUND HERE: [HTTPS://WWW.WOU.EDU/ADVISING/ABSENCE/](https://www.wou.edu/advising/absence/)**. If you are going to miss class because of an excused University activity, please talk to me before the missed lab. We can discuss how you will be able to make-up the lab work.

## **CANVAS SITE**

Videos, worksheets, assignments, exams, etc., will be posted to the class Canvas site. You will have a separate Canvas site for the lab. **IT IS YOUR RESPONSIBILITY TO VISIT THE SITE ON A REGULAR BASIS TO DOWNLOAD MATERIALS AND RECEIVE THE NEEDED INFORMATION.**

## **GENERAL ETIQUETTE**

Use of a computer for note-taking in class is fine, but should not be used for emailing, chatting, surfing, etc., during class. Recreational use of your computer in class is distracting to those around you. Similarly, cell phones should be off during class. If you are using a cell phone during lab, you are distracted from your work and are creating an unsafe working environment. If you cannot ignore your cell phone during lab, do not bring it to lab.

## **EVALUATION AND EXPECTATIONS**

### **Exams**

There will be three exams (50 minutes each). The exams will cover lecture material, lab topics, and assigned readings. The exams will consist primarily of multiple choice and short answer essay questions. The goal of the exams are to evaluate your understanding of the class material, your ability to explain concepts and ideas, and your ability to apply concepts and ideas to new problems.

### **In-Class Assignments**

There will be a variety of in-class exercises based on lecture videos that you will need to watch on-line the day before class. The in-class activities are worth 4 points per class meeting. You can earn up to 50 participation points.

No make-up assignments are available. If you can't make a class meeting, you can still earn your participation points by completing the in-class assignments and submitting them to me. Because I will be posting answer keys the day after class, the in-class assignments must be submitted within 24 hours of the class meeting.

### **Primary literature analysis**

One of our focuses this term will be reading and understanding primary scientific literature. While we usually use textbooks, websites, and review papers to get general, big picture information on scientific

subjects, all of the knowledge in those textbooks, websites, and review papers is based on primary literature. To become a science-literate citizen, you need to be comfortable with primary literature. If you have read this far in the syllabus, email me with the subject line ‘syllabus’ before the start of class on Monday of week one. Everyone who emails me will divide twenty-eight points. For example, if seven people email me, each will receive four points. If two people email me, each will receive fourteen points.

During our lecture meeting time, you will discuss 5 primary literature articles. Before coming to class on these days, you will be expected to read the article and complete a short analysis based on questions I will post on Canvas. **YOUR PRIMARY LITERATURE ANALYSES ARE DUE AT THE BEGINNING OF CLASS.**

Once we have had our class discussion of the article, you cannot submit your analysis. If you are going to miss class for an excused reason, you may submit an analysis **EARLY**. If you miss class because of an emergency, you can have your absence excused by **COMPLETING A STUDENT ABSENCE FORM FOUND HERE: [HTTPS://WWW.WOU.EDU/ADVISING/ABSENCE/](https://www.wou.edu/advising/absence/)**

**One-third of your grade will be based on your pre-meeting individual assignment, and two-thirds will be based on the in-class discussion. Your lowest grade on the primary literature analyses will be dropped.**

### Lab assignments

Some labs will have an assignment that will be completed outside of the lab meeting time, including a formal lab report. In class, you will be working with a lab partner. You may work with lab partners outside of class; however, **ALL WRITING—INCLUDING FIGURE CAPTIONS AND TABLE HEADINGS**—is expected to be done individually.

### Late policy

Deadlines for all assignments are on the course schedule. If you need help or an extension, please talk to me *in advance*. I will accept late assignments, but you will lose up to 10% for each day that an assignment is late, including weekend days. **As noted above, primary literature analysis questions cannot be submitted late.**

### Academic Misconduct

Cheating (e.g. using notes, electronic devices of any kind, copying, or making information available to classmates during an exam) or presenting the work of another person as one’s own (plagiarism) are serious breaches of academic honesty. The work you turn in is expected to be your own, and information from others is expected to be cited appropriately. Please review:

[www.wou.edu/student/residences/pdfs/the\\_code\\_of\\_student\\_responsibility.pdf](http://www.wou.edu/student/residences/pdfs/the_code_of_student_responsibility.pdf)

### Grading

		Letter grades
Exam 1	80	A 93%
Exam 2	80	A- 90%
Exam 3	80	B+ 87%
Primary literature	80	B 83%
In-class assignments	50	B- 80%
Laboratory assignments	90	C+ 77%
Lab paper	80	C 73%
<u>Peer review</u>	<u>20</u>	C- 70%
Total	560	D 60%
		F <60%

BI 315, Winter 2023  
Tentative Class Schedule

Date	Meeting Topic	Chapter (pp.)		Assignments Due
9-Jan	Class introduction and Internship presentation by SLCD		Lab 1: Primary Literature and Excel	
11-Jan	Introduction to cells	Ch. 1 (1-37)		
13-Jan	Organic Chemistry overview	Ch. 2 (41-57)		<b>Jan. 13: Lab 1 Assignment</b>
16-Jan	<b>MLK Day</b>		Lab 2: Lab Skills	
18-Jan	Carbohydrates, Lipids, Nucleic acids	Ch. 2 (57-59)		
20-Jan	Protein structure	Ch. 3 (64-72; 79-84)		<b>Jan. 20: Lab 2 Assignment</b>
23-Jan	Bioenergetics	Ch. 4 (86-98)	Lab 3: Protein Structure—	
25-Jan	Enzymes	Ch. 5 (100-116)	BLAST and PDB study	
27-Jan	<b>Metabolism: No class, lecture video only</b>	Ch. 6 (117-129; 139-143); Ch. 7 (145-151)		<b>Jan. 27: Lab 3 Assignment</b>
30-Jan	Metabolism		Lab 4: Protein structure--	
1-Feb	<b>Paper Discussion #1</b>		Pfam and Dali	<b>Feb. 1: Analysis questions #1</b>
3-FEB	<b>EXAM #1--CLOSES SUNDAY, 11:59 P.M.</b>			
6-Feb	<b>Membranes: No class, lecture video only</b>	Ch. 16 (411-421)	Lab 5: <i>In vitro</i> protein study: Pilot	
8-Feb	Movement across membranes	Ch. 17 (435-445)		
10-Feb	Membrane potentials	Ch. 17 (445-451)		<b>Feb. 10: Lab 4 and 5 Assignments</b>
13-Feb	<b>Paper Discussion #2</b>		Lab 6: <i>In vitro</i> protein study: Experimental Design	<b>Feb. 13: Analysis questions #2</b>
15-Feb	Endomembrane system	Ch. 17 (451-464)		
17-Feb	Extracellular structures	Ch. 17 (468-471)		<b>Feb. 17: Lab 6 Assignment</b>
20-Feb	Cell communication	Ch. 17 (475-481)	Lab 7a: <i>In vitro</i> protein study: Enzyme inhibition	
22-Feb	<b>Paper Discussion #3</b>			<b>Feb. 22: Analysis questions #3</b>
24-FEB	<b>EXAM #2--CLOSES SUNDAY, 11:59 P.M.</b>			
27-Feb	<b>Cytoskeleton: No class, lecture video only</b>	Ch. 18 (485-498)	Lab 7b: <i>In vitro</i> protein study: Enzyme inhibition	
1-Mar	Cytoskeleton and Microtubules			
3-Mar	Microfilaments	Ch. 18 (499-516)		
6-Mar	<b>Paper Discussion #4</b>		Lab 7c: <i>In vitro</i> protein study: Data analysis	<b>Mar. 6: Analysis questions #4</b>
8-Mar	CRISPR	Ch. 13 (313-317)		
10-Mar	Origins of life	Ch. 20 (555-591)		
13-Mar	Microscopy	Ch. 1 (38-39)	Lab 8: <i>In vitro</i> protein study: Isolation by SDS-PAGE and microscopy	<b>Mar. 15: Analysis questions #5</b>
15-Mar	<b>Paper Discussion #5</b>			<b>Mar. 16: Lab 8 Assignment</b>
17-MAR	<b>EXAM #3--CLOSES WED., 11:59 P.M.</b>			<b>Mar. 17: Enzyme Inhibition Lab Report</b>
22-Mar	<b>Lab Report Peer Reviews</b>			<b>Mar. 22: Lab Report Peer Reviews</b>

## **ADDITIONAL RESOURCES**

### **Disability Services**

WOU values diversity and inclusion; we are committed to fostering full participation for all students. Please notify your instructor if there are aspects of the instruction or design resulting in barriers to your participation.

Disability related accommodations are determined through the Office of Disability Services (ODS). If you, as a student, believe you may be eligible for disability related accommodations please contact ODS, they would be happy to work with you. ODS notifies students and faculty members of approved academic accommodations and coordinates implementation of accommodations.

Academic Programs Services Center (APSC) 405

503-838-8250 (voice)

<https://wou.edu/disabilityservices/>

[ods@wou.edu](mailto:ods@wou.edu)

### **Health Services**

WOU students taking all online classes must opt into the \$150 health service fee to access medical and counseling services at WOU's Student Health and Counseling Center (SHCC). Students taking in-person or hybrid classes will be automatically assessed the above fee and will gain access to SHCC services. For more information, please go to <https://wou.edu/health/> or call the SHCC at (503) 838-8313.

If you experience overwhelming academic stress, difficult life events, or feelings of anxiety or depression, I strongly encourage you to seek support. Remember that getting help is a smart and courageous thing to do – for yourself, for those you care about, and for those who care about you.

- Student Health and Counseling Center ([wou.edu/health](http://wou.edu/health)). Counseling services are free for all WOU students taking at least 1 on-campus credit.
- WOU's Suicide Prevention and Mental Health Promotion program ([wou.edu/mental-health](http://wou.edu/mental-health)).
- For life threatening situations, call 911 or Campus Public Safety ([wou.edu/safety](http://wou.edu/safety)) at (503) 838-9000

Additionally, if a faculty or staff member has concerns about your mental health, they may contact the WOU CARE Team (<https://wou.edu/student/care-team/care-team-information/>) and ask them to reach out to you. The CARE team specializes in helping students who are dealing with issues of bias, trauma, situations involving medical or psychological concerns, and campus emergency situations that directly affect the well-being of students and the campus community at large.

### **Responsible Employee**

As an employee at Western Oregon University, I am required by federal law to report any incident of sexual misconduct. If you wish to talk with me about something that has occurred to you or another student, I must inform university personnel. Reporting this information helps the university to safeguard students and get students the help and support needed. You have the right to maintain your privacy. I will only report what you confide in me. If you would like additional information about sexual misconduct response at WOU, please visit the website at:

<http://www.wou.edu/student/sexualmisconduct-resources/sexual-assault-care/>

**Veterans' Accommodation**

Western Oregon University recognizes that those who are actively serving in the Reserves or National Guard of the United States are required by their military contract to attend mandatory training. If you will be absent due to military orders, I strongly encourage you to communicate that with me as soon as possible so we may discuss alternative arrangements.

**Free Tutoring**

WOU Free Tutoring features peer tutoring from the Math Center, Science Center, Writing Center, Computing Science tutoring, English Tutoring Center (English as a Second Language), and Student Success and Advising (SSA) tutoring (for other general education and introductory major courses as well as study skills tutoring).

Additionally, WOU Free Tutoring includes technology tutoring for academic projects (Digital Media Center), peer coaching for improving leadership and creative problem solving skills (Center for Leadership and Creativity), and advising help for Psychology majors and minors (Psychology Peer Advising).

For more information on how to access these tutoring centers and services, please visit: [wou.edu/freetutoring/](http://wou.edu/freetutoring/).

**Library**

Hamersly Library has a wealth of resources, services, and facilities available to bolster your success, regardless of your local or remote location. Do you need orientation, a full-fledged research consultation, or help between those extremes? Librarians, staff, and your student peers meet you online to provide personalized assistance. Physical and electronic collections of books, articles, and other media support WOU academic programs and students' recreational reading needs. In-library technology, such as a scanner, video & audio production rooms, and computers and printers, is supplemented by the equipment lending program; during the pandemic, we are focused on checking out computing equipment to facilitate online coursework. Print materials and computing equipment can be shipped to a home address or picked up at the library. See [library.wou.edu/coronavirus](http://library.wou.edu/coronavirus) for complete information. Phone/TTY: 503-838-8418.

**Student Success and Advising**

If your faculty member at any point in the term is concerned about your academic progress and ability to succeed in the course, they may make a referral to Student Success and Advising through the Wolf Connection System (WCS). If a referral is created, an Academic Success Advisor from SSA will connect with you via email or telephone to discuss challenges you may be facing and your plan to overcome those obstacles and achieve success. This referral process is in place as a way to support you in this class and not a punishment.

Anytime you want to discuss strategies for academic success, you may schedule an appointment with an Academic Success Advisor by calling 503-838-8428, emailing [studentsuccess@wou.edu](mailto:studentsuccess@wou.edu), or online by logging into the Portal, selecting WCS and selecting Get Advising.

**COVID-19 Information****Up-to-Date COVID-19 Information**

COVID-19 is an ongoing, dynamic situation that may change during any given term, leading to changes in rules and guidance. Find up-to-date information at:

- Western Oregon University: [wou.edu/coronavirus](http://wou.edu/coronavirus)
- Oregon Health Authority: [govstatus.egov.com/OR-OHA-COVID-19](http://govstatus.egov.com/OR-OHA-COVID-19)
- CDC: [www.cdc.gov/coronavirus/2019-ncov](http://www.cdc.gov/coronavirus/2019-ncov)

### **Vaccinations**

All students who take in-person classes or who will spend time on campus are required to be fully vaccinated against the COVID-19 virus or submit an exemption before the start of classes. Please contact the Student Health and Counseling Center (SHCC; 503-838-8313, [health@wou.edu](mailto:health@wou.edu)) if you have questions about how to submit proof of vaccination or claim an exemption. Further instructions can be found on SHCC's website at [www.wou.edu/health](http://www.wou.edu/health).

Vaccination against COVID-19 remains one of the best ways to protect your health and the health of our community. At least one vaccine has now received full approval by the FDA. For more information on COVID-19 vaccines, including how you can get vaccinated, please visit: <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/vaccine-benefits.html>

### **Masks and Face Coverings**

In our community we support and respect everyone, whether they are wearing a mask or not:

- Masks are welcome in all spaces, and free KN95 masks are readily available for anyone who needs or wants one
- We don't make assumptions or judgments about a person's choice to wear a mask (or to not wear one)

We protect those who are vulnerable and take personal responsibility for our choices:

- We stay home when we are sick or don't feel well
- We acknowledge that masks limit the spread of disease
- We get our vaccines and boosters to protect our community: our employees and students have high vaccination and booster rates
- We alert HR (employees) or SHCC (students) when we test positive for COVID-19
- We contact HR (employees) or ODS (students) if we need accommodations

We recommend that people wear masks indoors, regardless of vaccination status. Up-to-date mask requirements can be found here: <https://wou.edu/coronavirus/>

### **What to do if you test positive for COVID-19?**

If you test positive for COVID-19, please complete the "Report Positive COVID Test Results Here" at the bottom of your "My Programs" channel in the Portal. To prevent the spread of COVID-19, it is important for WOU to know about positive tests in our community. For additional information from the Oregon Health Authority, please see this website: <https://govstatus.egov.com/or-oha-covid-19-positive-test>.

### **What to do if you are feeling sick?**

If you are feeling ill, stay home and do not go to class or work. Please call the WOU Student Health and Counseling Center (SHCC; 503-838-8313), or your preferred health care provider if you experience

COVID-19 symptoms, including fever, cough or shortness of breath. Your questions will be answered by phone and if necessary you will be directed to the best medical option, which might be an in-office visit, telemedicine, or a referral to urgent care. It is important that you call first as the SHCC will be working with students who have prior appointments and you may unnecessarily expose other students—or yourself be exposed—to COVID-19.

Your health care provider will also determine whether COVID-19 testing is appropriate based on symptoms and test availability in their area. The Oregon Health Authority has published a COVID-19 test site locator to help people in Oregon find testing sites in their community. The interactive map is available on pages in both English and Spanish and can be toggled into multiple other languages:

- [healthoregon.org/covid19testing](https://healthoregon.org/covid19testing) (English)
- [healthoregon.org/pruebasdecovid19](https://healthoregon.org/pruebasdecovid19) (Spanish)

You may also call the SHCC if you just have questions about possible exposure to COVID-19 or symptoms of COVID-19. Any student eligible for services can call the SHCC whether they live on or off campus.

Any student enrolled in one or more credits for in-person or hybrid courses is automatically assessed the SHCC health fee and is eligible to receive care on campus. Students enrolled only in online classes are not assessed the fee and are therefore not eligible for care; however, if you are in Oregon, you can choose to pay the fee to access SHCC services. The fee is \$150 per term. If you are currently out of state, please call the SHCC to see if you are eligible for services because counselors face restrictions on practicing across state borders. Medical providers can only practice in Oregon.