COLLEGE OF THE REDWOODS

# Syllabus for BIOL 20 – California Natural History

## Course Information

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| Semester & Year: | F2023 |
| Course ID & Section #: | E4941 |
| Course units: | 4 |
| Instructor's name: | Dr. Karen Reiss |
| Required meetings: | **Lectures MW 10:05-11:30; SCI 210** |
| | **Labs F 10-1:10; SCI 102 *or* OFF-CAMPUS** |
| Office Hours: | TBA and by appointment, ZOOM or in-person |

## Instructor Contact Information

karen-reiss@redwoods.edu BUT it is best to *email through Canvas* for course-related queries…see more details in the *Communication Guidelines* section below.

## Catalog Description

An introduction to the biotic communities of California and the identification, ecology and life history of the organisms living there. Coverage includes organismal structure and function, principles of ecology and evolution, techniques for studying organisms in the wild, and methods of recording field data. Students who are successful in this course are eligible for UC California Naturalist certification.

## Course Student Learning Outcomes

Lecture

1. Describe the defining cellular characteristics and life history patterns of prokaryotic and eukaryotic organisms commonly encountered in the field.
2. Hypothesize ecological and evolutionary mechanisms that are responsible for specific examples of organismal adaptation and lineage diversification.

Lab

1. Recognize the major biotic communities of California and analyze the biotic and abiotic factors responsible for the unique characteristics of each.
2. Name and classify plants, animals, fungi and macroalgae on sight and/or by using appropriate and available resources.
3. Maintain an organized field/ lab notebook that includes meaningful and accurate notes and data.

## Prerequisites

NONE

## Accessibility

College of the Redwoods is also committed to making reasonable accommodations for qualified students with disabilities. If you have a disability or believe you might benefit from disability-related services and accommodations, please contact me or Disability Services and Programs for Students (DSPS).

## Required Course Materials

- The Klamath Mountains: A Natural History, Kauffman and Garwood, ed.
- The California Naturalist Handbook, Nevers, et al.
- Trees and Shrubs of California, Stuart and Sawyer
- California's Changing Landscapes, Barbour et al. (out-of-print…PDF provided)
- Other readings posted on *Canvas*

## Additional Course Materials

REQUIRED:

- You'll need a **bound journal** (NOT spiral) for field observations and journal writings. *Your lecture notes need to go elsewhere!* The best inexpensive choice is either an unlined or graph-lined black "Composition" notebook. The just-as-good but more elegant choice is a blank bound artist's sketchbook or Moleskine. You have an hour of required writing per week, and will also be keeping all your observations, illustrations, musings, etc. in it, so find a journal that you like, are comfortable carrying, and will enjoy using.
- You should invest in some **waterproof ink pens** or **pencil**. Your notebook will inevitably get wet at some point and traditional ink will run.

OPTIONAL:

- You *may* wish to invest in **binoculars** and/or a **hand lens** but speak to me before you purchase either.
- You *may* wish to invest in an insulated **pad** to sit on or a portable **stool** since we will frequently be outside and one of the cardinal rules of doing natural history is *get comfortable*!
- You *may* wish to invest in other field guides for the taxa of your choice. Consult with me for a list of recommended options.

## Course Organization

LECTURES:

- **Each week you will have two lectures, each with associated reading assignments.** The lecture topics and associated reading are on your schedule.
- **The lecture portion of the class is divided into three units**. In the first third of the semester we'll cover earth history, California climate, geography, and geology, and basic principles of ecology and evolution. In the second third we'll discuss the major California habitat types and the environmental stresses that face the plants and animals that live there. In the third portion of the semester we'll cover the organisms themselves, their basic biology and some specific aspects of their natural history.

LABS AND FIELD TRIPS:

- **When on-campus we will meet in SCI 102 from 10:00am – 1:10 pm**. We will usually be learning skills that help us identify major plant and animal groups in preparation for id'ing them in the field. Then we

will go into the field on campus to practice. Some of our on-campus forays will involve gathering data for the *Outdoor Campus Collaborative* project (see the linked StoryMap for more information).

- **When on field trips we will meet at 10:30am at the field site**. Detailed instructions and maps will be made available on *Canvas* each week. In the field we will be exploring a variety of local habitats and the organisms that live there.
- **You need to provide your own transportation to field meeting sites.** They are not all accessible by bus but in the past, carpooling has worked great for students without their own car. *Please* talk to me if you're worried about transportation to field trips. It's important that you are on time for field trips because we will typically leave promptly, on foot, to explore. It's also important that you dress appropriately…*plan* on rain, wind, cold, and wet feet.
- **Bring your journal** and indicated resources **to every lab and every field trip**! Please PRINT OUT the lab handouts posted on Canvas…it is really difficult working from phone copies, in particular, and we won't always have cell service when in the field.

READINGS:

**Three "textbooks" books supplement lecture content: the Klamath Mountains book, CA's Changing Landscapes, and the CalNat Handbook.** These assignments are best done promptly *after* getting an intro to the subject in lecture. The "*For Discussion*" readings, usually articles posted on Canvas, need to be read in time for group discussion at the end of Thursday's lecture or the beginning of Friday's lab. Keep a close eye on the schedule so you don't miss anything and don't get behind.

DISCUSSION:

**We will have an in-class discussion of "*For Discussion*" readings most weeks.** I expect informed participation by the entire class. I will notice if you are chronically silent or blatantly uninformed in these discussions and I will assume you have not done the readings and you will not only lose participation points but you will suffer on exam questions that refer to these readings.

JOURNAL:

- **You will be keeping a natural history journal for the duration of the semester.** A properly formatted nature journal gets you looking at the world and listening to your own thoughts and creates a scientifically useful record for yourself and others in perpetuity. I want to help you get started with meaningful, accurate, and appropriate journaling.
- **In this journal will go…**

  1) **All lab lecture notes, observations, illustrations, and musings related to labs.**
  2) **A formatted entry for each class field trip.**
  3) **One additional formatted entry for an outdoor excursion of your own.**

- **At least one half-hour of the weekly writing needs to be observational.** For example, this might include a description of how a spider spins her web, how a group of deer move across a meadow they're foraging in, how different trees bend differently in the wind, etc. The other half hour can include random thoughts, poetry, responses to our readings, drawing, or more observations.
- **I will inspect these journals regularly**. I will provide feedback, but I will not grade them until the end of the semester.

PARTICIPATORY SCIENCE PROJECT:

- **As a class, we will be participating in a Participatory Science (aka Citizen Science) project related to the *Outdoor Campus Collaborative*, a campus BioBlitz.**
- "Participatory science" is the use of observations by laypeople around the world to help generate data that can be used by researchers. It has become an incredibly powerful resource for investigators, and a super fun hobby for lay people.
- A "Bioblitz" is a one-day event when an entire community comes together with the sole aim of identifying every single life form in a specified area and uploading this information to the international biodiversity-recording platform, iNaturalist. Our area will be the campus. The date is still TBD, and there will be alternatives if you are unavailable on that day.
- Hopefully you will appreciate how even novice naturalists can facilitate scientific progress.

VOLUNTEER WORK:

- **You are expected to participate in a single volunteer activity, for a minimum of 4 hours.**
- This can be for the an *Outdoor Campus Collaborative* project or for a local organization, e.g., Friends of the Arcata Marsh, Friends of the Dunes, Humboldt Baykeeper, Humboldt Botanical Gardens, California Native Plant Society, Northcoast Regional Land Trust, Redwood Region Audubon Society, PacOut Green Team, Trinidad Coastal Land Trust, Sequoia Park Zoo, Humboldt Fish Action Council, Humboldt Surfrider, Northcoast Environmental Center, Humboldt Trail Stewards, California State Parks, HSU Natural History Museum, HSU Natural Resources Club, the Wiyot, Yurok, Hupa, or Karuk…etc. The organization and activity that you volunteer for is up to you.
- This activity will help you appreciate the importance of community members in environmental resource management and environmental education.

INDIVIDUAL CAPSTONE PROJECT:

- **Each of you will carry out an individual project that will take no more than 8 hours of time over the course of the semester.**
- It is up to you to define this project but it must include a deliverable…a collection of specimens, an inventory of plants found in a particular place, a set of illustrations, signage identifying trees on campus, a poster showing the results of an experiment, etc. I will show you some past projects, help you brainstorm ideas, and shepherd you through the early stages…just let your curiosity flow and you will arrive naturally at a good project for you.
- You will give a short presentation on your project on the last day of class and will have become the expert on something.

QUIZZES AND EXAMS:

- **You will have regular small online lab quizzes** (roughly, every other week and noted on your schedule). Typically, each quiz covers the most recent skills you've learned (journal entry format, fern identification, etc.) and the most recent field trips.
- **Twice during the semester you will have midterm exams that cover the first two units of lecture material**. You will receive a study guide one week prior to each exam. If you've been taking good lecture notes, are caught up on your reading, and participate earnestly in class discussions, there should be no surprises on the review sheets.
- **During Finals Week you will have your third midterm exam and a comprehensive lab exam that covers all labs and field trips of the semester.** You will receive a study guide for the final.

Exam Make-Up Policy

- **There will typically be a multi-day window during which online quizzes are available.** It is up to you to find a good time within this window that doesn't conflict with other aspects of your life and you can work in an uninterrupted fashion.
- **You MUST have a serious and verifiable excuse to miss a lecture exam.** Ideally, you will contact me before the exam begins.
    - ***Contact me*** by leaving a message on email or phone voicemail.
    - ***Serious excuses include*** emergency room visits, quarantine due to contagious infectious disease, and deaths in the family.
    - ***Verifiable means*** you have a doctor's note, a police report, or some other form of evidence.

## Evaluation & Grading

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| Lecture Exams | 3 X 100 | 300 |
| Lab Quizzes | 5 x 20 | 100 |
| Comprehensive Lab Final | 100 | 100 |
| Volunteering | 100 | 100 |
| Participatory Science | 100 | 100 |
| Capstone project | 100 | 100 |
| Journals | 150 completeness and 50 quality | 200 |
| | | 1000 total points possible |

If you receive 90-100% of total points you will receive some flavor of A; 80-89% earns a B; 70-79% earns a C; 60-69% earns a D; < 60% results in a grade of F. There is no curving or otherwise creative grading.

## Academic Dishonesty

***Truth matters! Cheating sucks!*** In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. Academic dishonesty of any kind will result in an instant F on the quiz/exam/assignment and a memo to the Dean of Math and Science and to the Chief Student Services Officer that will become part of your permanent record. Disciplinary action will be taken if they already have your name on "the list" of past offenders. In other words, you get one warning. The Student Code of Conduct (AP 5500) is worth reading.

A couple of common pitfalls:

- Many students don't realize that complicity…allowing or encouraging cheating…is as bad as being the one doing the cheating.
- Many students don't understand that using a Wikipedia answer…even if you cite Wikipedia…is plagiarism.
- Many students don't realize that we professors KNOW that companies like Chegg will allow you to pay for access to answers to questions in popular textbooks like your lab manual. Not only is this cheating, but their answers typically suck!

***It's far better to earn an F with integrity than pass the class through cheating!***

## University of California *California Naturalist* Certification

- **This is an optional certification for students who pass this class with a C or better**, completing all requirements. Certification costs about $100 depending on whether you are a full or part-time student, though CR has been picking up the expense for the last couple of years and may continue to do so.
- This certification indicates not only that you possess the scientific background and skill set to be a competent naturalist but provides opportunities for personal and professional development and continued scientific activity. At the very least, it is a line on your resume that makes you a preferred candidate for positions -- volunteer, paid, or educational -- in environmental science and environmental education.
- See http://calnat.ucanr.edu/ for more info.


**UC *California Naturalist* Program Goals**

● To promote environmental literacy and stewardship of California's natural resources

● To increase participation in resource conservation and participatory science projects throughout the state

● To develop a core constituency of committed and educated citizens motivated and trained to participate in resource conservation, preservation, and restoration efforts

● To provide participants with the knowledge, skills, and confidence they need to educate others and participate in many aspects of resource management, such as public education, resource planning and public decision-making

● To provide the communication experience and critical thinking skills necessary to grow a citizen base that supports environmental protection and sustainable growth in California

## Communication Guidelines

Communication needs to be regular, effective, and meaningful for teaching and learning to be successful.

If you have a question:

- **You can email me any time using the *Message* tool on Canvas**. This is preferable to using my campus email (karen-reiss@redwoods.edu) because it keeps my class related emails in one place, and your comments/concerns are less likely to get lost in the tsunami of emails I receive on a daily basis. In either case, an email is ideal for questions that are personal and/or unique to you.
- **You can post your question on the *Questions for Karen* Discussion thread on Canvas**. This is ideal for questions that may be relevant to other members of the class. I usually check these each weekday morning, and once on weekends, but much more frequently if there's an assignment due or a test coming up.
- **You can write them down and save them for lab or Zoom office hours.** This is ideal for questions that may require some discussion to resolve.

When you communicate:

- **Please put the specific topic in the subject line or top of the post in the Discussion**, set off by a separate "Heading" font, e.g., "Question about lizard thermoregulation", or "Help! Freaking out about exam."
- **Please use appropriate salutations, closings, and grammar** in your messages, e.g., Dr. Reiss, My name is Sam and I'm in your Natural History class. I'm worried because I have dyslexia and reading the textbook is really hard. Do you have any suggestions for how I should study? Thanks, Sam". In other words, you're not texting.
- **Please be considerate of each other's questions and comments, both online and in the classroom.** It's important that we all feel safe commenting and questioning and discussing. A little tolerance goes a long way when a classmate is confused, or just spaced out when some important instructions were being delivered.
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## Necessary Skills

Even face-to-face learning requires some facility with basic computer-age skills. It's important to let me know sooner rather than later if any of these hold you up.

- Be able to reliably receive and respond in a timely fashion to messages sent to your CR email account.
- Be able to navigate the course and upload and download files in *Canvas*.
- Be able to use a phone or digital camera to take photos, videos, or make PDFs.
- Be able to access internet resources including online databases and fun stuff like YouTube.
- Be able to use a word processing program (such as Microsoft Word or Google Docs).
- Be able to use a data entry and/or graphing program (such as Microsoft Excel or Google Sheets).

## Technology Requirements

HARDWARE:

**Computer** – Have access to a reasonably recent model notebook or desktop computer (Mac or PC). I don't recommend that you plan on participating in this class solely from a portable device.

**Portable Devices** - You can use recent model portable devices for some activities, and we will be learning about some cool apps that you may want to download. Minimally, be sure to acquire the free *Canvas*, Canvas by Instructure, available in iTunes or the Google Play Store.

**Camera** - Be able to take photographs and perhaps record videos. Minimally, you will need to be able to take pictures to upload to iNaturalist. A smartphone with a camera is ideal, but a digital camera and a computer will work too.

CONNECTION AND SOFTWARE:

**High-speed internet** - You'll need high-speed internet service from cable, DSL, or satellite providers in order to access course resources, e.g., Canvas. This is Humboldt County and outages happen! Don't wait until the last minute to print lab handouts, etc.

**Browsers** - You will need to use the most recent version of Mozilla, Firefox, and/or Chrome. Internet Explorer and Canvas don't get along.

**Word Processing and Graphing Software** - You need Microsoft Word or a similar word processing program for writing assignments, Microsoft Excel or a similar spreadsheet program for graphing assignments, and Acrobat Reader or a similar program to allow you to read and download pdf files. All students at CR have access to Office 365 (Word, PowerPoint, Excel, and OneNote) free with a valid @mycr.redwoods.edu email account. Go to *Office 365 for Education* to get started.

Check *Online Course Support* and the resources therein if you are having difficulties with Canvas, etc.