

**BIOE 127/127L - Ichthyology & Lab
Summer 2024 (Session 2)**

Instructor: Eric Witte <ewitte@ucsc.edu>

Student hours: by appointment - M, W in person; Tu, Th, Fri via Zoom

Teaching Assistant: Shinji Yamamoto <syamamo5@ucsc.edu>

Student hours: M, W 6:00 pm - 6:45 pm via [Zoom](#) or by appointment

Reader: Milagros Rivera <migriver@ucsc.edu>

Section times:

Lecture: M & W 9:00 am - 12:30 pm Coastal Biology Building 110

Lab: M & W 1:00 pm - 4:30 pm Coastal Biology Building 115

Course objectives: Students will:

- Develop understanding of fish classification, evolution, ecology, physiology, and morphology;
- Develop foundational ichthyology methods;
- Improve skills in critically evaluating primary literature;
- To gain experience posing and testing hypotheses.

Course materials:

Lab notebook (required) letter size (8.5 in x 11 in) or comparable; unlined

Pencil (required)

Ruler (required) with metric measurements

Textbook (optional): The Diversity of Fishes: Biology, Evolution, and Ecology 2nd Edition, by Gene Helfman, Bruce B. Collette, Douglas E. Facey, Brian W. Bowen

Grading overview:

Lecture (5 units) and lab (2 units) have separate grades for each

Lecture grade: 25% Quiz 1 (diversity of fishes); 25% Quiz 2 (physiology & anatomy); 25% Final (ecology); 15% Paper; 10% daily summaries (completion)

*Note: as a Disciplinary Communications (DC) class, the paper assignment is necessary to pass the course; you must receive a passing grade on the paper to pass the course.

*Extra credit: stump the teacher - you may submit a picture of a fish and prepare a short description of its name and biology; if I cannot identify it (and I cannot identify most) you will receive 3 extra percentage points

Lab grade: 80% lab assignments; 20% lab practical

Assignments:

Quizzes & final: will be formatted with both multiple choice and short answer questions; they will be taken in-person and on-paper; if there is a conflict, you

BIOE 127/127L - Ichthyology & Lab
 Summer 2024 (session 2) - Witte

should contact me before the test; they are non-cumulative, however there will be an optional section on the final that may be averaged with your quiz 1 and quiz 2. Paper: The paper must compare two fish-related scientific articles; one should cite the other; it should be about 1.5-2 pages in length (double-spaced); I recommend that you compare either methods or results/discussion, however if there is another approach you would like to take, please discuss it with me in office hours. You will be assessed on creating a substantive comparison between the two papers; using precise vocabulary; and using a logical structure for comparison.

Daily summaries: Some days you will receive a prompt; others you will be asked to summarize your key takeaways and remaining questions. You will receive full credit for a thoughtful response that allows me to see how class is going for you (est 3-4 sentences)

Labs: each lab has an assignment that matches it. Many points are allocated for observations and following scientific conventions. Rubrics are available for each assignment

Lab practical: this will assess your lab-related skills, including meristic/morphometric values, drawing to scale, identifying anatomy of fishes (internal and external), etc. It will be taken in class and answers submitted virtually.

Schedule:

Day	Section	Topic	Assignment Due
Jul 29 - M	Lecture	Definitions, methods and history of ichthyology	
	Lab	N/A	
Jul 31 - W	Lecture	Systematics; evolution; phylogenetics	
	Lab	Agnatha; chondrichthyes; sarcopterygians *lecture format	
Aug 5 - M	Lecture	Scientific illustration *lab format will take place in lab	
	Lab	Meristics & morphometrics	
Aug 7 - W	Lecture	Non-teleostean & teleostean; form & movement	
	Lab	Diversity of fishes/tree drawing	

BIOE 127/127L - Ichthyology & Lab
 Summer 2024 (session 2) - Witte

Aug 12 - M	Lecture	Physiology; feeding	Quiz 1
	Lab	Fishes in jars	
Aug 14 - W	Lecture	Reproduction; perception; behavior	Paper draft
	Lab	Shark dissection	
Aug 19 - M	Lecture	Marine ecology; speciation genetics	Quiz 2
	Lab	Bony fish dissection	
Aug 21 - W	Lecture	Zoogeography; habitats; coral reef; polar regions	Paper final; submit stump the teacher
	Lab	Tidepools	
Aug 26 - M	Lecture	Fisheries & conservation; stump the teacher	
	Lab	Lab practical	Lab Practical
Aug 28 - W	Lecture	Final	Final
	Lab	N/A	

Academic Integrity:

Students are expected to submit original work for all assignments. Academic dishonesty includes cheating, fabricating work, plagiarism and facilitating academic dishonesty for other students. ChatGPT and AI are not allowed (and not very effective for most of the assignments). Consequences of academic dishonesty include no credit for the assignment and additional sanctions. See [UCSC Academic Misconduct Policy](#) for more information.

Title IX:

The UC Policy on Sexual Violence and Sexual Harassment designates faculty and student employees (including faculty, instructors, TAs, readers, tutors, etc.) as “responsible employees”. They are required to notify the Title IX Officer of any reported incidents of sexual harassment and sexual violence (including sexual assault, domestic and dating violence, stalking etc.) that involves students. The CARE Office can provide confidential support, resources, and assist with academic accommodations. To make a Title IX report, please contact the Title IX Office at (831)459-2462 or usign the website: <https://titleix.ucsc.edu/> The Title IX

BIOE 127/127L - Ichthyology & Lab
Summer 2024 (session 2) - Witte

Office can also assist with academic, housing, and transportation adjustments and may implement interim and safety measures.

CARE:

UCSC Campus Advocacy, Resources & Education (CARE) works to create a safe and equitable environment that is free from violence, exploitation and harassment. **For an appointment, call 831-502-2273 or email care@ucsc.edu.**

DRC Accomodation:

If you qualify for classroom accommodations because of a disability, please submit your Accommodation Authorization from the Disability Resource Center (DRC) to me after class or during my office hours, or online through the DRC office, in a timely manner, preferably within the first week of the summer session. Contact DRC at 831-459-2089 or by email at drc@ucsc.edu.