

Life Sciences 7B: Genetics, Evolution, and Ecology

Summer Session A – Remote Learning Edition

Class Meeting Time: Monday, Wednesday, Friday @ 9 AM - 10:50 AM

Location: Online, Zoom links posted in the weekly CCLE folders

Online Text: *How Life Works* by Morris, J *et al.* 3e, with LaunchPad (hard copy optional)

LaunchPad Website: Access LaunchPad via a link on the CCLE at the bottom of our course homepage

For any advising or administrative issues please contact the Life Sciences Core Education Office:

general e-mail LS Core Office (lscore@lifesci.ucla.edu)

SAO for the course: Michelle Veintimilla (mveintimilla@lifesci.ucla.edu)

Welcome to Our Course!

How does life work? This profound question has inspired thinkers, inventors, and explorers throughout human history. It forms the basis for the study of agriculture, medicine, ecology, microbiology, and countless other fields in the life sciences. In this course, we will continue to explore this question, focusing on some of the fundamental processes underlying the evolution and interactions of all living organisms. Our exploration will begin by examining simple patterns of inheritance, as well as exploring gene interactions and their role in producing the variation we see in organisms that populate our planet. We will continue on to learn about processes and patterns of evolution and then move on to examine the ecological processes occurring on our planet. Although an entire lifetime of study, let alone one course, is not enough to form a complete answer to our question of how life works, our hope is that you will leave this course inspired to seek out the answers at every turn and equipped with the basic knowledge to launch your exploration of the awesome field of biology at UCLA.

Our Inclusive Learning Environment

UCLA values diversity and inclusion. We expect everyone in this class to contribute to a respectful, welcoming, and inclusive environment to support the learning of all other members of the class, regardless of age, sex, gender identity, race, culture, sexual orientation, religion, ability, background, or other seen or unseen identities. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment of achievement, please notify me.

Students needing academic accommodations based on a disability should contact the Center for Accessible Education (CAE) at (310) 825-1501. CAE will assess all requested accommodations and communicate with us. When possible, students should contact CAE within the first week of the summer session to allow reasonable time to coordinate accommodations. For more information, please visit the CAE website: <http://www.cae.ucla.edu/>.

About Your Instructors

Course Instructor:

Dr. Tonya Kane

Office Hours via Zoom: Tuesdays and Thursdays 3-4pm

Email: tkane@eeb.ucla.edu → Please include **LS7B** in your subject!

Course Teaching Assistants (TAs):

TAs are here to help you learn by facilitating class discussion and problem-solving during lectures and leading lab sections. They also will contribute to the evaluation of your class assignments and grading. You can find details of the lab assignments, TAs' office hour times, and all necessary Zoom links on their pages within our course CCLE site.

TA Name

Email

Info coming soon!

Course Learning Assistants (LAs):

LAs are UCLA undergraduate students who have completed this course. They are here to help you learn by fostering class discussion and problem-solving during lab sections and Collaborative Learning Center hours. LAs are not responsible for evaluating your work or assigning grades.

What You will Learn in this Course

There are several broad learning goals we will help you achieve by the end of this course. Specifically, you should be able to:

- Use deductive reasoning to solve problems about biological processes.
- Describe general trends in data presented in a table, chart, graphs, etc.
- Interpret the meaning of data as they relate to a particular biological process.
- Use experimental data to confirm or reject a hypothesis.
- Recognize the relationship of evolution to biodiversity and ecological processes
- Create simple models (drawings) based on written information or data about a biological process.
- Use model-based reasoning to predict responses to an environmental change.

Additional topic-specific learning objectives will be provided each week on the LaunchPad website and in the posted lecture slides on the CCLE course site. These learning objectives provide an overview of what you should be able to do on an exam. Use these learning objectives to help you focus your pre-class reading and your studying.

Schedule

Week	Lecture Topics	Lab Topics
1 June 22 – 26	Meiosis & Mendel's Laws Variations on Mendel Non-disjunction Patterns of Inheritance	M & Tu: Lab 1 – Exploring Your World
		W & Th: Lab 2 – Meiosis & Recombination
2 June 29 – July 3	Genetic Linkage Gene Mapping & Genetic Variation ** No class Friday – UCLA Holiday **	M & Tu: Lab 3 – Pedigrees
		W & Th: Lab 4 – Genetics
3 July 6 – 10	** MONDAY: MIDTERM 1 ** Hardy-Weinberg Equilibrium Modes of selection & Mechanisms of Evolution Applications of Hardy-Weinberg	M & Tu: No Labs
		W & Th: Lab 5 – Population Genetics
4 July 13 – 17	Speciation & Phylogenetic Trees Biodiversity Through Time Adaptive Radiations & Extinctions	M & Tu: Lab 6 – Biodiversity of Animals
		W & Th: Lab 7 – Biodiversity of Plants
5 July 20 – 24	** MONDAY: MIDTERM 2 ** Applications of Ecology Demography & Population Ecology	M & Tu: Lab 8 – Phylogenetic Trees
		W & Th: Lab 9 – Ecology
6 July 27 – 31	Species Interactions & Community Ecology Ecosystem Ecology & Global Ecology ** FRIDAY: FINAL EXAM **	M & Tu: Lab 10 – Conservation
		W & Th: No Labs

Course Logistics

Lectures:

Lectures will be synchronous via Zoom during our schedule time. Recordings of the lecture will be posted to CCLE later in the day. Lectures will be based on the topics listed in this syllabus, and any additional handouts, readings, or videos posted on the LaunchPad website, CCLE course site, or distributed through CCLE for class. We will give additional examples in the class that may not be from the text, but are chosen to help in understanding different concepts and applying various skills during the course. We will post lecture slides on CCLE the night before so that you can print them out and use them during class. Please note that attendance in class is strongly encouraged and participation during lectures will be rewarded through participation points.

Pre-Class Reading Guides:

We will provide pre-class reading guides on CCLE to help navigate through pre-class assignments. The information on these worksheets is *not* meant to act as a study guide, but rather are a useful reference as you work through problems in class. Completing these guides is optional, but highly recommended.

Lab Sections:

You will have the opportunity to earn 15 points for your participation and engagement in each lab section. These discussion sections are designed to: (1) Help reinforce many of the concepts you learn in class; (2) Give you the opportunity to get practice with exercises and problem sets related to lecture topics; (3) Give you the opportunity to ask questions, get feedback from TAs and LAs, and work together in groups. You must attend the section in which you are enrolled. The points may be earned for work done entirely during lab section, or from a combination of in-lab exercises and a pre-lab assignment. You must attend the section in which you are enrolled, arrive on time, and stay for the entire section in order to receive any credit for work from that section. If you arrive more than 20 minutes late for a lab section, you will not be allowed to attend that section and will receive a zero for any work pertaining to that week's lab. There are no make-up sections. If there is an extenuating circumstance and you need to attend another section **one time only**, you must discuss this with your TA and the TA of the section you would like to attend **before the start** of your enrolled discussion section. The maximum number of lab section points you can earn in the course is 135, meaning you can miss up to 15 lab section points and still receive full credit in the course. This should account for any extenuating circumstance that may require you to miss a lab section.

LaunchPad:

You will access LaunchPad through our CCLE site. All LaunchPad assignments must be completed on time to receive points. Because assignments are due throughout each week, check LaunchPad frequently to make sure you know when to complete all assignments. No late work will be allowed. Plan ahead! DO NOT wait until right before the deadline to complete an assignment in case of technical difficulties.

**** Sometimes technical errors happen. ****

You should make an effort to complete assignments with plenty of time before the deadline. If you have a technical issue, solve the issue with Launchpad technical support before the deadline! Neither Launchpad technical support nor the instructors will be able to reopen any assignment after a deadline has passed due to late submission or technical errors.

For technical issues, please contact LaunchPad technical support at 1-800-936-6899.

Tech support is available Monday – Thursday 6AM – 12PM, Friday 6AM - 8PM,
Saturday 8:30AM - 5PM, and Sunday 8:30AM - 8PM (all times PST).

LaunchPad Pre-Class Review Questions (PCRQs): To help ensure that you are prepared for class, you will complete review questions on LaunchPad **before** each class meeting beginning Wednesday of Week 1. *(Note that for Week 1 only, the Monday PCRQs are also due by Wednesday before class.)* These questions are graded based on correctness of your answers, but you will have two attempts for each set of questions. At the end of the quarter, your total number of points for PCRQs will be scaled to your percentage out of 50 course points. The maximum number of PCRQ points you can earn in the course is 45, meaning you can miss up to 5 PCRQ points and still receive full credit in the course. This should account for any technical errors or extenuating circumstance that may require you to miss a PCRQ set.

LaunchPad Practice Exam Questions (PEQs): To help you prepare for exams, we will provide practice exam questions on LaunchPad after class meetings for the week. These actual former exam questions will provide examples and serve as a resource to help prepare you for the exams. You will

only have one opportunity to complete the questions and it is timed to help prepare you for a true exam situation. These are graded based on correctness of your answers. At the end of the quarter, your total number of points for practice exam questions will be scaled to your percentage out of 50 course points. The maximum number of PEQ points you can earn in the course is 45, meaning you can miss up to 5 PEQ points and still receive full credit in the course. This should account for any technical errors or extenuating circumstance that may require you to miss a PEQ set.

LaunchPad Activities: In addition to the pre-class review questions and practice exam questions, you will have additional assignments that will be given through the LaunchPad website. These may include animations, videos, and simulations. At the end of the quarter, your total number of points from LaunchPad Activities will be scaled to your percentage out of 50 course points. The maximum number of LaunchPad Activity points you can earn in the course is 45, meaning you can miss up to 5 launchpad activity points and still receive full credit in the course. This should account for any technical errors or extenuating circumstance that may require you to miss an Activity assignment.

Participation:

iClicker REEF is a response system that allows you to respond to questions we pose during class. A large volume of education research suggests that clickers are likely to significantly increase your learning in the classroom. We will be sending out a code so that you have free access to the iClicker REEF app which you can use from your phone, tablet, or computer wherever you are during lecture. You will need to create an iClicker REEF account if you do not already have one. It is important that you use the email associated with CCLE (check your CCLE profile to confirm) for your ID number on the profile section of your iClicker REEF account. Failure to do so may result in inaccurate participation score reporting. Be on the lookout for an announcement on CCLE providing our access code for Summer 2020 and directions. When you register you must choose your course: **LS7B SUMMER 2020 Session A Kane** for UCLA.

You are required to use your iClicker REEF App starting Wednesday of Week 1. For each lecture session requiring participation (13 total), you may earn 5 participation points (all or nothing). You will need to answer 75% of the questions on each day in order to receive credit. You are not awarded points based on correct/incorrect answers. You will be given two “free” days of participation points. This should account for any technical difficulties or absences. You cannot receive more than the 65 points awarded for participation (i.e. if you have perfect attendance points for the “free days” will not be added to your final score). If you are in a time zone that makes attending lecture challenging, please send an e-mail to Dr. Kane and we can make accommodations for participation.

Please check your participation scores every week on CCLE to make sure your participation credit is being recorded. Contact Dr. Kane to address any discrepancies no later than Friday of Week 3. If you do not monitor your clicker participation scores throughout the quarter, you may lose participation points from the total possible number of points at the end of the quarter.

Please note that clicking in for another student is an example of cheating and will be treated as such. If you are found to be clicking in for another student or having another student click in for you, you will both forfeit ALL clicker points for the quarter.

Exams:

You have two midterms and a final exam for the course. Exams will be administered on the dates indicated in the course schedule. You must take the exams at the scheduled date/time. In the event that you must miss an exam, you should contact your instructor as soon as is reasonably possible. You will be asked for verification of the event and the course instructor will determine whether a makeup exam is possible. If a makeup exam is not granted, then failure to take the exam will result in a zero for that exam.

Material for the exams will be taken from lectures, problems that have been posted on LaunchPad, material from discussion sections, and worksheets or clicker questions/problem sets done during lecture. You will get a set of learning objectives every week that will help you figure out what you need to be able to do to succeed on an exam. Focus on mastering these learning objectives (skills) rather than trying to memorize all of the course material.

There will be a mix of multiple choice and true/false questions on the exams. Midterm I will cover material from weeks 1 & 2, and Midterm II will cover material from weeks 3 & 4. The final exam will be cumulative, with approximately 60% of the exam covering weeks 5 & 6.

Course Materials:

Please protect the integrity of all course materials and content. By enrolling in this course, you agree to honor this request. Be mindful of the hard work and time that our instructors and TAs in the LS Core put into creating course materials such as exam and quiz questions, worksheets, and lecture videos. Please do not upload course materials not created by you onto third-party websites or share content with anyone who is not enrolled in our course. We are grateful for your cooperation in honoring this important request.

Enrollment (including Changing Lab Sections):

In the event that we are at maximum enrollment capacity and you would like to enroll in this course, please monitor the Schedule of Classes in case someone drops the course. If you have other enrollment concerns, please contact the LS Core office (lscore@lifesci.ucla.edu). Your instructors and the SAOs are unable to provide students permission to enroll (PTE) numbers.

Please note that you are not permitted to switch enrollment in lab sections after the second week of the quarter. If you would like to switch sections during the first week but there are no spots available in the desired section, you need to find another student who agrees to switch sections with you. To make the switch in discussion sections official with the registrar, you both will need to contact the LS Core office (lscore@lifesci.ucla.edu) and discuss your intention to switch sections with an SAO.

How Your Learning will be Assessed

Course Grading:

We are committed to making sure the assessment of your learning in this course is comprehensive, fair, and equitable. Your grade in this class will be based on the number of points you earn out of the total number of points possible and is **not** based on your rank relative to other students. Furthermore, grades are assigned without strict limits on the proportion of each letter grade given in the course.

If the class mean is 75% or higher, letter grades will be based on a straight scale using the following thresholds for grade cut-offs: A range from 90-100%, B range from 80-89.9%, C range from 70-79.9%, D range from 60-69.9%, and F given to 59.9% or lower. Within each letter grade range, a minus will be assigned to the bottom three percentage points and a plus will be assigned to the top three percentage points (i.e. 80-82.9% is a B-, 87-89.9% is a B+). A grade of A+ will be given for a grade of 100% or higher. If the class mean is lower than 75%, the scale will be adjusted to compensate (e.g. 89% may become an A-). Under no circumstances will grades be adjusted down. You can use the straight grading scale as an indicator of your *minimum* grade in the course at any time during the course. You should keep track of your own points so that at any time during the quarter you may calculate your minimum grade based on the total number of points possible at that particular time. If and when, for any reason, you have concerns about your grade in the course, please come and speak with me or your TA so that we can discuss study techniques or alternative strategies to help you.

Point Breakdown:

<u>Assignment</u>	<u>Points Possible</u>
Midterm 1	120
Midterm 2	120
Final Exam	200
Lab Sections	135
Lecture Participation (clicker points)	65
LaunchPad Activity Assignments	45
LP Pre-Class Review Questions (PCRQs)	45
LP Practice Exam Questions (PEQs)	45
Total Points	775

Regrading policy:

Regrade requests will be considered only after final grades have been calculated and only if a regrade might improve your final letter grade. For all requests, send a detailed email to the Dr. Kane explaining why you think more points should be awarded. Any request for a regrade of a lab assignment must be made within one week of the assignment being returned to you; the entire assignment will be regraded.

Academic Integrity - A Bruin's Code of Conduct:

UCLA is a community of scholars committed to the values of integrity. In this community, all members including faculty, staff, and students alike are responsible for maintaining the highest standards of academic honesty and quality of academic work. As a student and member of the UCLA community, you are expected to demonstrate integrity in all of your academic endeavors. When accusations of academic dishonesty occur, the Office of the Dean of Students investigates and adjudicates suspected violations of this student code. Unacceptable behavior include cheating, fabrication, plagiarism, multiple submissions without instructor permission, using unauthorized study aids, or facilitating academic misconduct. Please review our campus' policy on academic integrity in the UCLA Student Conduct Code:

<http://www.deanofstudents.ucla.edu/Student-Conduct-Code>.

With respect to our course, examples of academic dishonesty include giving answers on assignments to someone else, receiving answers from someone else, turning in any written work that is not your own for points in our course, copying passages from websites, copying passages from your or any other textbook on any graded material in the course, or bringing a classmate's clicker to class to get participation points for them when they are absent. If you engage in these types of unacceptable behaviors, then you will receive a zero as your score for that assignment. **If you are found to be clicking in for another student or having another student click in for you, you will both forfeit all 68 clicker points for the quarter.** If you are caught cheating on an exam (e.g., using notes – unless permitted by your instructor, using cell phones or other smart devices to send, receive, or research an answer, looking on someone else's exam, allowing someone else to look at your exam for answers, etc.), then you will receive a score of zero for the entire exam. These allegations will be referred to the Office of the Dean of Students and can lead to formal disciplinary proceedings. Being found responsible for violations of academic integrity can result in disciplinary actions such as the loss of course credit for an entire term, suspension for several terms, or dismissal from the University. Such negative marks on your academic record may become a major obstacle to admission to graduate, medical, or professional school.

We cannot make exceptions to our campus' policy on academic integrity, and as we hopefully have communicated effectively here, **penalties for violations of this policy are harsh**. Please do not believe it if you hear that "everyone does it". The truth is, you usually don't hear about imposed disciplinary actions because they are kept confidential. So our advice is: just don't do it! Let's embrace what it means to be a true Bruin and together be committed to the values of integrity.

NOTE: THIS SYLLABUS IS SUBJECT TO CHANGE.
ANY CHANGES WILL BE ANNOUNCED IN CLASS AND/OR ON CCLE.

Student Resources for Support and Learning

As a UCLA undergraduate, you may experience challenges such as struggles with academics, finances, or your personal well-being. UCLA has a multitude of resources available to all students. Many of these resources are listed below and we encourage all students to explore them as needed. If you are in immediate distress, please call Counseling and Psychological Services to speak directly with a counselor 24/7 at (310) 825-0768, or please call 911.

- **Academic Achievement Program:** AAP advocates and facilitates the access, academic success, and graduation of students who have been historically underrepresented in higher education and informs and prepares students for graduate and professional schools. Learn more at <http://www.aap.ucla.edu/>
- **Academics in the Commons at Covell Commons:** (310) 825-9315 free workshops on a wide variety of issues relating to academic & personal success www.orl.ucla.edu (click on “academics”)
- **Bruin Resource Center:** Includes services for transfer students, undocumented students, veterans, and students with dependents. <http://www.brc.ucla.edu/>
- **Center for Accessible Education (Formerly Office for Students with Disabilities):** A255 Murphy Hall: (310) 825-1501, TDD (310) 206-6083; <http://www.cae.ucla.edu/>
- **Counseling and Psychological Services:** (310) 825-0768 www.caps.ucla.edu
- **Dashew Center for International Students and Scholars 106 Bradley Hall:** (310) 825-1681 www.internationalcenter.ucla.edu
- **Dean of Students Office; 1206 Murphy Hall:** This is a great general resource for all Bruins. Get help if you’ve experienced rape or sexual assault, report a bias incident, learn about academic integrity issues and your first amendment rights, and much more. (310) 825-3871; www.deanofstudents.ucla.edu
- **Lesbian, Gay, Bisexual and Transgender Resource Center Student Activities Center, B36:** (310) 206-3628 www.lgbt.ucla.edu
- **Library:** Get help with your research, find study spaces, attend a workshop, rent a laptop, and more. Learn more: <http://www.library.ucla.edu/>
- **Student Legal Services; A239 Murphy Hall:** (310) 825-9894; www.studentlegal.ucla.edu
- **Undergraduate Writing Center:** Peer learning facilitators (PLFs) are undergraduates who understand the challenges of writing at UCLA. Scheduled appointment and walk-in options are available, see www.wp.ucla.edu/uwc for more information about writing programs and to get assistance with your writing.