

BIOL250-Microbiology

Tu, Th 2-3:15 will be online Zoom office hours-optional but encouraged. Sessions will be recorded and made available.

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Objectives and Description

The objective of this course is to build on the knowledge that students have from biology and chemistry, to:

- Introduce the diversity of the microbial world including viruses, bacteria, archaea, and microbial eukaryotes
- Apply biological principles and tools to microbial systems
- Understand tools and concepts used by microbiologists that can provide a foundation for further study

The primary subject areas to be covered include:

- Microbial structures and functions, including metabolism
- Understanding bacterial and viral life cycles
- Diversity of the microbial world
- Roles of microorganisms, including viruses, in disease and other important processes

This course is intended primarily for those early in their study of life science or chemistry. This may include biology or chemistry majors, but also students in disciplines like pre-nursing or agriculture, for whom an understanding of the microbial world is important.

Learning Outcomes: In accordance with UI Learning Outcomes, it is expected that students will:

- Learn & Integrate: Students will apply their previous knowledge of chemistry to biology to gain a basic understanding of microbial life.
- Think & Create: Students will be expected to apply the concepts and approaches learned here to solve future academic and professional problems.
- Communicate: Students will be expected to better communicate with others using the combined languages of chemistry and biology, with an emphasis on microbiology.
- Clarify Purpose & Perspective: It is expected that all students will gain important insights into microbiology as a subject and how this subject relates to their personal goals
- Practice Citizenship: I hope that students will share knowledge with one another and with colleagues both inside and outside class, thereby practicing academic citizenship...including the ability to explain issues associated with important issues like the Covid-19 epidemic to nonscience friends or family.

Text and resources

The associated Blackboard site is an essential resource, including the link to the Pearson Online “Brock and Madigan” which is a classic, and excellent, text. There will be quite a few other resources posted, and I will direct you to those I consider essential as well as some resources that may be primarily for enrichment.

Grading, Exams

There will be weekly quizzes, each worth 10 points. There will also be a course-ending comprehensive final examination worth 50 points. This will mean a total of 200 points. I anticipate a scale of:

180-200=A, 160-179=B, 140-159=C, 120-139=D, below 120=F. I reserve the right to “curve” the course if I feel that class performance justifies this-but no student will receive a grade lower than indicated by this “standard” scale.

Academic Integrity, Civility and Assistance

Academic Integrity: Any cases of cheating, such as giving or receiving assistance during an exam, plagiarism, falsification of records, or similar behavior will be handled according to the Student Code of Conduct, Article II-Academic Honesty (p16-17, Policies & Information of Interest to Students, (2009-10).

University of Idaho Classroom Learning Civility Clause: In any environment in which people gather to learn, it is essential that all members feel as free and safe as possible in their participation. To this end, it is expected that everyone in this course will be treated with mutual respect and civility, with an understanding that all of us (students, instructors, professors, guests, and teaching assistants) will be respectful and civil to one another in discussion, in action, in teaching, and in learning. Should you feel our online classroom interactions do not reflect an environment of civility and respect, you are encouraged to meet with your instructor during office hours to discuss your concern. Additional resources for expression of concern or requesting support include the Dean of Students office and staff (5-6757), the UI Counseling & Testing Center’s confidential services (5-6716), or the UI Office of Human Rights, Access, & Inclusion (5-4285)

CENTER FOR DISABILITY ACCESS AND RESOURCES REASONABLE ACCOMMODATIONS STATEMENT: • Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through the Center for Disability Access and Resources located in the Bruce M. Pitman Center, Suite 127 in order to notify your instructor(s) as soon as possible regarding accommodation(s) needed for the course. • Phone: 208-885-6307 • Email: cdar@uidaho.edu • Website: www.uidaho.edu/current-students/cdar

The proposed schedule of readings, topics, and quizzes will be posted separately

Tentative BIOL250 Schedule

Date	Topic	Reading	Other	Videos	Assignment	Quiz Chapters	Due
25-Aug	Intro, Review		Intro-Mastering	Intro, Intro B, Intro C			
27-Aug	Microbial World	1			Quiz1		31-Aug
1-Sep	Cell Structure & Function	2					
3-Sep	Metabolism	3			Quiz2		7-Sep
8-Sep	Microbial Growth	4					
10-Sep	Microbial Growth	4			Quiz3		14-Sep
15-Sep	DNA replication, Gene Expression	6					
17-Sep	Expression/Regulation	7			Quiz4	6,7	21-Sep
22-Sep	Bacterial developmental biology	8					
24-Sep	Mutation, Gene transfer in bacteria	9			Quiz5	6,7 (my error)	28-Sep
29-Sep	Genomics/Synthetic biology	10					
1-Oct	Biotechnology	12			Quiz6	8,9	5-Oct
6-Oct	Viral Life Cycles	5					
8-Oct	Viral diversity	11			Quiz7	10,12	12-Oct
13-Oct	Phylogeny and Evolution	13					
15-Oct	Metaboic diversity	14			Quiz8		19-Oct
20-Oct	Microbial Diversity	15					
22-Oct	Microbial Diversity	16			Quiz9		26-Oct
27-Oct	Archaea	17					
29-Oct	Eukarya	18			Quiz10		2-Nov
3-Nov	Measuring microbes	19					
5-Nov	Microbes and the Environment	20-22			Quiz11		9-Nov
10-Nov	Symbioses and the Microbiome	23,24					
12-Nov	Microbial infection and pathogenesis	25			Quiz12		16-Nov
17-Nov	Immune system	26,27					
19-Nov	Antimicrobial therapy, vaccines, antibiotics, d	28,29			Quiz13		23-Nov
24-Nov	Fall Break						
26-Nov	Fall Break						
1-Dec	Epidemiology	30					
3-Dec	Bacterial/viral infections	31			Quiz14		9-Dec
8-Dec	Bacterial/viral infections	32					
10-Dec	Bacterial/viral infections	33			Quiz15		15-Dec
15-Dec	Eukaryotic pathogens	34					
17-Dec	Final Exam				Exam		17-Dec