

BILD 10 Fundamental Concepts of Modern Biology
MWF 12:00-12:50PM, Warren Lecture Hall 2001

Contact Information

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Office: York Hall 4070B York Hall, 858-246-1087

Office Hours: Wednesday 1:00PM-2:00PM, Thursday 2:00PM-3:00PM

Website: <https://ted.ucsd.edu>

Course Description

An introduction to the biochemistry and genetics of cells and organisms; illustrations are drawn from microbiology and human biology. Three hours of lecture and one hour of discussion. This course is designed for non-biology students and does not satisfy a lower-division requirement for any biology major. Open to non-biology majors only. Students may not receive credit for BILD 10 after receiving credit for BILD 1.

Course Goals

By the end of this course, you should be able to:

1. Understand, evaluate, collaborate and communicate about biological science and how it impacts your daily life.
2. Learn the basic concepts and techniques necessary to understand the issues currently raised by advances in biology, ranging from ecological issues to stem cell technology
3. Recognize the interdisciplinary nature of biology and the role of economics, politics, sociology, and ethics (among others) in making real-world decisions
4. Learn about the nature of science and how scientists construct and evaluate scientific knowledge

Required Materials

- What is Life? (2nd edition, 2013) Jay Phelan
 - The textbook is on reserve at Geisel Library.
 - Earlier editions may be used, however you are responsible for determining page conversions and identifying any changes in content.
 - There is an excellent free website associated with the text (www.whfreeman.com/phelan2e). I highly recommend taking advantage of this resource, as it includes self-quizzes, animations, and other useful materials.
 - Other textbook-associated resources include PrepU and an ebook version of the text. These are optional, and can be accessed through the website above using an access code that came with your text, or can be purchased separately online.
- iclicker2
 - Note that this is the ONLY version of the iclicker that will be supported this semester.
 - You cannot share an iclicker remote with another student enrolled in this class.

Discussion Sections

Discussion sections will review the week's subject matter or discuss a related article. Sections will begin the week of January 14. Please attend the section of your choice and sign in with your TA. You may attend any or all sections as you choose each week. When a section falls on a holiday, please choose another section to attend that week. Questions about the lecture, reading, videos, and exams will be answered during section. **Your attendance and participation at sections can influence borderline grades at the end of the semester.**

Section	Day/Time	Location	TA
A01	M 1:00-1:50PM	Warren 2208	TBA
A02	M 2:00-2:50PM	Warren 2208	TBA
A03	M 3:00-3:50PM	Warren 2208	TBA
A04	M 4:00-4:50PM	Warren 2208	TBA
A05	M 5:00-5:50PM	Warren 2208	TBA
A06	M 6:00-6:50PM	Warren 2208	TBA
A07	M 7:00-7:50PM	Warren 2208	TBA
A08	M 8:00-8:50PM	Warren 2208	TBA
A09	W 3:00-3:50PM	York 4080A	TBA
A10	W 4:00-4:50PM	York 4080A	TBA
A11	W 5:00-5:50PM	York 4080A	TBA
A12	W 6:00-6:50PM	York 4080A	TBA
A13	W 7:00-7:50PM	York 4080A	TBA

TA Office Hours

All BILD10 TAs have taken and excelled in Biology courses. They are a great resource for the course, so take advantage of their knowledge. You may attend the office hours of any TA. Office hours are posted on the course website.

Films

There will be four required films. They are available for viewing as part of the Digital Reserves (<http://reserves.ucsd.edu/eres/coursepass.aspx?cid=12053>), or in some cases on an external website. For the library Digital Reserves, you must access the films from a campus computer or use a proxy if you are off campus. The password is KR10 (not case-sensitive). If you are having trouble connecting, see <http://libraries.ucsd.edu/services/remote.html> for assistance. The films will also be available on reserve at the Arts Library. However, there is only one copy of each, so

do not assume that they will be available before the exam (as many of your classmates may have the same idea).

Hunting the Elements (2012) - 30 minutes ***This will be covered on Midterm 1***

- NOTE: You are only required to view 3 chapters (*The Periodic Table, Properties of Elements, The Elements of Life*)
- Available for viewing via Digital Reserves or here <http://www.pbs.org/wgbh/nova/physics/hunting-elements.html>

Cracking Your Genetic Code (2012) - 1 hour ***This will be covered on Midterm 2***

- Available for viewing via Digital Reserves or here <http://www.pbs.org/wgbh/nova/body/cracking-your-genetic-code.html>

What Darwin Never Knew (2011) - 2 hours ***This will be covered on Midterm 3***

- Available for viewing via Digital Reserves or here <http://www.pbs.org/wgbh/nova/evolution/darwin-never-knew.html>

Life (2009) - 50 min ***This will be covered on the final exam***

- NOTE: You are only required to view the *Plants* episode
- Available for viewing only via Digital Reserves

Exams

There will be three midterms, each worth 100 points, and one cumulative final exam, worth 200 points. All exams are closed book (no notes). The format of exams will be a combination of multiple choice, true/false, matching, and short answer. Exams are based primarily on lecture material, however you are accountable for all material covered in lecture, required textbook reading, and films.

Midterms will be held during regularly scheduled class times. The final exam is Wednesday March 20 11:30AM-2:30PM. The final exam is comprehensive, and will cover material from the entire course.

If you miss an exam due to an unforeseen and unavoidable emergency (e.g. medical emergency, death in your immediate family), AND you provide official documentation within 1 week of the missed exam, the weight of your missed exam will be transferred to the final. This means if you miss a midterm, your final exam will be worth 300 points. You cannot make up more than one missed exam.

Make-up exams will not be offered for schedule conflicts. This means you should confirm now that you will be able to make all 4 exam times. If you signed up for two classes with identical finals, you'll need to switch into another course to avoid having the conflict.

Regrades

Only exams written in non-erasable pen will be considered for a regrade, and white-out may not be present on such exams. If an error has been made in the grading of your midterm, you may submit it to Dr. Rypien within three days of distribution for a regrade. Do not go to a TA for

a regrade, although you may want to have one of them explain the answer to you before you come to me. Your midterm or final exam must be submitted with a written description of the grading error. I will not entertain discussions of such appeals before they are made in writing. I will consider no more than three "potential" errors per exam. If I think the TA was too generous grading it, I reserve the right to lower your score. Finally, it is critical that you read the key before submitting your regrade. It will be posted on the web site when the graded exams are distributed.

Clickers

You are required to purchase an iclicker2 remote for in-class participation. iclickers are a response system that allows you to answer questions I pose during class. You will be graded on your in-class participation. To receive credit, you need to register your iclicker remote using the link on our Ted course menu. iclickers will be used every day in class. You are responsible for bringing your iclicker daily.

For the first two weeks of class, we will be practicing with the clickers and the points will not count. This is a great opportunity to make sure you know how to use your clicker and your clicker is working properly. I will post the points on Ted so you can check. If you have any problems with your clicker during these first two weeks, I will do whatever I can to help you. Starting January 25 you will receive points for answering clicker questions in lecture. I will assume your clickers are working properly by this time. See the last page of this document (*Clicker Instructions*) for details.

AS Lecture Notes

If there are AS Lecture Notes offered for this course, they will NOT be reviewed by the instructor. Use at your own risk.

Grading

Class points will be distributed as follows:

Midterm Exams (3 x 100 points)	300
Final Exam (200 points)	200
In-class clicker points	50
Total points possible	550

At the end of the semester, the top 5% of the class will be normalized to 100%, and the rest of the grades will be adjusted accordingly. Letter grades will be assigned based on a standard plus/minus scale:

A+	(97-100%)	C+	(77-79.99 %)
A	(93-96.99 %)	C	(73-76.99 %)
A-	(90-92.99 %)	C-	(70-72.99 %)
B+	(87-89.99 %)	D	(60-69.99 %)
B	(83-86.99 %)	F	(< 60%)
B-	(80-82.99 %)		

Special Accommodations

Students requesting accommodations and services due to a disability for this course need to provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD), prior to eligibility for requests. Receipt of AFAs in advance is necessary for appropriate planning for the provision of reasonable accommodations. OSD Academic Liaisons also need to receive current AFAs. For more information, contact the OSD at (858) 534.4382 (V); (858) 534-9709 (TTY); osd@ucsd.edu, or <http://disabilities.ucsd.edu>.

Academic Honesty

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.

Specifically, no student shall

- Knowingly procure, provide, or accept any unauthorized material that contains questions or answers to any examination or assignment to be given at a subsequent time.
- Complete, in part or in total, any examination or assignment for another person.
- Knowingly allow any examination or assignment to be completed, in part or in whole, for himself or herself by another person.
- Plagiarize or copy the work of another person and submit it as his or her own work.
- Employ aids excluded by the instructor in undertaking course work or in completing any exam or assignment.
- Alter graded class assignments or examinations and then resubmit them for regrading.
- Submit substantially the same material in more than one course without prior authorization

Any violation of UCSD's Policy on Integrity of Scholarship procedure will be reported to the Academic Integrity Office. If you do not understand these expectations and authorizations, please speak with the Instructor as soon as possible. Please read the official UCSD policy at <http://students.ucsd.edu/academics/academic-integrity/policy.html>

Administration

See Biology Undergraduate Student Affairs (1st floor Pacific Hall) for adding or dropping this class, or other administrative concerns.

Etiquette for emails and in the classroom

All emails to professors and undergraduate TAs should use proper grammar, include your first and last name in the body of the email, and put BILD10 in the subject line. Do not rely on email as a sure and immediate form of communication with the instructor. The most certain way to get your questions answered is to attend office hours.

You are expected to arrive on time for lecture, turn off cell phones, and respect your colleagues.

BILD 10 Schedule

Date	Lecture #	Topic	Reading*
Unit 1: Science as a way of knowing			
Jan 7	L1	What is biology and why do we study it?	1
Jan 9	L2	The scientific method - making observations & hypotheses	1
Unit 2: The facts of life - From atoms to cells			
Jan 11	L3	Macromolecules and Human Nutrition: Carbohydrates	2
Jan 14	L4	Macromolecules and Human Nutrition: Lipids & Proteins	2
Jan 16	L5	What does our body do with food?	2, 4
Jan 18	L6	The cell	3
Jan 21		NO CLASS - MARTIN LUTHER KING JR. DAY	
Jan 23		MIDTERM 1 (L1 - L6)	
Jan 25	L7	Photosynthesis: Converting energy	4
Unit 3: DNA Fundamentals and applications			
Jan 28	L8	DNA: Structure and function	5
Jan 30	L9	Moving from genes to proteins	5
Feb 1	L10	Applications of DNA technology	5
Feb 4	L11	How can mutations lead to cancer?	6
Feb 6	L12	Cancer and mutations	6
Feb 8	L13	Family resemblance: How traits are inherited	7
Feb 11		MIDTERM 2 (L7 - L13)	
Unit 4: Genetics and evolution			
Feb 13	L14	Evolution by natural selection, Part 1	8
Feb 15	L15	Evolution by natural selection, Part 2	8
Feb 18		NO CLASS - PRESIDENT'S DAY	
Feb 20	L16	Evolution by natural selection, Part 3	8
Feb 22	L17	Diversity of life, Part 1	10
Feb 25	L18	Diversity of life, Part 2	10
Feb 27	L19	Evolution of humans	11
Mar 1	L20	Evolution of microbes	13
Mar 4		MIDTERM 3 (L14 - L19)	
Unit 5: Ecology - Interactions between organisms and their environment			
Mar 6	L21	Organisms and populations	14
Mar 8	L22	Communities and ecosystems, Part 1	15
Mar 11	L23	Communities and ecosystems, Part 2	15
Mar 13	L24	Human impacts, Part 1	16
Mar 15	L25	Human impacts, Part 2	16
Mar 20		FINAL EXAM - 11:30AM-2:30PM (Cumulative)	

Important Dates: Last day to add - Jan 18; Last day to drop without a W - Feb 1; Last day to drop with a W - Mar 8

**Specific reading assignments will be posted on Ted.*

Clicker Instructions

It is your responsibility to have your clicker with you at lecture and to make sure it is working properly. There will be no make-up opportunities for clicker questions, for any reason, nor can you get clicker credit for handing in questions on paper, etc.

Clicker Grading

You will be graded on your in-class participation using iclickers, but NOT on having the correct response, as often I will use these questions to identify confusing topics or poll students.

If you answer

> 80% of clicker questions	you will receive	50 pts
> 60% of clicker questions		40 pts
> 40% of clicker questions		30 pts
> 20% of clicker questions		20 pts

Recommendations

- Bring extra batteries (clickers require 2 AAA batteries)
- Put your name on your clicker
- Cover the ID number on the back with a piece of clear tape to prevent it from rubbing off

Register your clicker

You will register your clicker using the link on our Ted page (on the left hand side of the screen, under the list of Announcements, Syllabus, etc.) If you have used an iclicker2 for a previous class, and registered it through Ted, you do not need to register it again.

NOTE: The instructions that come with your remote ask you to register your iclicker at www.iclicker.com. While you are welcome to do this, it is not necessary. You must register your iclicker through Ted to receive credit for responses during class.

You will not see your clicker points on Ted until you have registered your iclicker. To ensure your clicker is working properly, please register as soon as possible. Every student in this course must have their own iclicker to receive clicker credit. You will not receive any clicker credit until you correctly register your iclicker online.

Using your clicker

Turn your clicker on with the bottom button. I will ask questions, and you will respond by pushing buttons A – E. Please wait until I start the voting before you respond. There will be a timer on the screen when the voting has begun. When your answer has been received, you will see a checkmark at the top of the screen. While the timer is going, you can change your answer as many times as you want. Just press a different button.

You get credit for answering the question, regardless if your answer was correct or incorrect. Like all technologies, clickers sometimes malfunction. This is why I give full clicker credit if you answer 80% of the questions or more. I do not adjust scores in other ways. Do not use the “80% rule” as an opportunity to skip class. Use this only as a safeguard for clicker malfunctions.

Lost clickers

If you lose your clicker mid-quarter and you use a different clicker, you need to change your registration on-line AND you need to email me the following (before the next lecture): a) PID b) your clicker ID

Clicker Troubleshooting

The first 2 weeks of class the clicker points will not count toward your grade. During this time, however, clicker points will be on blackboard as soon as possible after lecture so you can check to see if you are getting the clicker points you deserve. (They will be erased before I tally the final scores.) Some clickers are not functional – this is your time to find that out. I do not adjust scores for malfunctioning clickers. It is your responsibility to use this these first two weeks, when the points do not count, to learn how to use your clicker and to ensure that your clicker is working properly.

If you have problems, go through the troubleshooting guide below. Starting January 25, the clicker points will count, and I will assume all problems have been sorted out.

If you are not getting the points you deserve:

- Be sure you have registered. This means through the link on Ted NOT at www.iclicker.com.
- Make sure you wait until I start the question before you answer - you should see the timer going.
- Make sure you answer BEFORE time has run out. No answer is accepted after the time has ended.
- Every student in this class needs there own clicker – if you are sharing with another student one of you will not get any points.
- Are your batteries are good?

If you have done everything correctly, please come to my office hours. We can check you clicker there. If your clicker is malfunctioning the bookstore will exchange it. I cannot do anything to check your clicker over email, nor can I check it before or after class). It is your responsibility to make sure you are getting the points you deserve. If there is a problem, you need to see me right away so we can resolve the problem for future lectures. I will not give clicker points retroactively.

Tips for Success in BILD 10

- **Come to class** and sit in the front.
 - Print the Powerpoint slides and bring them with you to class. Use these as a template for taking notes (but not a substitute).
- **Review** your notes within 24h of the lecture.
 - Even more effective: rewrite (outline) your notes within 24h of the lecture.
- **Review** the PowerPoint slides in conjunction with your lecture notes.
- **Write** out responses to the learning objectives. Refer to your lecture notes and textbook reading to fully understand the concepts listed for each lecture.
- **Review** vocabulary. Practice writing the definitions. Say the unfamiliar words out loud until they come naturally.
- **Do the reading.** If you bump into material that is too technically challenging, don't get bogged down. Skip it (temporarily). Return to the most difficult material later. Write notes in your book.
- **Outline** the important points as you read, or create concept maps, tables or flow charts. This will help you remember the flow of information and contextualize the details.
- **Study** a little bit every day, or a few times per week. Repetition over time is the key to retaining information. Your goal is to establish new neural pathways in your memory and fire them often! Cramming does not accomplish this.
- **Study** with other students, and choose those who are serious about academics.
- **Use the study aids** in your book, on the course website, and Prep U.
- **Go** to your discussion section. The material discussed will be on the exams.
- **Go** to the office hours of the TA and the instructor. This will encourage you to review the material, in order to have questions to discuss.
- **Go** to the review sessions.
- **Prioritize** your studying if you run out of time: 1. Lecture notes, 2. Other materials
- If you are having academic difficulty, OASIS can help. They provide tutoring, as well as classes in study skills and time management. <http://oasis.ucsd.edu/>
- If you are having personal difficulties, do not hesitate to seek help at Psychological and Counseling Services (which is free to students). They can help you get over many types of hurdles. psychservices.ucsd.edu/resources_students_web/resources_students.html