

# BIOE 155 Freshwater Ecology

July 27 – August 28, 2020

M W 9:00 – 12:30 PDT

*In person, remote online instruction*



## Instructor

**Megan Sabal**

(she/her/hers)

[msabal@ucsc.edu](mailto:msabal@ucsc.edu)

Office hours: Tu 4-5 pm  
and Th 4-5 pm in [Megan's  
Zoom Room](#)



## Teaching Assistant

**Kat Dale**

(she/her/hers)

[kdale@ucsc.edu](mailto:kdale@ucsc.edu)

Office hours: M/W 1-  
2 pm and F 10-11 am  
in [Kat's Zoom Room](#)

I value inclusivity, student-centered exploration, and learning content and skills that will benefit you along your academic journey. Given COVID-19 and remote online instruction, I hope we all embrace patience, flexibility, and understanding to support our learning in unusual times.

## Course Description

Together we will explore amazing and fascinating freshwater ecosystems!

- First half: lakes & ponds (i.e. lentic ecosystems)
- Second half: streams & rivers (i.e. lotic ecosystems)

## Learning Objectives

1. Students will be able to **describe the physical, chemical, and biological processes in lakes and streams**. Students will apply these concepts in short answer exam questions and be able to communicate connections in a final presentation.
2. Students will improve their ability and efficiency to **comprehend scientific journal articles** by reading articles and discussing scientific content and the reading process.
3. Students will **evaluate the reasons for and consequences of human interactions with freshwater ecosystems** through examples in lectures and scientific journal articles.

## Course Materials

- Brönmark, C. and Hansson, L. (2018) The Biology of Lakes and Ponds. 3<sup>rd</sup> Edition. (B&H)
- Allan, J. and Castillo, M. (2007) Stream Ecology: Structure and Function of Running Waters. 2<sup>nd</sup> Edition. (A&C)
- Various primary research articles available on Canvas course site

Textbooks are **available online for free** as **optional, additional resources** to supplement your learning. I will highlight where lecture content is reviewed in the textbooks. [You can access the e-book editions from the UCSC library with this link.](#)

Remote Learning Resources: [Visit for tips and resources concerning remote learning.](#)

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## Assignments & Grading

Lentic Exam: 25%

Lotic Exam: 25%

Final Project: 25%

Reading Quizzes: 15%

Participation (attendance, activities): 10%

Active Reading Notes: extra credit (3% max)

## Class Format and Expectations

**Before class** students are expected to read the assigned journal article(s) and take the associated reading quiz in Canvas. Students may turn in active reading notes for extra credit.

**During class** we will cover two lectures, which will be interspersed with activities (reflections, discussions, quizzes, etc.). We will also discuss the assigned scientific journal article(s). We will take breaks throughout class between each lecture and the paper discussion.

**Detailed schedule in the table below.**

## Canvas

We will use [Canvas](#) to share class materials: log-in with your UCSC email and password.

## Zoom

Getting started:

- Sign in to [ucsc.zoom.edu](https://ucsc.zoom.edu) with your CruzID and Gold credentials to activate your account.
- [Download Zoom](#) and test your webcam and microphone at least 24 hours before the first scheduled meeting by joining a [Test meeting](#).
- Join every session using your full first and last name.

During class:

- A stable internet connection is strongly recommended, as well as earbuds/headphones.
- Find a quiet place so that you can be fully engaged and not distracted.
- Mute your audio unless you are speaking to prevent unintentional background noise.
- Use the Chat or Raise Hand feature to ask questions.

Class Recordings:

Zoom lectures will be recorded and available in Canvas in the YuJa tab. By participating in Zoom class sessions, you are consenting to be recorded.

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## Schedule

Date	Before Class	In Class	Textbook Resources
Mon, July 27	Post to discussion board	Lec 1: Why study freshwater ecology Lec 2: Overview of lakes	B&H Ch 1
Wed, July 29	Schindler 1974 Winder et al. 2009	Lec 3: Physical & chemical processes in lakes Lec 4: Lake organisms and adaptations	B&H Ch 2, Ch 3
Mon, Aug 3	Wuellner et al. 2010	Lec 5: Population ecology in lakes Lec 6: Species interactions in lakes	B&H Ch 4
Wed, Aug 5	Carpenter 1985	Lec 7: Community ecology in lakes Lec 8: Ecosystem ecology of lakes	B&H Ch 5
Mon, Aug 10	Petchey et al. 1999 Vadeboncoeur et al. 2011	Lec 9: Lake Biodiversity <b>Time to take Exam</b>	B&H Ch 6
Wed, Aug 12	Vannote et al. 1980 <b>Lentic Exam DUE</b>	Lec 10: Overview of stream and river ecosystems Lec 11: Physical & chemical processes in streams	A&C Ch 1-5
Mon, Aug 17	Schindler et al. 2010	Lec 12: Stream organisms and adaptations Lec 13: Population ecology in streams	A&C Ch 6, Ch 9
Wed, Aug 19	Power 1990	Lec 14: Community ecology in streams Lec 15: Ecosystem ecology in streams	A&C Ch 8, 10-12
Mon, Aug 24	Taylor et al. 2006	Lec 16: Human impacts on streams <b>Time to take Exam</b>	A&C Ch 13
Wed, Aug 26	<b>Lotic Exam DUE</b> <b>Final Project DUE</b>	Final project presentations	

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## Important Summer Session Remote 2020 Deadlines:

Session 2:

Drop: Monday, August 3

Request for “W”: Friday, August 14

Summer is unique. **You will not be dropped for non-attendance or non-payment.** You must drop yourself. Dropping before the deadline results in a full-tuition reversal/refund. Withdraw posts a W for the grade and full tuition is charged (no refund).

For all dates and deadlines, including ‘change of grade option’ (P/NP) and grades due, here is the summer academic calendar: <https://summer.ucsc.edu/studentlife/index.html>

For questions about dropping, requesting a W grade for a course, or withdrawing from the summer quarter, email [summer@ucsc.edu](mailto:summer@ucsc.edu).

## Policies

Attendance:

We will use class time to integrate learning through lectures, activities, and discussions. Therefore, attendance and engagement are key to your own and your classmates’ learning. Of course, unexpected circumstances arise, therefore, **you can achieve full attendance credit by attending 8/10 classes (no questions asked)**. If you need to miss more than two classes due to unforeseen circumstances, please contact me so we can discuss options.

Late assignments:

- Late exams will receive a 5% penalty per day late.
- Reading quizzes and extra credit active notes cannot be turned in late (0% credit).

Accessibility:

We strive to create an environment where all students have opportunities to learn and succeed. Please let us know if any course materials are not accessible to you. The [Disability Resource Center \(DRC\)](#) reduces barriers to inclusion and full participation by providing support to individually determine reasonable academic accommodations. Operations continue via remote appointments. If you have questions or concerns about exam accommodations or any other disability-related matter, email the DRC Schedulers at [drc@ucsc.edu](mailto:drc@ucsc.edu) for an appointment. Please share any accommodation requests from the DRC. We are happy to work towards solutions together.

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Academic misconduct:

We value integrity. Both students and instructors are expected to avoid and prevent academic misconduct. Potentially relevant to this class, misconduct includes cheating, plagiarism, providing false information, harassment, and alcohol and drug policy violations. If misconduct is suspected, an [anonymous misconduct form can be submitted by instructors or students](#).

In the event a student is found in violation of the UCSC Academic Integrity policy, he or she may face both academic sanctions imposed by the instructor of record and disciplinary sanctions imposed either by the provost of his or her college or the Academic Tribunal convened to hear the case. Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript. [The full process of and penalties for academic misconduct can be found here](#).

Title IX:

The university cherishes the free and open exchange of ideas and enlargement of knowledge. To maintain this freedom and openness requires objectivity, mutual trust, and confidence; it requires the absence of coercion, intimidation, or exploitation. The principal responsibility for maintaining these conditions must rest upon those members of the university community who exercise most authority and leadership: faculty, managers, and supervisors.

The university has therefore instituted a number of measures designed to protect its community from sex discrimination, sexual harassment, sexual violence, and other related prohibited conduct. [Information about the Title IX Office](#), the [online reporting link](#), applicable campus resources, reporting responsibilities, the [UC Policy on Sexual Violence and Sexual Harassment](#), and the UC Santa Cruz Procedures for Reporting and Responding to Reports of Sexual Violence and Sexual Harassment can be found at [titleix.ucsc.edu](http://titleix.ucsc.edu).

The Title IX Office is actively responding to reports and requests for consultation. If you are not currently working with someone in the office and want to make a report/request a consult, you can expect the fastest response by using our [online reporting link](#).

For more information please visit the [Title IX Operations under Covid-19](#) page.