



Class time and location:	TuTh 11:30 am – 12:45 pm in SBS D225
Instructor:	Dr. Sonal Singhal
Office hours:	TuTh 2:30p – 4:30p
Office:	SCI 210 (on-campus)
Phone:	310-243-3394
E-mail:	ssinghal@csudh.edu

Course Description

Have you ever gone on a walk through your neighborhood, or along a beach, or up a mountain trail, and wondered about all the species that surrounded you and where they came from? Have you ever wondered how humans affect their environment and other species? Have you ever wondered where mutations come from and how they affect individuals and species? In this class, you will learn the answers to all these questions. This course covers the basics of ecology & evolution.

From the course catalog: Introduction to basic concepts of evolution and ecology, including Darwinian evolution, biogeography, biodiversity, genomics, biomes, coevolution, and population, community, ecosystem, landscape, behavioral ecology. 3 units. *Prerequisites:* Bio 122, Bio 123; *Corequisite:* Bio 125

Student Learning Objectives

At the end of this class, you should be able to do three major things:

- 1 Explain the basic principles of ecology and evolution
- 2 Generate data-driven scientific arguments
- 3 Begin discovering your career path

More specifically, you will be able to:

1. Explain the basic principles of ecology & evolution
 - Explain how evolution explains the diversity we see within a species and across species
 - Understand why species are found in some places in the world, but not others
 - Describe how species interact with each other & the effects one species can have on another
 - Describe why humans are one of the biggest evolutionary and ecological forces on earth
2. Generate data-driven scientific arguments
 - Analyze and interpret scientific datasets, figures, and charts
 - Design experiments and observational studies to test your hypotheses
 - Better share your ideas with each other & with me in writing and out loud
3. Begin discovering your career path
 - Determine career paths that reflect your strengths and weaknesses as a biologist
 - Identify resources and opportunities to help you reach your professional goals

Materials

Required Material: none, but if you can bring a laptop or tablet to class, it might help! visit <https://techcheckout.csudh.edu/> to check a device out from campus

Classroom Policies

Come to class ready to learn. This means arrive on time, don't have distracting side conversations, and avoid using your phone when I am lecturing or we are having class discussions. When you can, let me know if you have to miss class. While I do not require attendance, learning at home by yourself will be less fun and less effective.

Designing a class without exams takes a lot of work. Each case study takes me more than a full day's of work to write. Please do not share these on the Internet or with future students. Evidence of sharing will constitute plagiarism and will result in automatic failure of the class.

Schedule & Recipe for Success

Every week in this class is set-up the same way because it helps me & you stay organized.

BEFORE TUES. Read Handout (posted on Canvas)	TUESDAY Case Study Due 11:30a on Canvas	TUESDAY Attend Lecture 11:30a - 12:15p	THURSDAY Quiz Closes 11:30a on Canvas	THURSDAY Work on Case Study 11:30a - 12:15p	FRIDAY Handout & Quiz Posted 8a on Canvas
----------------------------------------------------	-----------------------------------------------	----------------------------------------------	---------------------------------------------	---------------------------------------------------	-------------------------------------------------

Blue boxes are activities we will do in class; pink boxes are activities happening on Canvas.

How can you be successful in this class?

- **Follow my suggested schedule.** I built a lot of flexibility into this class, but if you let work build up, it will become too much and become hard to manage.
- **Work to understand rather than memorize.** This class will require you to apply what you know to real examples in nature. If you memorize the material, it will be hard to apply it. We will discuss strategies in class to make sure you are understanding rather than memorizing the material.
- **Make friends in class.** I put you in groups because Biology Toros are super awesome, super friendly, and super smart. When you work together, you learn more.
- **Come visit me in my office, SCI 210.** Chatting one-on-one can be easier than chatting in class. Plus, I love meeting you all and getting to know you better. ☺
- **Contact me when life gets complicated** and focusing on school becomes hard. You don't need to tell me what is going on, but you do need to tell me that you need extra support or time to finish up the class.
- **Figure out why you should care.** Most of you are interested in health careers and might be less interested in learning about ecology & evolution compared to genetics or cell biology. That's okay. I try my hardest to make this material in this class relevant to you, but you should also figure out what about this material is interesting to you.
- **Take advantage of revisions.** Like most things in life, learning takes time and effort. (Think about it this way: most people cannot run a marathon after the first time they go to the gym.) I designed this class to give you multiple times to try to learn & re-learn the material. Be sure to take the time to do revisions, as necessary.
- **Have fun!** There are no exams in this class on purpose. Stress makes it harder to learn. I am trying to create a less stressful environment for you to learn.

Grading

An important idea in this class is that learning takes time. So, every aspect of this class is designed to give you multiple chances to show me what you learned and to improve on your work.

Grade	Case Study Grades	Quiz Grades	Career Assignment Grades
for an A	4 on ≥ 8 case studies, 3+ on rest	80+% average on quizzes	3+ on all career assignments
for a A-	4 on ≥ 7 case studies, 3+ on rest		
for a B+	4 on ≥ 6 case studies, 3+ on rest		
for a B	3+ on all case studies		
for a B-	3 on ≥ 7 case studies, 2+ on rest	70+% average on quizzes	2+ on all career assignments
for a C+	3 on ≥ 5 case studies, 2+ on rest		
for a C	2+ on all case studies		
for a C-	2+ on all case studies	60+% average on quizzes	1+ on all career assignments
for a D	1+ on all case studies		
for a F	no work turned in	below 60% average on quizzes	no work turned in

Quizzes: Almost every Friday, I will post a 10-question multiple-choice quiz on Canvas. After reviewing the handout, you will be able to answer all the questions on this quiz. You will have a full week (until Thursday before class) to complete this quiz.

Redo Policy: I will give you 3 tries on each quiz. In addition, at two points in the semester, you will have the opportunity to take a ~50 – 60 question multiple-choice exam that will consist of questions very similar to those on the quizzes. These are “Quiz Make Up” exams and are intended for people who did not do as well on the quizzes as they liked or who had to miss quizzes because of illness etc.

Case studies: Almost every Thursday, you will work on a case study. These case studies will ask you to analyze and apply real scientific data. You will work on these in groups, but each person must turn in their own work and their own answers. You will have a half week (until Tuesday before class) to complete the case study. Case studies will be graded on a 0 – 4 scale based on a rubric I will post as the same time as the case study. I will automatically drop your lowest grade on the case study, including ones that were not complete.

Redo Policy: Based on your grade & your rubric, you will have the opportunity to revise & resubmit your case studies. These revisions will be done on your own time & your own schedule. All revisions are due by 1:30p on December 15th. However, I strongly recommend attempting any revisions as soon as possible, while our classroom discussions are still fresh in your memory.

Career Assignments: Throughout the semester, you will complete three assignments designed to help you start thinking about your future professional career. We will start these in class and then you will finish them on your own time. You will be given multiple weeks to complete each of these assignments. Assignments will be graded on a 0 – 4 scale.

Redo Policy: You can revise each of these career assignments multiple times. All revisions are due by 1:30p on December 15th.

Extra credit: No extra credit is offered in this class.

Tentative Schedule		
Date	Topic	Assessment Due
Tue., Aug. 30	Introduction to the class	
Thu., Sep. 1	Career Discussion	
Tue., Sep. 6	Lecture 1: Introduction to ecology	
Thu., Sep. 8	Case Study 1: Change across biomes	Quiz 1
Tue., Sep. 13	Lecture 2: Introduction to evolution	Case Study 1
Thu., Sep. 15	Case Study 2: Evidence for evolution	Quiz 2
Tue., Sep. 20	Lecture 3: Review of genetics	Case Study 2
Thu., Sep. 22	Case Study 3: Elephant tusklessness	Quiz 3 Career Assignment 1
Tue., Sep. 27	Lecture 4: Ecology of populations	Case Study 3
Thu., Sep. 29	Case Study 4: Adapt, acclimate, move, or die?	Quiz 4
Tue., Oct. 4	Lecture 5: Natural Selection	Case Study 4
Thu., Oct. 6	Case Study 5: Selection in real-time	Quiz 5
Tue., Oct. 11	Lecture 6: Evolutionary forces	Case Study 5
Thu., Oct. 13	Case study 6: Human effects on population evolution	Quiz 6
Tue., Oct. 18	Career Discussion	Case Study 6
Thu., Oct. 20	Catch-up Day Quiz Make-up Day #1 on Canvas (11:30a – 12:45p)	
Tue., Oct. 25	Lecture 7: Speciation	Career Assignment 2
Thu., Oct. 27	Case Study 7: Speciation reversal	Quiz 7
Tue., Nov. 1	Lecture 8: Phylogenetics	Case Study 7
Thu., Nov. 3	Case Study 8: Phylogenetics of SARS-CoV-2	Quiz 8
Tue., Nov. 8	Lecture 9: Species interactions	Case Study 8
Thu., Nov. 10	Case Study 9: Human-animal interactions	Quiz 9
Tue., Nov. 15	Lecture 10: Community ecology	Case Study 9
Thu., Nov. 17	Case Study 10: Disease and trophic cascades	Quiz 10
Tue., Nov. 22	Career Discussion	
Thu., Nov. 24	THANKSGIVING HOLIDAY - NO CLASS	
Tue., Nov. 29	Lecture 11: Ecological change	Case Study 10
Thu., Dec. 1	Case Study 11: Nutrient cycling	Quiz 11
Tue., Dec. 6	Lecture 12: Global Change	Case Study 11 Career Assignment 3
Thu., Dec. 8	Lecture 12: Human Migration	Quiz 12
Thu., Dec 15	Case Study 12 & All Revisions Due Quiz Make-up Day #2 on Canvas (11:30a – 1:30p)	

University Policies

Academic Integrity: This course will be conducted in accordance with the University Policy on Academic Integrity (p.14 University Catalog). Any student caught cheating or plagiarizing will receive an F (0 points) on the assignment and will be penalized according to University regulations. Cheating or plagiarism is subject to discipline as provided in Title 5, California Code of Regulations. Plagiarism is a very serious offense. See the University Catalog under Academic Integrity for further information.

Exams: no cellphone use of any kind is allowed during exams. Cellphones will be turned off and secured in your bookbag, which will be placed on the floor for the duration of the exam.

Plagiarism: it is imperative that you cite all your sources on assignments. Academic misconduct of any kind, including cheating on exams and plagiarism, will result in a grade of F for the course, and possibly other sanctions. Once you have completed this course, do not share assignments etc. with students in subsequent semesters. If anyone turns in your assignment in a future semester, you will be held accountable and face sanctions.

Disruptive Students: Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. The instructor may require a student responsible for disruptive behavior to leave class pending discussion and resolution of the problem and may report a disruptive student to the Student Affairs Office (WH A-410, 310-243-3784) for disciplinary action.

CSUDH adheres to the Americans with Disabilities Act with respect to providing reasonable accommodations for students with temporary and permanent disabilities. To receive accommodations, students with disabilities must register with Students disAbility Resource Center. For more information, please contact their office in Welch Hall D-180 at (310) 243-3660 (voice) or (310) 243-2028 (TDD).

Computer/Information Literacy Expectations for Students enrolled in this class: Students in this class are expected to:

- Use assigned Toromail account or other university approved email.
- Have ability to navigate and use Blackboard.
- Have basic information and computer literacy in one of the computer formats (Windows, Macintosh, or GNU/Linux).
- Upload files in all of the computer formats (.doc, .docx, .jpeg, .ppt, .pdg, .xps).
- Access and choose appropriate library and other scholarly sources of information.
- Search for and find relevant scholarly information effectively.
- Be able to paraphrase concepts without plagiarizing.
- Maintain the minimum computer Hardware requirements*
- Maintain the minimum computer Software requirements*

*Please visit <http://www.csudh.edu/academic-technology/instructional-technologyresources/online-courses-tech/> for the most up-to-date Hardware & Software computer requirements