

# BIMM 120 - Microbiology- *Spring 2024 edition*

## Course Syllabus\*

\*tentative.

---

Spring 2024 – Lectures, Mondays & Wednesdays, 5:00-6:20 PM in Ledden auditorium (LEDDN).

**Instructor:** Giorgia Pirino, Ph.D.

Email: [gpirino@ucsd.edu](mailto:gpirino@ucsd.edu)

*Please include BIMM120, your full name, ID, and IA name in all emails to Dr. Pirino. Inquiries about course material will not be answered via email.*

Touch-base hours: Tuesdays, from 9 to 10AM via Zoom, starting in week 2.

In week 7, touch base hour will be on Thursday, May 16. Touch-base hours are informal ways to ask questions about the course material or just to chat. I'd love to know all of you!

### **Discussion Sections (remote and synchronous):**

Mondays, 3-3:50PM. IA: Andrew Quach [a6quach@ucsd.edu](mailto:a6quach@ucsd.edu); discussion sections will start in week 2. Andrew's touch-base hours will be communicated later.

UIAs: Twisha Kurlagunda [tkurlagu@ucsd.edu](mailto:tkurlagu@ucsd.edu) and Karmanmeet Singh [kasingh@ucsd.edu](mailto:kasingh@ucsd.edu)

Reader: Ellen Edjihuryan [eedjihuryan@ucsd.edu](mailto:eedjihuryan@ucsd.edu)

**Course description:** This is an introductory course in general microbiology designed for Biology majors. The overall themes of this course are: 1) microbial biology, biochemistry and genetics 2) microbial evolution and diversity, 3) interactions of microorganisms with humans and their environment. **Prerequisites:** BLD1, BILD 3, BIBC 100 or BIBC 102, and BIMM 100.

All lectures will be in person, and recording can be found at <https://podcast.ucsd.edu/>

**Learning goals:** 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.

**Course preparation:** To do well in BIMM 120, students should have a strong background in general biology and organic chemistry. It is assumed that students know basic biochemistry (the major types of molecules found in cells, cell metabolism), as well as basic (introductory) cell biology, molecular biology, genetics, and the importance of scientific method and experimental design. Although this is not a lab course, and no lab skills are required, it is expected that

students know how a general biology research lab functions and how the scientific method is applied to research, based on information acquired in previous courses and scientific publications. Students should review this material before the start of the quarter or during the first week. We will not specifically cover these principles in class because students should already know this material from their prerequisites. Students are responsible for any remedial learning required to understand the material presented in this course. To improve the ability to dissect scientific literature, the assignments of the course will focus on papers' analysis. *Lastly, I suggest you to read the document in Canvas about tips to succeed in this course.*

**Textbook:** There is a *required* textbook and other optional ones.

Required textbook: we will use an online textbook that contains mini-reviews on specific microbiology topics that have been written by experts on the subject. We will use the readings from this textbook throughout the course, in particular for homework. It is available at the cost of \$15 for the whole quarter on the publisher's website.

To access the Veloxsci textbook, navigate to the following website:

[www.veloxsci.com/texts/KE73JQ14-1710887-2-linked](http://www.veloxsci.com/texts/KE73JQ14-1710887-2-linked)

Alternatively, you can do the following:

1. After signing up for a Veloxsci student account, navigate to the "Find a Text" tab.
2. Here, the easiest way to find the correct text is to copy & paste the following code into the "Text ID" box:

**KE73JQ14-1710887-2-linked**

3. Click "Fetch!"
4. Click "Purchase This Text," and complete the payment form.
5. The text can then be accessed by navigating to the "My Texts" page.

Note: if you forget the password to log into the Veloxsci website and you ask to reset your password, the reset link will be automatically sent into the Spam folder of your UCSD email (UCSD quarantine). Every day we received an email from UCSD Spam Quarantine. Open one of those emails, and click on "Manage your account" in the top right of the email message to access the UCSD Quarantine folder.

Optional textbooks: There are other textbooks that you may find useful during the course. "Microbiology, an evolving science", 5th or 6th editions, by Foster & Slonczewski is highly recommended, but not required. In Canvas, you can find a list of the reading for this class from

the online textbook and the Foster & Slonczewski. If you are using a different textbook than this optional one, it is perfectly fine, but make sure that the course topics are covered.

Another textbook you may consider: Todar's Online textbook of Bacteriology

- [http://www.textbookofbacteriology.net/kt\\_toc.html](http://www.textbookofbacteriology.net/kt_toc.html)

**Final grade:** Your final grade will be determined by the following assignments:

- **10%** will be based on homework (20 points)
- **10%** will be based on class participation (20 points)
- **30%** will be based on one Midterm exam (60 points)
- **50%** will be based on a) the Final Exam (50% or 100 points) **or** b) Final Exam (40% or 80 points)  
+ Winogradsky column\*\* (10% or 20 points)

---

Total points available: 200 points (100%)

*Extra credit: there are extra credit opportunities and will be discussed later.*

**Grading scale:** Please assume this class is NOT curved and use the raw score (rounded up to nearest 0.01%) that you receive to calculate your final letter grades.

For example, <60/100 is a F; <70/100 is a D; 70/100 is a 70 or C-; 72/100 is a 72 or C; 77.5/100 is a 77.5 or a C+; 80/100 is an 80 or B-; 82/100 is an 82 or a B; 87.5/100 is an 87.5 or B+; 90/100 is a 90 or A-; 92/100 is a 92 or A.

**Examinations:** We will have 1 midterm exam and 1 final exam: 1) Midterm Exam 1 – Wednesday, May 1, 2024 (week 5); 2) Final Exam - Tuesday, June 11, 2024. Midterm Exams will be held during regular class time. The final Exam will be held in a TBA location. Exams are **not** cumulative, in person, and are closed notes. Assigned readings from the Veloxsci textbook are fair game for the exams.

*Review Section for Final Exam: Wednesday, June 5, from 5PM to 6:20PM in the regular lecture hall.*

**Make-up Exams:** *There are no make-up exams. No exceptions! The exams cannot be rescheduled for any reason. In case of a dire emergency (illness, hospitalization, etc.), please contact the instructor within 24 hours. After review by the instructor, the student may take a different exam as a substitution, which will consist in an oral exam.* If you have a job/graduate

school/medical school interview, schedule it on a non exam day; interviews are not considered dire emergencies. Personal commitments or conflicts with other classes are also not considered dire emergencies.

**Exams:** Exams will consist in a combination of short answer, true/false, fill in the blank, and multiple choice questions. Exams will be graded through Gradescope, thus, your answer will be graded only if it is placed in the appropriate box. Handwriting must be legible; we will not grade answers that cannot be deciphered. Regrade policy for the exams are discussed under the folder “Regrade Policy” in Canvas. Please read the entire regrade policy before submitting a regrade request.

You must bring your **student ID** and a **pen**. No phones, smart watches, or other electronic devices are allowed. ALL personal items must be **CLOSED** and placed in front of the classroom. Make sure your phone is turned **OFF** and put away. Students may not use the restroom during exams.

During the exam: As a general rule, we will not answer questions during exams. However, if you are sure that a question is written ambiguously, raise your hand and ask for clarification. Most ambiguities and problem questions should be identified this way, so that clarifications can be announced to the entire class and so that the grading rubric can be modified before the exams are graded. Exams will use scientific language, make sure that you are familiar with scientific terms. IAs cannot define scientific words, help you understand a question, or confirm that you have chosen the correct answer.

**Lectures:** Lectures are *not* mandatory, even though students may earn points if they attend. I encourage everyone to attend, since we will do activities to practice for exams. We will also use iClickers during lecture (**physical iClicker remotes**, not iClicker app through the phone).

**Films:** There are two required films posted in the “Films” module in Canvas for you to watch. The films are available for viewing online, streaming from the publisher’s web site or from UCSD library reserves.

Each film is assigned in lieu of a lecture (see the schedule), so you are NOT required to come to class that day.

The films may be accessed by one of the following means:

- directly through the publisher’s web site

- through UCSD library digital reserves for BIMM 120

- 

In order to access UCSD digital reserves, you must be within the UCSD protected network or use a VPN. To connect via VPN, follow the instructions at <https://blink.ucsd.edu/technology/network/connections/off-campus/VPN/index.html#anyconnect> to use the VPN.

How to study the films (courtesy of Dr. Gus): You should take notes when you watch them, and review your notes before the exams. Do NOT worry about exact dates, numbers or statistics in the films. Instead, focus on 1) the biological concepts; 2) stories; 3) history (major events and general time frame); 4) prominent persons; 5) policy issues; 6) causes of controversies; 7) impact of the situations described on individuals and society; 8) arguments of different stake-holders; 9) appropriate and inappropriate responses.

*For each part, or chapter, of the story you should be able to say something intelligent about what the message was. What did the filmmaker want to communicate; what did they want you to get out of the film? What questions would YOU design if you were writing the exam?*

Do NOT wait to the last minute to watch the films, in case there is a technical glitch!

- First film – What’s Living in You? (1 hour). Covered on the midterm.
- Second film – The trouble with antibiotics (1 hour). Covered on the final exam.

### **Class Participation**

Participation in class is very important. The classroom should be active all week, not just during class hours. Student class participation should incorporate responses of their peers, their opinions, pertinent information regarding subjects covered in class, from microbiology topics that students have read, and examples from their experience. The distinguishing feature of a well done class discussion might include an objective and critical analysis of lecture notes, reading assignments and what you have experienced. Class participation points will be assigned via 2 ways: iClickers and class discussion (see below).

#### *iClickers and Class Discussion*

Students will receive points for participating, which implies discussion within their classmates, NOT for giving a correct answer. In the spirit of scholarly discussion, the instructor expects responses and viewpoints that agree and disagree with others as long as they apply to the topic and are respectful. In our learning model, the heart of active learning occurs through discussions

that help students test their ideas, reinforce what they have learned, and share resources with others in the class.

Students **who participate in discussion and iClickers, and are present for at least 75%** of the lectures will receive full credit. Starting the second lecture, all of the lectures, including guest lectures, will earn points, except review sessions and days in which students will watch a film in lieu of a lecture. Students who attend and participate in less than 75% of the lectures, will earn points based on the percentage of lectures attended. **Only physical iClickers (remotes) count for participation; the iClicker phone app will not count.**

Use the [iClicker registration in Canvas](#) to register for BIMM120 iClicker course.

- If you already have an iClicker Student account, **Sign in**, do not create a new account.
- If you do not have an iClicker Student account, **Create** an account using your [ucsd.edu](mailto:ucsd.edu) email.
- Since you will be using an iClicker remote, you do not need to purchase an iClicker subscription. However, **you must register the remote ID in your free iClicker account**, in Canvas. If you have multiple remote IDs registered in your account, **remove any IDs you no longer use**. This will greatly reduce the chance you'll receive the wrong score for class participation.

See: [How to register an iClicker remote in your iClicker Student account](#)

**Discussion sections:** Although *not* mandatory, you are encouraged to take advantage of discussion sections; they represent a great opportunity to ask for clarification and discuss course content. During discussion sections, IA Andrew will review the course material, share tips on how to study for the exams, and provide questions, when appropriate. IAs Twisha and Karmanmeet will help facilitate the interactions during discussion sections.

The midterm exam (see course schedule) will be administered in week 5 of the course. In the discussion section following the exam, IA Andrew will go over the exam. No rubric will be posted, thus, you are recommended to attend.

Discussion sections will be available via Zoom and will be synchronous.

**Homework:** Students enrolled in BIMM120 will complete homework assignments. Homework assignments will be completed via the course website in Canvas (more information will be provided later). Deadlines for all of the assignments for this class are in Pacific Daylight Time.

**All homework assignments submitted one hour after the deadline will receive a penalty. Any submission submitted after the first hour past the deadline and by 5PM of the next day will lose 50% of the points. No assignment will be accepted after 5PM of the next day past the deadline.**

**Note on homework** :Homework assignments will be open-book, open-notes and will be graded for completion. However, since some of the questions will appear on the exams, I strongly recommend that you do not collaborate with anyone else. Answers will not be posted because they can be found in the *Veloxsci* textbook.

**Regrade Requests:** All regrade requests should be submitted in writing (by email to Dr. Pirino) *within 5 days* of receiving the graded material (aka, the day that scores are posted on Canvas or midterm exams are brought to discussion) with an *explanation of why their assignment requires a regrade*. More details will be provided. Regrades are handled by Dr. Pirino and are final.

**\*\*Winogradsky column:** Students will have the opportunity to conduct a hands-on assignment during the course, whose credit (10%) may substitute 10% of the weight of their final exam. More details will be provided in lecture. *It is an optional, all of nothing assignment.*

**Scientific articles:** We will read several articles throughout the course and they are fair game for the exams, unless otherwise stated . As you read the scientific papers, focus on the big picture and look for the following points:

1. What were the main goals this paper? What was the research question of the study? What was/were the hypothesis/es?
2. What experiments were performed to test the hypothesis/es?
3. Did the results confirm or refute the hypothesis/es?
4. What do the figures/table communicate?
5. What were the main conclusions of the paper?

If there is something that you do not understand, skip it temporarily, you can return to it later.

Useful resource: <https://youtu.be/t2K6mJkSWoA>

**Statement on Office for Students with Disabilities (OSD):** To receive accommodation, students must present or email their “Authorization for Accommodation” (AFA) form provided by the Office for Students with Disabilities (OSD) to the instructor.

*Considering that students will complete homework assignments from home and guidelines and needed data will be available for several weeks, no extra time will be given.*

*For the midterm exams, exams must start at the same time as the rest of the class (5PM) and must be taken in person. Same policy applies to the final exam, which will start at 11:30AM. No exceptions!*

**Discrimination and Harassment:** The University of California, in accordance with applicable federal and state laws and university policies, does not discriminate on the basis of race, color, national origin, religion, sex, gender, gender identity, gender expression, pregnancy (including pregnancy, childbirth, and medical conditions related to pregnancy or childbirth), physical or mental disability, medical condition, genetic information, ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (including membership, application for membership, performance of service, application for service, or obligation for service in the uniformed services). The University also prohibits harassment based on these protected categories, including sexual harassment, as well as sexual assault, domestic violence, dating violence, and stalking. The nondiscrimination policy covers admission, access, and treatment in university programs and activities.

If students have questions about student-related nondiscrimination policies or concerns about possible discrimination or harassment, they should contact the Office for the Prevention of Harassment & Discrimination (OPHD) at (858) 534-8298, <https://ophd.ucsd.edu/> , or <http://ophd.ucsd.edu/report-bias/index.html>

Campus policies provide for a prompt and effective response to student complaints. This response may include alternative resolution procedures or formal investigation. Students will be informed about complaint resolution options. A student who chooses not to report may still contact CARE at the Sexual Assault Resource Center for more information, emotional support, individual and group counseling, and/or assistance with obtaining a medical exam. For off-campus support services, a student may contact the Center for Community Solutions. Other confidential resources on campus include Counseling and Psychological Services, Office of the Ombuds, and Student Health Services.

CARE at the Sexual Assault Resource Center: 858.534.5793 | [sarc@ucsd.edu](mailto:sarc@ucsd.edu) | <https://care.ucsd.edu>

Counseling and Psychological Services (CAPS): 858.534.3755 | <https://caps.ucsd.edu>



**Statement on Academic Integrity:** Integrity of scholarship is essential for an academic community. The University expects that both faculty and students will honor this principle and in so doing protect the validity of University intellectual work. For students, this means that all academic work will be done by the individual to whom it is assigned, without unauthorized aid of any kind. The consequences of being caught cheating can be severe. Information can be found here: <http://www.ucsd.edu/current-students/academics/academic-integrity/index.html>

Students are expected to do their own work, as outlined in the UCSD Policy on Integrity of Scholarship: <http://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2>

Academic misconduct will NOT be tolerated. At discretion of the instructor, students suspected of Academic Integrity (AI) violations on any assignment may be invited to follow-up meetings where they will be asked to justify their answers (before the graded exams or solutions are released), or reported directly for AI violations. Cheaters will receive a failing grade on the assignment, and/or in the course. They may also be suspended from UCSD pursuant to University guidelines.

All class material, such as syllabus, readings, homework, lecture slides, etc. are copyrighted and cannot be posted to websites and/or shared without instructor's approval for any reason.

Students that sell and share course materials not only violates the student code of conduct, but also violates UC's 2005 policy on the Use of Recordings of Course Presentations: <http://copyright.universityofcalifornia.edu/resources/recorded-presentations.html> .

**Academic misconduct includes but is not limited to:**

1. **Cheating**, such as using "crib notes", copying answers from another student, or forge assignments.
2. **Plagiarism**, such as using the writings or ideas of another person, either in whole or in part, without proper attribution to the author or the source. Copying anything from any source is plagiarism if the source is not clearly cited. Plagiarism is stealing someone else's ideas and presenting them as your own.
3. **Collusion**, such as engaging in unauthorized collaboration on exams or assignments, completing for another student any part or the whole of an exam or assignment, or procuring, providing or accepting materials that contain questions or answers to an exam or any assignment to be given at a subsequent time.

**Letters of Recommendation**

I write letters of recommendation only to students who have taken at least two courses with me and have earned an A in both classes.