

# BILD 2: Multicellular Life

UC San Diego – Fall 2023

## Welcome to BILD 2!

BILD 2 is an introduction to the **development and the physiological processes of animals and plants**, from the molecular to the organismal level. The prerequisite is BILD 1 or an equivalent course from another college (see <http://web2.assist.org/web-assist/UCSD.html>).

This section of BILD 2 will have in-person lectures. We know from extensive educational research that people from all sorts of backgrounds learn best when they are actively engaging with the material through thinking, writing, and discussing.<sup>1</sup> We would like to foster that kind of classroom through encouraging regular in-person attendance.

In addition, we know from research on in-person classes that **courses with lots of low-stakes opportunities to explore ideas and get feedback** are generally better for student learning. Therefore, in addition to lectures, we will provide many opportunities for you to think about biology in low-stakes ways. These include **pre-lecture journal assignments, post-lecture discussion section problem sets, and post-lecture weekly quizzes**. You will be able to take the quizzes up to 3 times to get feedback on whether you understood the lecture concepts.

We will also give you many opportunities to **connect with the teaching team and your fellow students**. These include **live and Zoom student hours** by the professor and the IAs and **live discussion sections**. If you cannot make those, there will be a **discussion board on Piazza** ([www.piazza.com](http://www.piazza.com), or linked through Canvas) where you can ask questions of your fellow students, the IAs, and the professor. Finally, the post-lecture comprehension quizzes **will also ask for your feedback for the teaching team**. All of these (except the post-lecture weekly quizzes) will be **optional but highly encouraged**.

As the quarter progresses, we will use your feedback to adjust the course. Please bear with us as we face this challenge together!

<sup>1</sup> Freeman *et al.* 2014. Active learning increases student performance in science, engineering, and mathematics. <http://www.pnas.org/content/111/23/8410> ; Theobald *et al.* 2020. Active learning narrows achievement gaps for under-represented students in undergraduate science, technology, engineering, and math.

<https://www.pnas.org/content/117/12/6476>

<sup>2</sup> Eddy and Hogan. 2017. Getting Under the Hood: How and for Whom Does Increasing Course Structure Work? *CBE-Life Sciences Education*. 13(3): 361. <https://www.lifescied.org/doi/full/10.1187/cbe.14-03-0050>

## How a typical week might look for you: connecting with biology every day

Day	Activities
Monday	Come to lecture. Come to office hours and ask a question.
Tuesday	Do pre-lecture journal for Wednesday's lecture.
Wednesday	Come to lecture. Discuss problem set in section.
Thursday	Complete weekly quiz. Get one question wrong, so immediately re-take it for full credit.
Friday	Come to lecture. Study for next week's exam.
Weekend	Do pre-lecture journal for Monday's lecture.

## Required and Optional Materials

**Required materials:** - iClicker, iClicker+, or iClicker2. *It must be registered on Canvas.* See details below.

**Optional materials:** - *Campbell Biology* (8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, or 11<sup>th</sup> editions).

Lecture slides and all required course readings will be posted on the class website. Some students find the textbook *Campbell Biology*, but it is not mandatory.

## The Basics: Where to Find Lectures, Office hours, and the Discussion Board

**When and where are the lectures?** MWF 2-2:50pm, in Center 115.

**Where are the lecture slides and podcast?**

- Slides will be posted in the Modules on the Canvas site for BILD 2 (go to <https://canvas.ucsd.edu/>).
- A lecture videocast can be found on <https://podcast.ucsd.edu/> and in the Media Gallery on Canvas.

**Where are professor's student hours?**

- **In-person student hours:** Tables in front of Center 113
- **Zoom student hours:** Go to the "Zoom" link on the side and click on the tab "Upcoming Meetings." You can see the Zoom student hours for Prof. Owens and IAs.

**Where are the discussion sections?** Please see the table below. **You may attend any discussion section. Sections start Week 0.**

**Where is the discussion board?** This term we will be using Piazza, which you can access through Canvas or at [www.piazza.com](http://www.piazza.com). We encourage you to post your questions on Piazza so that any of members of the teaching team or other students can answer.

## The Basics: Contact info for the BILD 2 teaching team

**Office hours:** Office hours are to you to get a chance to chat with the professor or IA. You are encouraged to go to anyone's office hours. You do not need to reserve a time in advance; just show up. It is OK to just attend part of an office hour- let the person know if you need to leave early so they can help you first. If these times do not work for you, or if you would like a private meeting, please contact any of us with your availability for a different time.

Name	Email	Role	Office hours time	Office hours locations
<b>Melinda T. Owens</b>	<a href="mailto:mtowens@ucsd.edu">mtowens@ucsd.edu</a>	Assistant Teaching Professor, Neurobio	W 3-3:50pm Th 12-12:50pm	W: Tables outside Center 113; Th: Zoom
<b>Davey Feng</b>	<a href="mailto:cfeng@ucsd.edu">cfeng@ucsd.edu</a>	MS, neuronal development	TBD (to be determined)	TBD (to be determined)
<b>Maureen Dinata</b>	<a href="mailto:mdinata@ucsd.edu">mdinata@ucsd.edu</a>	4 <sup>th</sup> yr, Neurobio	TBD (to be determined)	TBD (to be determined)
<b>Calvin Xiao</b>	<a href="mailto:z4xiao@ucsd.edu">z4xiao@ucsd.edu</a>	3 <sup>rd</sup> yr, Neurobio & Psych	TBD (to be determined)	TBD (to be determined)

Discussion section times: You may go to any section.

Section	Day	Time	Location
<b>B01</b>	M	8:00p-8:50p	MANDE B-150
<b>B02</b>	W	6:00p-6:50p	PETER 102
<b>B03</b>	F	4:00p-4:50p	CENTR 222

### ***The Basics: Enrollment and the Waitlist***

If you are on the waitlist, you may be concerned and frustrated about whether you can enter the class. You may need this course to graduate or be unable to attend the other lecture sections of BILD 2. However, in Biological Sciences, **the instructor has no control over the waitlist or who can enter the course.**

Movement off the waitlist is handled **solely** by the Registrar and is based only on whether people enrolled in **your discussion section** drop the course. If someone does drop, the next person on the waitlist is automatically enrolled. The instructor cannot add more seats or more sections. (Any information online that implies otherwise is either outdated or not applicable to Biological Sciences.) In short, **there is nothing you or the instructor can do to get you off the waitlist and into the class.**

There is usually a great deal of movement in and out of the class in the first week. That said, remember that your waitlist number is the number for your particular discussion section. People in your discussion section must drop before you can get in.

If you are on the waitlist and want to get into the course, we encourage you to complete assignments as if you were enrolled, so that you won't be behind if you do get in. Waitlisted students should all have Canvas access starting from roughly 24hr after you get on the waitlist. That means that being on Canvas does not mean you are enrolled.

Good luck! If it looks like you may not be able to get into the course but you really need to take it, please contact the Virtual Advising Center ([vac.ucsd.edu](http://vac.ucsd.edu)) or another advisor to discuss your options.

### ***What will we learn in BILD 2?***

BILD 2 is an introduction to the development and the physiological processes of animals and plants. In this course, you will deepen your understanding of multicellular organisms, including yourself, by exploring the role of the molecules, cells, tissues, organs, and organ systems that underlie health and disease.

### **Overall Philosophy**

We believe that **learning about biology is inherently empowering.** Your biology coursework should not only be a means to an end like a certain degree or profession. The knowledge you learn should also allow you to **understand situations that might arise in your life** and aid you in **helping the people in your family and community thrive.** In practice, what that means is that we will teach you the basic content knowledge about the physiology of people and other organisms, but then will we ask you to **go beyond memorization to deeply understand** the material and **apply knowledge to new examples.** For example, when we talk about cancer, we might use skin cancer as an example in a problem set but ask you to apply the concepts to liver cancer on an

exam. That way, if someone in your life develops breast cancer, you will ideally already have had practice integrating the fundamental concepts you learned in BILD 2 with information about a particular cancer, which will hopefully allow you to better help them understand their disease and treatment.

We also believe that **everyone can learn biology and be a biology person** and that students are often the best resources in **helping each other grow**. Therefore, we have built in many places where you will engage with your fellow students **as a community of biologists**. Some of you might find such engagement difficult at first. However, it becomes easier with practice. Also, if you go on to have a career that involves biology in some way, for example as a researcher, healthcare professional, or educator, you will spend a great deal of your time communicating about that biology. Through interacting with each other verbally, you can practice the communication and leadership skills you will need in such careers. You will get further opportunities to practice articulating your thoughts about biology in writing through numerous low-stakes assignments.

### High-level Learning Goals

We anticipate you will learn many different things in BILD 2! Because of the way we have designed the course, we anticipate that what you will be able to do by the end of the quarter includes the following:

- **Demonstrate an understanding of the physiology and basic regulatory concepts** related to the function of the organ systems discussed in this course and the mechanisms that allow organisms to carry out those functions.
- **Predict how change** in a molecule, cell, tissue, organ, or organ system (like through a disease or experimental manipulation) **will affect its function** and the function of the organism as a whole.
- **Develop critical thinking skills** to be able to think like a biologist and **solve physiologically-relevant problems**.
- **Increase your understanding of your own learning (metacognition)**, including recognizing what topics are easy or difficult for you to learn, learning what study strategies work best for you, and seeking help from instructors and colleagues at appropriate times.

At the beginning of each unit, we will also provide you with specific biology-related learning outcomes to guide your learning of that material. The problems on the exams will be tied to those specific learning outcomes. All exam questions, as well as nearly all questions for lecture and section, will be tied to at least one of these overall learning outcomes.

### Grading

The activities, requirements, and assignments that comprise this course are designed to **promote your learning and the behaviors that tend to lead to learning**. In addition, these assignments, particularly the Biologist Journal assignments and weekly quizzes, give us valuable information that allows us to adjust the course to better meet your educational needs.

### How Your Letter Grade will be Assigned

Grade assignments will be based on the percentage of total points earned. We do not decide your grade, but rather **you as a student do the learning and the work to earn your grade**.

<u>%</u>	<u>Grade</u>	<u>%</u>	<u>Grade</u>	<u>%</u>	<u>Grade</u>	<u>%</u>	<u>Grade</u>
>98	A+	87-89	B+	77-79	C+	60-69	D
93-98	A	83-86	B	73-76	C	0-59	F
90-92	A-	80-82	B-	70-72	C-		

## How Your Grade will be Calculated

Course Component	Total Points	~% of Grade
<b>Lecture Participation (Attendance and Homework)</b>	<b>275</b>	<b>21%</b>
Lecture attendance (13 @ 5 points each)	65	
More About You survey	10	
Follow-up survey	5	
Pre-lecture Biologist Journals (17 @ 5 points each)	85	
Weekly Quizzes (9 @ 10 points each)	90	
Final Reflection	20	
<b>Section Participation</b>	<b>90</b>	<b>7%</b>
Section participation OR alternate activity (9 @ 10 points)	90	
<b>Exams</b>	<b>960</b>	<b>72%</b>
Midterm with highest score	160	
Midterm with second-highest score	160	
Midterm with third-highest score	160	
Final exam	480	
<b>Professionalism</b>	<b>15</b>	<b>1%</b>
<b>TOTAL</b>	<b>1340</b>	<b>100%</b>

Grades will be posted regularly on Canvas.

### A note on re-grading

We are always happy to communicate with you **to discuss your learning**. If you believe that a grading error has been made, please contact your IA with an explanation of the error. If your IA agrees that an error has occurred, email me with an explanation of the error. **If you think your work deserves more points**, please include in your explanation a concise description of how your answer compares to the rubric and why you think it should have earned more points.

### Explanation of Course Components

The course may seem like a lot of work with all these assignments, but we believe that each of the course components is important for **supporting your learning** and structuring your studying. If it becomes apparent that this is not the case for the majority of students, we reserve the right to alter the course structure to better support you and your learning.

### Lecture attendance

As stated above, **active participation in lecture is important for your learning**. Therefore, every day, we will engage in in-class activities and use **iClickers**. iClicker usage is how we measure lecture participation for points. More importantly, we use the iClicker results to adjust our teaching in real-time to help students understand the material. **If you cannot afford or obtain an iClicker, contact us.**

For your iClicker to correctly be associated with your name, **you must register your clicker** on iclicker.com. To do that, make an iClicker student account on <https://student.iclicker.com/#/login> (if you haven't already) and register your remote's ID on your iClicker student account.

You can re-use clickers for multiple courses and multiple quarters. You can also use a used clicker from someone else. You can even share an iClicker with someone in another class, but you cannot share with someone else who is also in this class. Please be aware that it is dishonest and does not represent your learning if someone else uses your iClicker in class when you are not there, so in that situation we cannot give participation points to you or the person using your iClicker.

We will start counting iClicker participation for points starting on the Friday of Week 1. Everyone has different circumstances and life events, and sometimes iClickers are forgotten or run out of battery (although, the professor usually has extra batteries to lend out). Therefore, to get full attendance points, you only need to attend and click in during 13 lectures (out of 25 total), which allows you to miss 3 weeks (9 class sessions) of class after the first week. **If you feel sick, we encourage you to use these dropped lectures and stay home.**

*If you believe that you might have a situation or condition that will cause you to miss more than 3 weeks of lectures, please contact us right away, so we can strategize about accommodations.*

### Pre-lecture Biologist Journals

Before most classes, there will be an assignment called a **Biologist Journal** posted on Canvas. The main purpose of these assignments is to **prepare you for class** by allow you to **reflect on what you already know**, do some **pre-reading**, and **connect the material to the real world**. We also read them to better understand what our students know and think about the topic beforehand to adjust our teaching.

Each Biologist Journal is different, but each one involves **writing to a specific prompt**. They are **graded solely on being turned in on time and for meeting the word count** by writing on topic, **not for correctness** or writing style. That is because Journals are about your *pre-class ideas*, so we do not penalize you if the words are awkward or if the ideas are not correct. Reading more about the topic online is a great idea, but ultimately, the Journals are about **exploring your own ideas and thoughts about the topic**. So, we expect you to **use your own words when writing these Journals**. (Please see the section on Academic Integrity for more about that.)

Biologist Journal prompts will be posted on Canvas at least several days before they are due. They will be due on twice a week **at 11:50pm the night before lecture**.

You can submit 85% of Biologist Journals (17/20) and still receive full credit, as the lowest three Journal scores are dropped.

### Post-lecture Weekly Quizzes

Every week, there will be a **post-lecture weekly quiz posted on Canvas** that covers the material from that week to help you check your understanding. It will be multiple-choice. Some of the questions on the quiz will be fairly basic to make sure that you understood the basic ideas from the lecture. Other will be exam-level questions that test application of fundamental knowledge. Quizzes will be graded on correctness, but we will allow you **3 attempts** to get full credit. After each attempt, we will give feedback on incorrect answers.

In addition, we will ask between 1-4 optional ungraded open-ended questions that allow you to give feedback to us about your experiences in the course.

Completion of at least 85% of quizzes (9/10) will give you full credit, as the lowest quiz score will be dropped.



## Final Reflection

A final reflection on your experiences in this course is due at the end of the quarter on the **Saturday night after finals week at 11:50pm**. The prompt for this reflection will be: “What did you learn in BILD 2 that will continue to influence you for many years to come? How did you learn these things?”

## Section Attendance Credit

Weekly discussion sections are in person. They are designed to **engage you in applying your knowledge and** exercising your skills in **collaborative problem solving**. Most weeks, we will have a **problem set** with questions that are at the level of exam questions (and are often from previous years’ exams). Problem sets will be posted several days before section. **Everyone should try to complete the problem set** before section, for your own learning.

**To promote collaboration and community, we highly encourage everyone to attend section each week.** However, we acknowledge that not everyone might be able to attend section in a given week. Therefore, each week, there are **two options** for getting section participation credit:

- **Attend and participate in section:** You may attend **any section**. In section, you will work with others to collaboratively explain and understand the problem set.
- **Complete an alternate written assignment:** If you cannot attend section, you can complete an alternate written assignment that will also take about an hour. Generally, you will not only have to complete the problem set, you will also have to compare your original responses against the answer key and reflect on your learning process. We reserve the right to grade the alternate written assignment for correctness.

Each week, you can decide whether to attend section or to complete the alternate written assignment, depending on your schedule that week. Getting section credit, either through in-person attendance or doing the alternate assignment, at least 85% of the weeks (9/10) will award you full section participation credit, as the lowest score is dropped.

## Exams

To facilitate developing useful knowledge and skills for the long term, tests in this course will focus on **applying knowledge to assess and solve novel problems**. Questions will be multiple choice and short answer. Any material covered in or closely related to each lesson’s learning objectives may be tested.

**Exams will be in-person.** You will handwrite your responses on an exam paper we give you. You may bring **one 8.5”x11” study sheet** to the exam that can be filled, back and front, with your notes (three sheets for the Final Exam). Other than that, you may not use any other aides. You will not need a calculator.

The dates for the exam are in the Course Schedule in the back of this syllabus. **If you need to miss an exam date, please let us know as soon as is reasonable, and we will arrange for a make-up.** The make-up will also be in-person. Make-up exams will be arranged through the Triton Testing Center. To use the Testing Center, please login to the RegisterBlast system with your UCSD login:

<https://www2.registerblast.com/ucsd/Exam/List>. Then, you can schedule a test using their interface.

There will be 4 midterms in this course. They will be given during class time. Midterms are worth 160 points each, and each is 50min long. Your lowest midterm grade will be dropped. If you miss one of the midterms, that will be the midterm dropped.

There is also the Final Exam. It will be given during the times specified on the UCSD Final Exam Schedule: <https://blink.ucsd.edu/instructors/academic-info/exams/schedule.html>. It is worth 480 points, to reflect that it is 3 times the length of a midterm: 180 min long. **Everyone must take the final exam; it cannot be dropped.**

**All exams are cumulative** (except the first exam) to promote long-term retention of knowledge. If you want to remember this material years from now in your career, you first need to remember it until the end of the term.

More details about the exam format will be given closer to the time.

## Professionalism

This portion of the course grade is intended to motivate you to **consider the impact of your actions on your own learning and the learning of others** in the course. Unprofessional interactions consume time yet have no meaningful benefits to you, your fellow students, or the teaching team. If you act unprofessionally in class or at work, your colleagues, instructors, and supervisors may discount you and not invite you for new opportunities that you may or may not be aware of.

**By default, we assume everyone is professional**, so this component is automatically awarded to you at the beginning of the quarter. During the quarter, based on observations by the teaching team, including but not limited to one-on-one interactions, electronic communication, and follow-up conversations on grades, **your professionalism credit may be deducted** in steps of 5pts.

Examples of professional interactions with meaningful benefits:

- Working collaboratively to improve in building knowledge and skills
- Asking questions about course policies or course material to clarify it and facilitate learning
- Clarifying how a response was incomplete or incorrect in order to learn how to correct one's own ideas
- Reporting errors or issues in class, on assignments, or in other course material
- Respectfully giving feedback about the course
- Treating everyone in the class community, including the IAs and other students, with respect

Examples of unprofessional interactions that have no meaningful benefits and thus should be avoided:

- Contributing inequitably to team work in class or in discussion section
- Ignoring directions or requests from the instructional team
- Asking for course credit when such credit would conflict with stated course policies (such as the policy on late assignments), when it would be applied inequitably (such as just for you), or when the instructor has explained that the answer did not earn such credit
- Harassing or bullying the instructional team or other students
- Being disruptive to fellow students in lecture, online, in discussion section, or during exams

## Extra Credit Opportunities

You will have several opportunities for extra credit. Extra credit questions will be offered on each exam to make up for exam points missed. In addition, there are two other opportunities for extra credit:



- 10 points for **meeting with Prof. Owens or an IA during student hours** or another meeting. If the student hours times do not work for you, email us and let us know what times work for you!
- 10 points for **community professionalism**. This can be earned by completing course evaluations and related surveys. If 90% or more of all students complete all CAPEs and other course evaluation surveys in a mature and professional fashion (taking them seriously and providing timely and constructive feedback), 10 points will be awarded to everyone in the course.

Other opportunities may occur as necessary. To be fair, extra credit opportunities are always made available to the entire class, **never to just one student**.

### Late Policy

Because of the size of this class and the fast pace of the material, **we cannot award full points for assignments, quizzes, exams, or anything else submitted late** without our prior agreement. Late assignments will be given half-credit.

Remember that in nearly all cases, you can drop one or two assignments without any impact on your score. For example, you can drop 3 Biologist Journals, 1 Weekly Quiz, 1 Discussion Section Credit, and 1 Midterm. That means if you happen to miss one or turn it in late, or your life is too busy a certain week, it will not negatively impact your course score. Even if you miss the deadline for an assignment, we still highly recommend doing the work at some point to prepare for class and exams.

Exception: **if you have a situation that would require you to miss substantial numbers of assignments, please reach out to us as soon as possible** so we can discuss accommodations.

### BILD 2 Class Culture

BILD 2 is a **community of scientists** trying to increase their understanding of the biological world. The classroom culture is designed to engage you in collaborating and thinking like a scientist.

When people collaborate to work towards a common goal, in this case building our learning in BILD 2, we must **establish shared values** so that everyone understands acceptable ways of working together.

In organizations, these are commonly called codes of conduct or ethics. In this course, we use the following statement, adapted from the International Center for Academic Integrity and Dr. Tricia Bertram Gallant, to explicitly state our values and describe the behaviors that maintain and protect these values.

	As students we will...	As the teaching team we will...
Honesty	<ul style="list-style-type: none"> <li>• Honestly demonstrate your knowledge and abilities according to expectations listed in the syllabus or in relation to specific assignments and exams</li> <li>• Communicate openly without using deception, including citing appropriate sources</li> </ul>	<ul style="list-style-type: none"> <li>• Give you honest feedback on your demonstration of knowledge and abilities on assignments and exams</li> <li>• Communicate openly and honestly about the expectations and standards of the course through the syllabus and in relation to assignments and exams</li> </ul>
Responsibility	<ul style="list-style-type: none"> <li>• Complete assignments on time and in full preparation for class</li> </ul>	<ul style="list-style-type: none"> <li>• Give you timely feedback on your assignments and exams</li> </ul>

	<ul style="list-style-type: none"> <li>• Participate fully and contribute to team learning and activities</li> <li>• Take ownership of your own learning by using course and outside resources, including the BILD 2 team, to clarify confusions and extend your knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Show up to student hours and class on time and be mentally and physically present</li> <li>• Create relevant assessments and class activities</li> <li>• Providing selected resources and a helpful environment to help you address your confusions and extend your knowledge</li> </ul>
<b>Respect</b>	<ul style="list-style-type: none"> <li>• Speak openly with one another while respecting diverse viewpoints and perspectives</li> <li>• Provide sufficient space for others to voice their ideas</li> </ul>	<ul style="list-style-type: none"> <li>• Respect your perspectives even while we challenge you to think more deeply and critically</li> <li>• Help facilitate respectful exchange of ideas</li> </ul>
<b>Inclusion</b>	<ul style="list-style-type: none"> <li>• Address one another using their preferred names and pronouns</li> <li>• Be respectful of each other's identities</li> <li>• Help include other people around us when doing group work and discussions</li> </ul>	<ul style="list-style-type: none"> <li>• Address students using their preferred names and pronouns</li> <li>• Be respectful of student identities</li> <li>• Design course material and assignments to include individuals from many different backgrounds</li> </ul>
<b>Fairness</b>	<ul style="list-style-type: none"> <li>• Contribute fully and equally to collaborative work, so that we are not freeloading off of others on our teams</li> <li>• Not seek unfair advantage over fellow students in the course</li> </ul>	<ul style="list-style-type: none"> <li>• Create fair assignments and exams and grade them in a fair and timely manner</li> <li>• Treat all students and collaborative teams equitably</li> </ul>
<b>Trustworthiness</b>	<ul style="list-style-type: none"> <li>• Be open and transparent about what we are doing in class</li> <li>• Not distribute course materials to others in an unauthorized fashion</li> </ul>	<ul style="list-style-type: none"> <li>• Be available to all students when we say we will be</li> <li>• Follow through on our promises</li> <li>• Not modify the expectations or standards without communicating with everyone in the course</li> </ul>
<b>Courage</b>	<ul style="list-style-type: none"> <li>• Say or do something when we see actions that undermine any of the above values</li> <li>• Accept the consequences of upholding and protecting the above values</li> </ul>	<ul style="list-style-type: none"> <li>• Say or do something when we see actions that undermine any of the above values</li> <li>• Accept the consequences of upholding and protecting the above values</li> </ul>

### Diversity, Equity, and Inclusion

We believe very strongly that **biology is for everyone**, including those who have been excluded from it in the past, and that biology knowledge **can help us achieve a healthier, more just, and more equitable society**, even if it has not always been used that way. We want our classroom to be a place where everyone can expand their knowledge and experiences safely, while being respected and valued. Thus, we support the values of UC San Diego to “create a diverse, equitable, and inclusive campus in which students, faculty, and staff can thrive” and strive to uphold the values articulated by the Office of the Vice Chancellor for Diversity, Equity, and Inclusion: “We believe that true excellence is achieved through productive relationships among people of diverse perspectives. When the collective talents of our students, faculty, and staff at UC San Diego are united

in an environment that is open and inclusive, creativity and innovation prospers.” We invite you to join us in creating a class that upholds these values to further enhance our learning as a community.

### Land acknowledgement

We hold great respect for the land and the original people of the area where our campus is located. UCSD is built on the unceded territory of the Kumeyaay Nation. Today, the Kumeyaay people continue to maintain their political sovereignty and cultural traditions as vital members of the San Diego community. We support efforts to redress the forcible taking of land and other injustices against the Kumeyaay and other indigenous peoples. If you are a California resident who is a member of a Native American or Alaska Native tribe, you may be eligible for a full-tuition scholarship from the UC Native American Opportunity Plan or another scholarship fund. To learn more, please visit: <https://admission.universityofcalifornia.edu/tuition-financial-aid/types-of-aid/native-american-opportunity-plan.html>

### Course Policies

#### Students with Disabilities

If you have a disability, **including mental health issues**, that might affect your attendance or performance in this course, please contact us early in the quarter to work out reasonable accommodations to support your success. To ensure fairness and proper support, anyone who requests accommodations because of a disability must get a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD). To contact OSD, use the student portal: <https://academicaffairs.ucsd.edu/sso/osdsp/home>, email the Biology OSD liaison at [bioosd@ucsd.edu](mailto:bioosd@ucsd.edu), or call 858-534-4382.

Whenever possible, we strive to use universal designs that are inclusive. If you have feedback on how to make the class more accessible and inclusive, please get in touch!

#### Podcasts and Lecture Recording

Whenever possible, **classes will be recorded and made available online** as a resource for learning (<http://podcast.ucsd.edu>). However, remember that active participation and contribution are highly encouraged, and many important concepts and ideas will be developed collaboratively by doing in-class activities that cannot be replicated by watching a video.

#### Supplemental Instruction (SI)

The Teaching and Learning Commons supports your learning in BILD 2 through hosting SI study sessions, which give extra practice with the material through doing group problem-solving. Information for SI study sessions can be found at <https://aah.ucsd.edu/supplemental-instruction/si-sg-schedule.html> and below. While we encourage you to participate in SI, participation in an SI session does not substitute for attending a regular discussion section.

Leader: Leo Feng, [j8feng@ucsd.edu](mailto:j8feng@ucsd.edu)

Leader	Day	Time	Location
Leo Feng	Tu	6:30-7:50pm	Zoom: <a href="https://ucsd.zoom.us/j/97744237198">https://ucsd.zoom.us/j/97744237198</a>
Leo Feng	W	10:30-11:50am	In-person, Center Hall 316

## Academic Integrity and Originality

The **integrity of scholarship and learning is fundamental** to creating our classroom community and the academic community at large. The University expects that both students and faculty will honor this principle and in so doing protect the validity of University intellectual work.

We encourage students to study together and to discuss all assignments (besides exams) with each other, as you can all help each other learn. However, all academic work you submit for this course should be **your own new original work**. We emphasize this for several reasons. First, **using your own thoughts and putting things in your own words helps you learn**. There is no better way to discover quickly what you understand and what you don't than to explain a concept to someone else. Second, in professional settings, trying to hide dishonest behavior or pass someone else's words off as your own can lead to trouble. To encourage original thought and writing in this class, we take precautions. For example, Canvas uses Turnitin to scan Biologist Journals for plagiarized materials. **Our goal is not to catch anyone** (although we can't give credit for dishonest work or plagiarized material), **but to help everyone make a habit of using their own thoughts and voice**.

In addition, part of being a good member of a community **is not facilitating dishonest behavior by others**. No course materials, particularly homework and exams, may be posted online, submitted to private or public repositories, or distributed to unauthorized people outside of the course.

If you are ever unsure whether an action is consistent with academic integrity, please ask beforehand. To hold everyone accountable for their actions, any serious suspected instances of a breach of academic integrity will be reported to the Academic Integrity Office for review. For more information on academic integrity, please visit <https://students.ucsd.edu/academics/academic-integrity/index.html>.

## Helpful Resources at UCSD

**If you are experiencing anxiety, depression, or worse, you are not alone.** On top of facing the normal stresses of college, many college students are in their late teens or early twenties, which is when many mental illnesses emerge for the first time because of brain maturation. In addition, you may be experiencing the effects of trauma or violence. Or, you might be one of the 19% of UC students who report not being able to access adequate food<sup>3</sup> or who do not have a safe, stable place to live.

Whatever your situation, whether your problems feel big or small, we encourage you to seek help and support, either from us or from professional resources on campus. Some are listed below.

### *Help and Resources*

#### **Academic Support**

##### **OASIS (<http://oasis.ucsd.edu>)**

The Office of Academic Support & Instructional Services (OASIS) offers math and science tutorial programs for everyone. They also have services and scholarships for those of you who have overcome significant obstacles to become successful.

##### **Teaching + Learning Commons (<http://commons.ucsd.edu>)**

The Teaching + Learning Commons offers tutoring, consultations, and workshops on learning strategies as well as assistance with writing in the Writing + Critical Expression Hub.

### **1<sup>st</sup> Gen Student Success Coaching Program (<https://successcoaching.ucsd.edu/>)**

The 1<sup>st</sup> Gen Student Success Coaching Program offers coaching that addresses academics, skill development, and advocacy for those of you who are in the first generation in your family to go to college.

### **Educational Technology (<https://digitallearning.ucsd.edu/learners/learning-remotely/tools.html>)**

EdTech has resources for understanding educational technologies like Zoom and Canvas.

### **Psychology & Physical Safety\***

#### **CAPS (<http://caps.ucsd.edu>)**

CAPS offers free, confidential counseling. They can help with urgent crises, such as an assault or thoughts of self-harm. They can also talk if you are worried about a friend or classmate. (However, it may take a while to get ongoing services.

#### **CARE at SARC (<http://care.ucsd.edu>)**

Campus Advocacy, Resources, and Education at the Sexual Assault Resource Center (CARE at SARC) offers support for those of you who have experienced sexual violence or violence from a partner. They have free confidential counseling, including on nights and weekends.

### **Basic Needs**

#### **Triton Food Pantry (<http://basicneeds.ucsd.edu/triton-food-pantry/>)**

The Triton Food Pantry discreetly offers food for current UCSD students to ensure each of you has enough nutrition to get through the day.

#### **The Hub (<https://basicneeds.ucsd.edu>)**

The Hub serves those of you who have trouble accessing basic needs, including food or stable housing, or who have financial emergencies. They can help you connect with a variety of on- and off-campus programs, including the Food Pantry, CalFresh, emergency loans, emergency housing, or changes to your financial aid.

### **Other Situations**

#### **Dean of Student Affairs of your College**

Each of UCSD's seven Colleges has a Dean of Student Affairs who can help students in challenging situations. They can pull together campus and outside resources and reach out to instructors and campus resources on your behalf. If you are not exactly sure what you need or how UCSD can help, they are a good place to start. They are also a good place to turn to if you are worried about another student.

It is also important to find a **community of like-minded people around you**. You may be interested in the following resources: APIMEDA Programs & Services ([apimeda.ucsd.edu](http://apimeda.ucsd.edu)), the Black Resource Center ([brc.ucsd.edu](http://brc.ucsd.edu)), the Cross-Cultural Center ([ccc.ucsd.edu](http://ccc.ucsd.edu)), the Intertribal Resource Center ([itrc.ucsd.edu](http://itrc.ucsd.edu)), the LGBT Resource Center ([lgbt.ucsd.edu](http://lgbt.ucsd.edu)), the Raza Resource Centro ([raza.ucsd.edu](http://raza.ucsd.edu)), the Student-Parents Resource page ([students.ucsd.edu/well-being/wellness-resources/student-parents](http://students.ucsd.edu/well-being/wellness-resources/student-parents)), the Student Veterans Resource Center ([students.ucsd.edu/sponsor/veterans](http://students.ucsd.edu/sponsor/veterans)), Undocumented Student Services ([uss.ucsd.edu](http://uss.ucsd.edu)), the Women's Center ([women.ucsd.edu](http://women.ucsd.edu)).

<sup>3</sup> Martinez *et al.* 2016. University of California Global Food Initiative: Student Food Access and Security Study.  
<https://www.ucop.edu/global-food-initiative/best-practices/food-access-security/student-food-access-and-security-study.pdf>

\*Please note that while we on the instructional team are here to support you, instructors are obligated by law to notify UCSD's Title IX coordinator if a student (or any person at UCSD) discloses to us a personal experience of sexual harassment, sex or gender discrimination, domestic violence, or stalking. This is so that the University can properly address the issue. If you do not want your experiences to be reported, please contact CAPS or CARE, which can talk to you confidentially.



## Class Calendar Overview

More specific information will be provided weekly on Canvas. We may adjust the schedule, assignments, and readings as necessary while still focusing on the foundational concepts listed below. The shaded colors below are for purely visual purposes, to separate the weeks.

Date	Guiding Questions	All assignments due at 11:59pm
Class #1 F Sept 29	Welcome! What will be do together in BILD 2? How do I think like a biologist?	
Class #2 M Oct 2	What are the benefits and challenges of multicellular life? (Surface Area to Volume Ratio)	Biologist Journal #1 due <b>before</b> class
Class #3 W Oct 4	What are the basic principles of regulation underlying multicellular life? (Feedback Loops)	Biologist Journal #2 due <b>before</b> class
Class #4 F Oct 6	What are the basic principles of regulation underlying multicellular life? (Homeostasis)	Week 1 Lecture Quiz due <b>before</b> class More About You survey due <b>after</b> class
Class #5 M Oct 9	How does one cell become many? (Development)	Biologist Journal #3 due <b>before</b> class
Class #6 W Oct 11	What happens when multicellularity fails? (Cancer)	Biologist Journal #4 due <b>before</b> class
Class #7 F Oct 13	<b>Midterm 1 (up to and including Development)</b>	Week 2 Lecture Quiz due <b>before</b> class
Class #8 M Oct 16	How do cells in a multicellular organism communicate through electrical signals? (Nervous system)	Biologist Journal #5 due <b>before</b> class
Class #9 W Oct 18	How do cells in a multicellular organism communicate through electrical signals? (Nervous system)	Biologist Journal #6 due <b>before</b> class
Class #10 F Oct 20	How do cells in a multicellular organism communicate through hormones? (Endocrine)	Week 3 Lecture Quiz due <b>before</b> class
Class #11 M Oct 23	How do cells in a multicellular organism communicate through hormones? (Endocrine)	Biologist Journal #7 due <b>before</b> class
Class #12 W Oct 25	How do multicellular organisms reproduce themselves? (Reproduction)	Biologist Journal #8 due <b>before</b> class
Class #13 F Oct 27	<b>Midterm 2 (up to including Endocrine)</b>	Week 4 Lecture Quiz due <b>before</b> class
Class #14 M Oct 30	How do multicellular organisms reproduce themselves? (Reproduction)	Biologist Journal #9 due <b>before</b> class
Class #15 W Nov 1	How do multicellular organisms get food energy to all of their cells? (Nutrition and digestion)	Biologist Journal #10 due <b>before</b> class
Class #16 F Nov 3	How do multicellular organisms get food energy to all of their cells? (Nutrition and digestion)	Week 5 Lecture Quiz due <b>before</b> class
Class #17 M Nov 6	How do multicellular organisms get oxygen to all of their cells? (Respiration)	Biologist Journal #11 due <b>before</b> class
Class #18 W Nov 8	How do multicellular organisms get fluids and nutrients to all of their cells? (Circulation)	Biologist Journal #12 due <b>before</b> class
F Nov 10	Veteran's Day (no class)	Week 6 Lecture Quiz due <b>before</b> today

Class #19 M Nov 13	<b>Midterm 3 (up to and including Respiration)</b>	Biologist Journal #13 due <b>after</b> class (because of exam)
Class #20 W Nov 15	How do multicellular organisms get fluids and nutrients to all of their cells? (Circulation)	Biologist Journal #14 due <b>before</b> class
Class #21 F Nov 17	How do multicellular organisms maintain a stable environment around all their cells? (Renal function)	Week 7 Lecture Quiz due <b>before</b> today
Class #22 M Nov 20	How do multicellular organisms maintain a stable environment around all their cells? (Renal function)	Biologist Journal #15 due <b>before</b> class
Class #23 W Nov 22	How do multicellular organisms detect stimuli? (Sensory systems)	Biologist Journal #16 due <b>before</b> class
F Nov 24	Thanksgiving (no class)	Week 8 Lecture Quiz due <b>after</b> today (due to the holiday)
Class #24 M Nov 27	<b>Midterm 4 (up to and including Renal)</b>	Biologist Journal #17 due <b>after</b> class (due to the exam)
Class #25 W Nov 29	How do multicellular organisms respond to stimuli? (Motor system)	Biologist Journal #18 due <b>before</b> class
Class #26 F Dec 1	How do multicellular organisms respond to stimuli? (Motor system)	Week 9 Lecture Quiz due <b>before</b> class
Class #27 M Dec 4	How do multicellular organisms respond to stimuli through learning? (Behavior)	Biologist Journal #19 due <b>before</b> class
Class #28 W Dec 6	How do multicellular organisms respond to microbial threats? (Immune system)	Biologist Journal #20 due <b>before</b> class
Class #29 F Dec 8	How do multicellular organisms respond to microbial threats? (Immune system)	Week 10 Lecture Quiz due <b>before</b> class
W Dec 13	<b>Final Exam 3-5:59pm (all material)</b>	
Sat Dec 16	Final Reflection due at 11:59pm	