

UCSD BIMM 120: Microbiology Lecture

Lecture Schedule **Summer 2022**

Professor: **Dr. Brooke Pickett**

Professor contact: bpickett@ucsd.edu

Office Hour: T, 1pm via OH zoom link

Quarter start: **6/27/22**

Quarter end: 7/30/22

Overview: A discussion of the structure, growth, physiology, molecular genetics, genomics, ecology, and host-interactions of prokaryotic microorganisms. Please keep in mind that microbiology is a relatively advanced, fast-paced course, so it is imperative to keep up with the material. **This means students should plan on spending two to three hours of studying for every hour of class.** These are still uncertain times, so let's treat each other with patience and understanding. We're in this together, so if you have any issues or concerns, please let me know right away.

COURSE MEETING TIMES

This class is fully remote and synchronous. Please look closely at the following course meeting times and the more detailed schedule in this syllabus. The Zoom links for lecture, discussion section, and all office hours can be found on CANVAS.

Lecture:

Section	Day	Time
All	TuTh	2pm – 4:50pm

Discussion:

Section	Day	Time	IA Name
A01	F	9:00am – 10:50am	Marina
A02	F	11:00am – 12:50pm	Jackie
A03	F	1:00pm – 2:50pm	Marina

IA Information:

IA Name	IA Email	Office Hour
Marina Mochizuki	mayokoya@ucsd.edu	F, 3pm – 4pm
Jackie Zhao	jiz065@ucsd.edu	TBD

COURSE DESCRIPTION

Required Materials: access to CANVAS, access to Zoom, a **working** camera (either on a laptop or phone) for exams – **you will not be allowed to take exams without this, no exceptions.** If you do not have access to a computer, please see UCSD student resources to request a loaner.

Recommended Textbook: “Brock Biology of Microorganisms”, Madigan et al., 16th edition (*the textbook our lecture material is based on*) or “Microbiology: An Introduction”, Tortora et al., 13th edition. I’ve also posted a free textbook on CANVAS - “Microbiology” by OpenStax. The free textbook is not a very in-depth source, but

still provides good information. These books are a very useful resource to supplement lecture material, but they are not required.

Prerequisites: BILD 3 and BIBC 100 or BIBC 102 or CHEM 114A or CHEM 114B and BIMM 100

Lecture Structure: Lecture will be presented via Zoom (<https://zoom.us/>). The most important aspects of the material are presented in lecture. Lecture attendance is expected, as concepts will be presented in a step-wise fashion designed to help you learn the material. Lecture slides are available for download from CANVAS prior to the lectures and lecture recordings will be posted to CANVAS after lecture.

Discussion Section Structure: Discussion sections are an ideal time to ask your IA questions about course material, practice questions, exam preparation, post-exam questions, etc. In general, your IA will go over the 1) main slides from lecture, 2) the answers to practice questions, and 3) answer any other questions you may have. Practice questions will be available on CANVAS before the discussion section. They consist of questions designed to help you understand the material presented in lecture and are not to be turned in or graded. Discussion section attendance is highly recommended, but not mandatory.

DETAILED COURSE SCHEDULE

Below is the **tentative** lecture schedule; i.e. lecture schedule may be a little ahead or behind track as the course progresses. Review sessions are scheduled outside of class time via a Doodle poll and are not mandatory.

Week	Day	Date	Topic
1	T	28-June	Introduction to Microbiology Prokaryotic Cell Structure and Function Prokaryotic Cell Structure and Function (part 2)
	Th	30-June	Prokaryotic Cell Structure and Function (part 3) Microbial Metabolism Molecular Biology and Proteins
2	T	5-July	Molecular Biology and Proteins (part 2) Eukaryotic Microbes - Protists Eukaryotic Microbes - Fungi
	Th	7-July	Exam I (1.5hrs) Eukaryotic Microbes - Fungi (part 2) Vaccines and Antibiotics
3	T	12-July	Microbial Growth and Control Viruses Viruses (part 2)
	Th	14-July	Horizontal Gene Transfer and Epidemiology Major Diseases Major Diseases (part 2)
4	T	19-July	Clinical Microbiology Clinical Microbiology (part 2) Foodborne and Waterborne Diseases
	Th	21-July	Exam II (1.5hrs) Innate Immunity Innate Immunity (part 2)

5	T	26-July	Microbial Ecosystems Microbial Symbioses Frontiers in Microbiology
	Th	28-July	Gut microbiome Frontiers in Microbiology (part 2) Review Session
6	S	30-July (3- 6pm)	Exam III (1.5hrs)

GRADING CRITERIA AND SCALE

The grading scale for the course is standard (see second table below). The course will not be curved and the final grades will not be rounded. For example, this means a grade of 89.9% will not be rounded up to a 90%.

Category	Points
Lecture	300
Exam I	100
Exam II	100
Exam III	100
Discussion Section	30
Study Guide Assignments (3, 10pts)	30
Extra Credit	5
Total for Course	330

Letter	Percent	GPA
A+	96-100	4.0
A	94-95	4.0
A-	90-93	3.7
B+	86-89	3.3
B	84-85	3.0
B-	80-83	2.7
C+	76-79	2.3
C	74-75	2.0
C-	70-73	1.7
D	60-69	1.0
F	<60	0

EXAMS

There will be three exams (see schedule above), none of which are cumulative (yay!). We will have exam reviews before every test, each one will be scheduled via a Doodle poll and will take place outside of lecture hours. I highly suggest either making a study guide or digital flash cards (using the free Anki program – apps.ankiweb.net) after each lecture. This is a fast-paced course, so it is imperative to keep up with the material. None of the exam grades will be dropped and make-up exams will only be given with a doctor's note.

STUDY GUIDE ASSIGNMENTS

Creating study guides out of the lecture slides, is a great way to prepare for the exams. This allows you to study the study guide, rather than going through dozens of lecture slides. During these assignments, you will

each add 10 questions OR 10 answers to a shared study guide for your discussion section (this will be done via Googledocs). Make sure to write your name in parentheses next to whatever questions and answers you write so you get credit for your work. Make sure your answers are correct. To be clear, you could write 6 questions and 4 answers, or 8 questions and 2 answers, or 5 questions and 5 answers, etc. As long as it adds up to 10. We will do this assignment once for each exam (Exam 1, 2, and 3).

EXTRA CREDIT

Extra credit are points given out for doing something above and beyond what is required. There are five points of possible extra credit in this course. Asking for extra credit points beyond this or asking for added points to boost your grade is inappropriate and not in line with the ethics of academia; any requests of this nature will be dismissed.

WEEKLY CHECKLIST

Below is a helpful checklist that students can follow each week to make sure they are up to date on all tasks:

- ☐ Attend remote lecture
- ☐ Complete practice questions
- ☐ Attend remote discussion
- ☐ Submit study guide assignments when they are due
- ☐ Study for tests

COURSE POLICIES

Below you will find the class policies regarding attendance, late assignments, extra credit, accommodations, and cheating.

ATTENDANCE

Lecture/discussion attendance: lecture and discussion attendance are necessary in order to understand the material and assignments. As the course is remote, students who are feeling sick, or who are COVID-positive, can still participate if they are feeling well enough. **If lecture attendance drops precipitously, an attendance portion of the grade will be added to the course.**

Add/drop deadlines: for summer session 1, UC San Diego students must drop the course by **July 8** to avoid a "W". For more information: <http://summersession.ucsd.edu/enroll/dropping-classes.html>.

LATE ASSIGNMENTS

Late assignments are not accepted unless there is a doctor's note, a prior request for accommodations, or existing accommodations. If a student is struggling, it is their responsibility to seek out help and let the professor know of their circumstances before assignments/quizzes are to take place (excepting emergencies). Students cannot ask for accommodations retroactively – this includes asking for an extension for work that has already been due.

COVID-SPECIFIC ACCOMMODATIONS

In light of the stressful environment in which this class will take place, there are accommodations added to this course: discussion section attendance is not mandatory and 5pts of extra credit are available. Students should not expect or ask for quarantine-specific accommodations in addition to these. This course, despite the added hurtles, must be equivalent in rigor and scope as those given in previous semesters.

LEARNING OUTCOMES (LOs)

At the end of the course students will be able to appreciate microbial diversity, understand microbial genetics, microbial metabolism, microbial evolution, how microbes regulate genes, and how microbes interact with the environment.

ACADEMIC INTEGRITY

Honesty is primarily the responsibility of each student. The College considers cheating to be a voluntary act for which there may be a reason, but for which there is no acceptable excuse. It is important to understand that collaborative learning is considered cheating unless specifically allowed for by the professor. The term cheating includes but is not limited to: plagiarism, receiving or knowingly supplying unauthorized information, using unauthorized material or sources, changing an answer after work has been graded and presenting it as improperly graded, illegally accessing confidential information through a computer, taking an examination for another student or having another student take an examination for you, and forging or altering grade documents.

If any act of academic dishonesty is observed, **the professor is required to report it.** The student will **automatically receive a zero** on that test or assignment (the grade received as a result of an academic integrity violation stays calculated into the student's GPA even if the student retakes the class). There will also be an AI Administrative Fee of \$50 (posted to the student account), mandatory AI Training, at least one Disciplinary Action, and possibly other actions per the professional judgement of the Appropriate Administrative Authority (AAA). Discipline may include probation, suspension (from a Quarter to Two Years), or dismissal. Please do not risk your GPA and/or future career by cheating.

RESOURCES FOR STUDENTS

If a student is struggling, it is **their responsibility to seek out help and let the professor know of their circumstances before assignments/quizzes are to take place** (excluding emergencies). **Students cannot ask for accommodations retroactively.** A complete list of student resources can be found on the CANVAS homepage.

1. **Teaching + Learning Commons** – (<https://commons.ucsd.edu/students/academic%20support.html>)
Made up of six unique, but integrated hubs, The Teaching + Learning Commons provides comprehensive academic support for students. Includes tutoring, writing help, learning strategy workshops, and study groups.
2. **The Writing and Critical Expression Hub** - (<http://commons.ucsd.edu/students/writing/index.html>)
provides support for undergraduates working on course papers, i.e. laboratory reports and the research proposal, as well as other independent writing projects. Writing mentors can help at any stage of the writing process, from brainstorming to final polishing. The Writing and Critical Expression Hub offers: one-on-one writing tutoring by appointment; supportive and in-depth conversations about writing, the writing process, and writing skills; help with every stage in the writing process, walk-in tutoring; and workshops on writing.
3. **Office for Students with Disabilities (OSD)** - (<https://osd.ucsd.edu/>) Assists students with documented disabilities (psychological, psychiatric, learning, attention, chronic health, physical, vision, hearing, brain injury) to provide accommodations in classrooms and labs. OSD is a great resource if you think you may have test anxiety due to an underlying condition that interferes with the ability to learn, focus, or concentrate. In many cases, students are entitled to assistance with test taking, such as extra time to complete a test, testing in a less distracting room or having questions read aloud. Their mission

is to offer quality programs and services that empower students with disabilities to access and engage in educational activities at the College. Please notify your instructor immediately if you require special health or disability accommodations.

4. **Counseling and Psychological Services (CAPS)** - UCSD counseling services are still open during quarantine. This is an amazing resource for coping with anxiety and stress issues. For first-time appointments, you can now go directly to MyStudentChart.ucsd.edu and book an appointment online. The CAPS website is: <https://wellness.ucsd.edu/CAPS/services/Pages/Appointments.aspx>.
5. **The Office for the Prevention of Harassment & Discrimination (OPHD)** - Provides assistance to students, faculty, and staff regarding reports of bias, harassment, and discrimination. OPHD is the UC San Diego Title IX office. Title IX of the Education Amendments of 1972 is the federal law that prohibits sex discrimination in educational institutions that are recipients of federal funds. Students have the right to an educational environment that is free from harassment and discrimination. Students have options for reporting incidents of sexual violence and sexual harassment. Sexual violence includes sexual assault, dating violence, domestic violence, and stalking.

Information about reporting options may be obtained at OPHD at 858-534-8298, ophd@ucsd.edu, or <http://ophd.ucsd.edu>. Students may receive confidential assistance at CARE at the Sexual Assault Resource Center at 858-534-5793, sarc@ucsd.edu, or <http://care.ucsd.edu>, or Counseling and Psychological Services (CAPS) at 858-534-3755 or <http://caps.ucsd.edu>.

Students may feel more comfortable discussing their particular concern with a trusted employee. This may be a student affairs staff member, a faculty member, a department chair, or other university official. These individuals have an obligation to report incidents of sexual violence and sexual harassment to OPHD. This does not necessarily mean that a formal complaint will be filed. If you find yourself in an uncomfortable situation, ask for help. The university is committed to upholding policies regarding nondiscrimination, sexual violence, and sexual harassment.

6. **If you want more micro**, I also teach BIMM121 Micro Lab. There are also all kinds of microbial media (pun intended) out there. Here's a few I like: books about surgery and microbes - The Butchering Art by Lindsey Fitzharris, Dr. Mutter's Marvels by Cristin O'Keefe Aptowicz. Podcast about microbial pathogens - This Podcast Will Kill You on Spotify. Have fun learning about microbes!

OTHER TIPS

Office hours

Office hours are a great resource if you have any questions about the course content. You can also consider office hours to be more like study sessions or free-formed fireside chats, where we can talk about anything related to your academic and general experiences on campus. Stop by for just a few minutes or stay for the entire duration – your choice! Please feel free to email and set up a separate appointment with me if necessary. Office hours with instructional assistants are also available.

College Survival Skills

- Keep a calendar of all exam/assignment due dates and appointments
- Plan on spending two to three hours of studying for every hour of class
- Be on time to class, ask questions when needed, and participate
- Take notes in class and review them often

- Complete all assignments on time
- Take advantage of services on campus to help you succeed such as tutoring
- Arrange for needed accommodations early in the term
- Visit the ACCESS office for assistance, questions, counseling, and class selection – they are here to help
- Plan time to eat, sleep and have some fun
- Attend office hours if you have questions or concerns
- If trouble arises, seek assistance as soon as possible

Coping Skills for Test Anxiety

- Breathing techniques or holding something small to fidget with (like a hair band)
- Reframing thoughts: believing in yourself and remembering this is just one exam
- Doing the hardest questions (like short answer) first so you can relax a little bit
- Studying as you go, instead of all at once
- Studying in a place that is relaxing or familiar
- Making a routine – maybe adding a few questions to a study guide right after each lecture. Routine tends to decrease stress.
- Having breakfast and water (no coffee) right before a test

Self-Advocacy Tips

- Understand my disability and learn ways to compensate
- Learn how to explain my disability and needs to others
- Learn how to ask for appropriate accommodations
- Learn that it is OK to use appropriate accommodations
- Identify my strengths and weaknesses
- Learn that it is OK to ask for help
- Express my needs clearly to all college employees, especially the ACCESS staff and my instructors, early in the term
- Take responsibility and develop independence in coordinating your services
- Meet with instructors when needed

*** This syllabus is subject to change. Any changes will be announced in class and on CANVAS. Students will be responsible for all changes.