

**BILD 3: Organismic and Evolutionary Biology (Introduction to Ecology and Evolution)
Spring 2017, TTH 8:00 to 9:20 AM, Price Center Theater**

Professor contact information

Dr. Carolyn Kurle (ckurle@ucsd.edu), Muir Biology Building, Room 4218, Office hour: Tuesday, 10:00 to 11:00 am

Head Instructional Assistant (IA) contact information

Elizabeth Hetherington (ehetheri@ucsd.edu), Muir Biology Building, Room 4268

Please contact your own IA or the head IA via email, for general inquiries. On all emails, **please put BILD 3 in the subject line** to indicate your email is about this course. Because there are hundreds of students in this course, **we cannot answer individual questions about course content and these emails will be deleted.** Attend lectures, discussion sections, IA and professor office hours, use Piazza (see below), and talk to your fellow students to get answers to individual questions. Or ask during lecture! I love questions during lecture.

Please be judicious in contacting me. There are ~450 of you and, while I value all of my students (really!), if you all contacted me with trivialities, I would drown in emails. Thank you for understanding. That said, the best way to contact me is via email or come to my office hours. I love meeting you, so I highly encourage you to seek me out and make a connection.

Description: BILD 3 is an introduction to the fields within biology known as ecology and evolution. Ecology is the study of the relationships between living organisms and their environment. To best understand why there are so many kinds of living things and their myriad of complex interactions, we will study evolution and evolutionary processes. We will also focus on organismal diversity, conservation, and the importance of a general understanding of these topics within biology to be better stewards of the earth's living things and habitats. We will discuss human impacts on global climate, species extinctions, and environmental alterations. Lastly, it's my goal to introduce you to topics I love so you might take a sharper interest in the natural world and have a greater tendency toward becoming a more conservation-minded citizen.

Websites: Lecture notes: tritoned.ucsd.edu; Video Podcast: podcast.ucsd.edu; Piazza for questions for and interactions with other students and IAs: Sign up for Piazza here: piazza.com/ucsd/spring2017/bild3; Link to our Piazza course page: piazza.com/ucsd/spring2017/bild3/home

Grading: 100 Points: Midterm 1

200 Points: Final (cumulative)

25 Points: Clicker participation in lecture (see below)

20 Points: Quizzes (4, 5 pt quizzes given in discussion sections)

18 Points: Participation and Attitude (2 pts per required discussion section)

363: Total graded points available

10 Points: Extra credit points available. Details announced after the midterm.

Textbook: Campbell Biology, 9th edition or Campbell Biology in Focus (**NOT REQUIRED**). We will cover material from certain chapters in these books, but you are NOT required to buy either book. Feel free to use either book if you want clarification on a topic, but I will NOT test on material in either book. If you want further reading and don't want to buy this book, almost everything I discuss can be found for free in more detail online (just Google a topic). The publisher of Campbell Biology offers various supplemental materials including a CD, a web site called Mastering Biology, and a book of exercises. These

supplemental materials may be useful to you, but they are NOT required. Used copies may be available online or at the bookstore. You may also find copies at a website called UCSD.PostYourBook.com. Several copies of the texts are on reserve at Geisel Library. Older versions of Campbell Biology could also be helpful to you. I will use figures from and refer to chapter numbers from the 9th edition. Previous editions are similar, but not identical, and could still be a good resource.

iclicker: See the last pages of the syllabus for all details on clickers.

We will be using clickers in class. This is a response system that allows you to answer questions I pose in 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 TritonEd course menu. iclickers will be used during every lecture. Older versions of the iclicker can be used as long as the remote ID can be read and the remote can be registered on TritonEd. You cannot share an iclicker remote with another student enrolled in this class (but you can share with someone who is not in our class).

My philosophy on iclickers is that it's a way for us to interact - both with me and with your fellow students - during lecture. It helps me understand if you are understanding, it allows for discussion, connection, and further clarity on topics. Research clearly shows that students do better with some degree of interactive learning, so this is how I try and achieve that when there are hundreds of you.

Any students found to be clicking in for classmates who are not in lecture, or if someone else is clicking for you when you are not in lecture, will get an automatic zero for ALL clicker points. This is considered cheating and will be reported to the Academic Integrity Office (see below; **cheating sucks**).

Piazza: We will be using Piazza for answering questions or discussions of issues related to BILD 3. The system is catered to getting you help fast and efficiently from classmates, the IAs, and sometimes myself. Rather than emailing questions to the teaching staff, post your questions on Piazza. Our page is piazza.com/ucsd/spring2017/bild3/home. Please sign up for and utilize this resource. To sign up, go here: piazza.com/ucsd/spring2017/bild3. If you have problems or feedback for the developers, email team@piazza.com.

Lectures: All material presented in lectures is fair game for the exams. You are adults and it is your choice to attend lecture, but you will be responsible for the material whether you choose to attend or not. Do not expect to skip lectures and still do well in the course. Lecture notes will be posted on triton.ed.ucsd.edu before each lecture, but these notes are, at best, outlines, and essential material will be presented in class that does not appear on web-posted notes or in the textbook. Lectures will also be posted as a video podcast within 24 hours after each class time and can be accessed at <http://podcast.ucsd.edu>.

Discussion sections: Instructional Assistant (IA)-led discussion sections **are strongly recommended** and you must sign up for and attend a discussion section. Of course, this is college, so nothing is technically "required," but you will receive points for participating in discussion section, so it behooves you to attend. Plus, then you are getting your money's worth for your education! **Sections will meet beginning the week of April 3.** Sections will review the week's subject matter and/or discuss an assigned paper or you'll receive a short quiz (see schedule below). The readings are posted on TritonEd and **all information in readings is fair game for the exams.** See IA list below for information regarding times and locations of discussion sections. You should have already chosen and registered for a section when you enrolled in this course. **If you need to change sections, please work that out with the IA that you are enrolled with and the IA to which you want to change. It will be up to them to allow changes.**

Exams: There is one midterm worth 100 points and a final exam worth 200 points. Only material presented in lecture or in the readings required for Discussion Sections will be covered on the exams. **I will NOT test on any material from the book as it is NOT required.** All questions will be multiple choice and a Scantron sheet will be provided for both exams. The midterm will be given in class and contain material for that section of the course up to the lecture preceding the exam. The final exam will be cumulative. Exam scores will be available after grading is complete as will your individual Scantron sheets, but the exams will not be returned because I don't want the questions posted on the internet. **We will check photo ID at each exam, so please bring a photo ID** and some #2 pencils.

There are no re-grades or make-up exams. If you miss an exam, you will be required to provide official documentation of an unavoidable emergency (serious illness, etc.). Without such documentation, you will receive no points for that exam. If you miss the midterm AND have valid documentation, the proportion of your grade that is based on your final exam will be increased to cover the missed midterm. If you miss the final exam AND have valid documentation, you will receive an incomplete for the course and be re-tested in the next quarter.

TritonEd: Lecture notes in PDF form will be available on TritonEd (<https://tritoned.ucsd.edu/>) by 5 pm the day preceding each lecture. They can be found in the BILD 3 Lectures File. If you are registered for the course (or if you are on the wait list), then you should have access to the course web site now.

Concurrent enrollment (extension) students are not added automatically. Extension students can bring proof of enrollment to the ACMS Help Desk (Applied Physics and Math bldg. 1313, M-F, 8:00-4:30) to obtain TritonEd access. More information for extension students can be found here:
<https://extension.ucsd.edu/student-resources/?vAction=faq>

Grading: Your final letter grade will be based on your TOTAL number of points. **If everyone earns enough points that they fall at or above 90%, I have no problem giving everyone an A- or better.** However, that is unlikely (but I'd love to have you prove me wrong!). Therefore, if warranted, letter grades will be based on a curve. This means I will make sure that approximately the top 20% of students will receive A- or above grades (even if that means going below 90%); the next 30% of students will receive B- and above grades; the next 40% of students will receive C or D grades, and the final 10% will receive F grades. **And let me reiterate**, ALL students getting a 90% or higher will get at A- or better, regardless of whether it's 20% or 100% of you. In addition, if you receive an 80% to 89%, you will get a B- to B+. Finally, if you get 70% to 79%, you will get a C- to C+.

I do give plus and minus grades but only on the final course grades. The pluses and minuses do not make the curve easier, they only help to differentiate the scores within the ranges above. Please note that the university will not allow me to change a letter grade after they are turned in except in cases of demonstrable clerical error.

Wait list: If you are on the wait list for this class you will be automatically added if space becomes available. If you have any concerns, please contact the Biology Student Affairs Advising Services office at 858-534-0557 or go to their website (<https://www.biology.ucsd.edu/administration/sis/index.html>).

Extra Credit, Self-guided field trip to the Scripps Coastal Reserve: This optional assignment is worth ten points. I will provide more information regarding this assignment after the midterm.

Cheating: Don't do it. Please. You are a responsible adult and I expect you to behave that way. The prospect of doing poorly on an exam can incite anxiety and lure you into irresponsible behavior, but resist

the urge to cheat! It hurts everyone's morale, is simply a bad way to behave, and my students are clearly better than that. In the unlikely event that you succumb to temptation and decide to cheat, you will be caught and handed over to the Academic Integrity Coordinator, which reports directly to the Dean of the student's college. For the Academic Integrity policy at UCSD, see here: <http://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2>.

By the way, a student cheated in a previous class and the Academic Integrity process was **AWFUL** for the students involved, the IA, and myself. I hated it and never want to do it again. But I will grudgingly go through the process if you cheat, so I highly recommend that you don't cheat and save us all the torture of dealing with the **super scary** cheating review board at the Academic Integrity Office. I am not exaggerating here. They are **SUPER SCARY** (at least they were to me).

Please do NOT post my lectures on public websites like Course Hero or others. Thank you!

OSD students: If you need testing accommodation for this class, please work with the Office for Students with Disabilities (OSD). 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), or <http://disabilities.ucsd.edu/>. **You will need to coordinate scheduling of exams with the head IA (see above). All of these arrangements should be made within the first two weeks of the quarter.**

Enrollment questions: Administrative, advising, or registration questions should be submitted via the Virtual Advising Center (<http://vac.ucsd.edu>).

How to excel in this class: Here is what I suggest you do to be a responsible student hoping to get an A in my BILD 3 class: 1) print out the lecture notes from TritonEd and bring them to class, 2) go to lecture and take notes while referencing the figures and other materials on the lecture notes, 3) don't try and write down every word, 4) go over your notes within the next day or so and fill in details missed in lecture or topics you didn't understand using material presented in the book or online or in discussion section or by listening to the podcast, 5) rely on your own notes rather than attempting to rely solely on the posted slides which won't be complete (writing your own notes forces you to summarize, organize, and restate concepts in your own words which is always better for understanding material), 6) if you miss lecture, listen to the podcast with the printed notes as if you were in class, 7) if you need review on a topic, listen to the podcast multiple times, 8) go to the discussion sections to have questions answered, discuss topics in detail, and get extra help and guidance, 9) be enthusiastic about learning the material, and 10) ask for clarification during lecture. **I repeat, feel free to ask questions during lecture!** I love questions. I do not care if we don't get to all the lecture material because you're so curious. Overcome your fear of speaking in front of others and know that at least one other student (but probably many) has the same question, so you are doing everyone else a favor. **Be brave. It's OK. I'm not scary.**

Problems? If you have serious medical or personal problems during the quarter, the university allows withdrawals. Contact the Biology Student Affairs Advising Services office at (858) 534-0557 or <https://www.biology.ucsd.edu/administration/sis/index.html>. If you're feeling in need of immediate mental health help, please contact Counseling and Psychological Services (CAPS) at <http://caps.ucsd.edu> or (858) 534.3755. Please seek help if you need it. There is no shame in seeking help, only strength and self-love. Plus, your friends, relatives, and others who love you will be grateful because they want you around.

Lecture Schedule

Date	Lecture Topic	Textbook Chapters Campbell 9th ed., Campbell, Biology in Focus (not required)
April		
4	1. History of evolutionary thought, part 1 (Darwin, Wallace, and the people who influenced their ideas)	22, 19
6	2. History of evolutionary thought, part 2	22, 19
11	3. Evidence of evolution	22, 19
13	4. Natural selection	23, 21
18	5. The genetics of populations	23, 21
20	6. Evolutionary processes and genetic variation	23, 21
25	7. Speciation	24, 22
27	8. History of life on Earth	26, 20
May		
2	9. Phylogenetic trees	25, 23
4	10. Human evolution	Papers ¹
9	MIDTERM (same time and location as lecture)	
11	11. Organismal diversity I (bacteria, archaea, protists, plants)	29-31, 26
16	12. Organismal diversity II (fungi, invertebrates, vertebrates)	32-34, 27
18	13. Physical environment, biomes, climate	52, 42
23	14. Population ecology	53-54, 40-41
25	15. Community ecology	55, 42
30	16. Ecosystem ecology, part 1	55, 42
June		
1	17. Ecosystem ecology, part 2	56, 43
6	18. Conservation biology	
8	19. Applied conservation in ecology: Research in the Kurle lab	56, 43
15	COMPREHENSIVE FINAL, 8-11 am (same location as lecture)	

¹A selection of **non-required** papers will be made available on this topic via our BILD 3 site on TritonEd for your interest

Discussion Section Schedule (required articles can be downloaded from our TritonEd website)

Week #, Date	Activity
1, 4/3	Get to know your class and discuss Pagel Nature article on history of natural selection
2, 4/10	Quiz on lectures 1-2 and discussion of lecture material
3, 4/17	Discuss Reznick & Ricklefs Nature article on micro- and macroevolution
4, 4/24	Quiz on lectures 3-6 and discussion of lecture material
5, 5/1	Discussion of lecture material and review for midterm
6, 5/8	Quiz on lectures 7-10 and discussion of lecture material
7, 5/15	Discuss Croll et al. 2005 Science paper on invasive foxes on islands
8, 5/22	Quiz on lectures 11-13 and discussion of lecture material
9, 5/29	No class on Monday; sections not required this week, but they will be held for review and discussion of lecture material on Tu-Fri. Go to any section you want.
10, 6/5	Discussion of lecture material, review for final

IA list, discussion time and location, and office hour time and location

IA Name	IA Email	Discussion Day and Time		Discussion Place	Office Hour Day, Time, and Location
Elizabeth Hetherington	ehetheri@ucsd.edu	Th	5:00-5:50 pm	CENTR 207	Thurs, 12-1, Muir Biol 4268
Elizabeth Hetherington	ehetheri@ucsd.edu	Th	6:00-6:50 pm	CENTR 207	Thurs, 12-1, Muir Biol 4268
Rachel Abraham	rabraham@ucsd.edu	M	1:00-1:50 pm	YORK 3000A	Wed, 5-6, Muir Coffee House (MOM)
Ye Hyang Kim	yhk009@ucsd.edu	W	8:00-8:50 am	YORK 3000A	Wed, 9-10 am, Women's Center
Stella Yuan	scyuan@ucsd.edu	W	3:00-3:50 pm	YORK 3000A	Th, 6-7 pm, Muir Coffee House
David Ahmadian	daahmadi@ucsd.edu	W	11:00-11:50 am	CENTR 218	Wed, 2:50-3:50, Muir Coffee House (MOM)
Breana Garcia	brg011@ucsd.edu	F	8:00-8:50 am	CENTR 218	Wed, 1030-1130, Muir Coffee House (MOM)
Vivian Hua	vkhua@ucsd.edu	F	2:00-2:50 pm	CENTR 217A	Mon, 12-1, Price Center Theater
Michaela Juels	mjuels@ucsd.edu	F	1:00-1:50 pm	CENTR 217A	Tu, 9:30-10:30, Roger's Market
Maria McCavitt-Malvido	mmccavit@ucsd.edu	F	4:00-3:50 pm	CENTR 218	Tue, 11-12, Audrey's in Geisel Library
Joyee Tseng	j1tseng@ucsd.edu	M	4:00-4:50 pm	YORK 3000A	Wed, 4-5, Mandeville Coffee Cart
Brandon Young	btyoung@ucsd.edu	W	6:00-6:50 pm	YORK 3000A	Th, 5-6 pm, Price Center Theater
Konstancja Ziegert	kziegert@ucsd.edu	W	7:00-7:50 pm	YORK 3000A	M, 5-6 pm, Price Center Sun God Lounge
Austin Zuckerman	azuckerm@ucsd.edu	M	7:00-7:50 pm	YORK 3000A	Th, 3:30-4:30, Mandeville Coffee Cart

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, NOT on having the correct response, as often I will use these questions to identify confusing topics or create discussion opportunities. **If you come to 70% or more of the lectures (13 out of 19 lectures) and click in, you will receive full credit. To reiterate, you can miss 6 lectures and still get full credit.**

If you answer

> 70% of lecture days	you will receive	25 points
> 60% of lecture days		20 points
> 40% of lecture days		15 points
> 20% of lecture days		10 points

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 must register your iclicker through TritonEd to receive credit for responses during class.

If you have not registered your clicker by April 25 (3 weeks from the start of class), then it will be too late and you will receive zero clicker points.

Register your clicker using the link on our TritonEd page. On the left side of the screen, there is a list with Syllabus, BILD 3 lecture notes, etc. At the bottom of that list is Clicker Registration. Click on that and follow the instructions. If you have used an iclicker for a previous class, and registered it through TritonEd, 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 will not see your clicker points on TritonEd until you have registered your clicker. To ensure your clicker is working properly, please register **RIGHT AWAY**. Every student in this course must have their own iclicker to receive clicker points.

Using your clicker

Turn your clicker on with the bottom button. Set it to the frequency in our room (CA) I will ask questions, and you will respond by pushing buttons A – E. Please wait until I start the voting before you respond. When your answer has been received, you will see a checkmark at the top of your 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 is correct or incorrect. Like

all technologies, clickers sometimes malfunction. This is why I give full clicker credit if you come to 70% or more of the lectures. **I do not adjust scores in other ways, so please don't ask.**

Lost clickers

If you lose your clicker mid-quarter and use a different clicker, you need to change your registration online AND you need to email Liz Hetherington (ehetheri@ucsd.edu) the following (before the next lecture): a) your PID b) your clicker ID.

Clicker Troubleshooting

Some clickers are not functional or some days you may not want to come to lecture, **that is why you receive full credit for only clicking in for 70% of the lectures.** It is your responsibility to use this grace period to learn how to use your clicker and make sure that your clicker is working as I do not adjust scores for malfunctioning clickers.

To be clear, if your clicker is not working, I will NOT award points retroactively, so you MUST figure out why it's not working immediately. No exceptions.

If you have problems, go through the troubleshooting guide below.

If you are not getting the points you deserve:

- Be sure you have registered. This means through TridonEd (NOT at www.iclicker.com)
- Make sure your remote is on the correct frequency (**CA, for this class**)
- 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 their own clicker - if you are sharing with another student in the class, one of you will not get any points.
- Are your batteries still good?

If you have done everything correctly, but your clicker is still not working, please see one of the IAs for assistance. They will help you troubleshoot your clicker and check it. If your clicker is malfunctioning, the bookstore will exchange it. We cannot do anything to check your clicker over email. **It is your responsibility to make sure you are getting the points you deserve.** If there is a problem, you need to solve it or see one of the IAs right away so we can resolve the problem for future lectures.

ACTIVE SHOOTER GUIDELINES

Unfortunately, in the world we live in, the potential for an active shooter incident on campus, while still miniscule, does exist. To that end, I went to a campus training on the subject and am sharing with you what I learned so, if we are ever faced with a crazy person shooting on campus, we may increase our chances of remaining safe. Campus police recommend adhering to the ALICE guidelines (see below) when faced with an active shooter.

ALICE stands for:

A: Alert – if you see something weird ahead of time, alert the non-emergency campus police hotline (858.246.1111) immediately. Don't worry about looking alarmist. Just do it.

L: Lockdown – if you can't escape a shooter, then lockdown the area you are in to discourage and prevent the shooter from coming inside. Lock the door, turn off the lights, wrap a cord or belt around the door closer (the mechanism that is bent at an angle at the top of a door that allows it to close automatically) to keep the door from opening, and/or barricade the door with chairs or other furniture. Then, line up a group of volunteers at each door (out of sight of the window in the door) armed with anything that could be used as a weapon – fire extinguishers, chairs, books, heavy backpacks. If the shooter enters, IMMEDIATELY swarm the shooter and subdue them. Shoot them in the face with the fire extinguisher foam, throw the chairs/backpacks/books at their face, then tackle the shooter. Studies show that people will automatically reach up to protect their faces creating a valuable moment to tackle the shooter. If a group works together, the chances of getting hurt are smaller. Assign people to hold each leg, arm, head, and the torso. Do NOT let go. Take the weapon and secure it under a garbage can, chair, or otherwise out of site. DO NOT point the shooter's gun at the shooter as the police may mistake you for the suspect and shoot you. When the police arrive, calmly explain that you have subdued the shooter, tell where the weapon is, and await further instruction. It will be chaotic when the cops arrive, so stay calm.

I: Inform – while the event is happening, if you are able, inform others and/or the police what is going on. This can provide real-time important information to law enforcement.

C: Counter – Fight back or counter the attacker if you can't escape. See the guidelines in the Lockdown section above. Shooters do not expect to encounter resistance and frequently give up immediately when they do. Do not just stand or sit or cower in place. **Resist.** Even if you are shot rushing at a shooter to tackle them, the chances of that shot being fatal are small. However, holding still and allowing yourself to be a better target for a shooter increases your chances of being shot somewhere more damaging.

E: Evacuate/Escape – This is the first thing you should do if you find out that someone is on campus shooting. If it's happening somewhere away from where you are, then just get out of your building and walk off campus and go as far as you can. Don't try and get to your car, just walk off campus. Only if you can't escape should you do the Lockdown procedures described above.

The bottom line is to be prepared and don't be in denial. In classes, be thinking, what would I do if this terrible event happened? What's the best escape route? How do the doors work? Could I use my belt to tie the door closer shut? Are there cords anywhere that would work to hold the door shut? What can be used as obstacles to counter the shooter? Can I throw the chairs or are they attached to the floor? Do I have a book or computer that would work as a weapon? What about my backpack? Where's the fire extinguisher?

Finally, if you notice someone around you in distress or depressed or expressing malcontent, be kind, reach out, get help, and tell the people who can help (Counseling and Psychological Services (CAPS) at <http://caps.ucsd.edu> or (858) 534.3755 or the non-emergency police line at 858.246.1111).

We are all in need of love and care and I think remembering to **cultivate warm-heartedness** toward our fellow humans could go a long way in preventing some of this tragedy. Please keep that in mind as you move through your day on campus, interacting with others. Thank you.

For more information on active shooters on campus, please go here:
<http://police.ucsd.edu/services/alice.html>