

**SUMMER GRADUATE COURSE
@ FRIDAY HARBOR LABORATORIES,
University of Washington, WA, USA.**

FISH SWIMMING: **Kinematics, Ecomorphology, Behavior & Environmental Physiology**

July 17.th - August 18.th 2023

5 weeks: M-F 8-5; S 8-12

BIOL 533 B (9 credits)

Instructors:

Dr. Paolo Domenici (CNR, Italy), Dr. John Steffensen (University of Copenhagen, Denmark)
and Jacob Johansen (University of Hawaii).

Course description: Fish swimming is a multidisciplinary area of research that encompasses biomechanics, physiology, ecology and behavior. Knowledge of fish swimming is relevant both for students interested in mechanisms of locomotion, and those interested in locomotor adaptations to the environment. The main subjects will be 1) the kinematics and performance of swimming in fish using various locomotory modes, 2) the ecomorphology of fish locomotion, 3) locomotor strategies, 4) metabolic aspects of fish swimming, and 5) the effect of various environmental factors on fish swimming. These topics will be treated in lectures and laboratory sessions. Students will learn techniques of video analysis, kinematics, energetics and respirometry. The first half of the course will have an emphasis on lectures and explanations of techniques for studying fish swimming in the laboratory. In the second half of the course, emphasis will be placed on laboratory work. Students will pursue independent research projects. Enrolment will be limited to 15 graduate students.

For additional information contact: paolo.domenici@cnr.it or jfsteffensen@bio.ku.dk
Information for applicants (including tuition and financial aid) can be found at

<https://fhl.uw.edu/courses/course-descriptions/course/fish-swimming-2023/>

<http://depts.washington.edu/fhl/>

<http://www.mbl.ku.dk/JFSteffensen/fhl>

<https://www.researchgate.net/project/UW-Friday-Harbor-Labs-Fish-Swimming-Course>

Deadline for application: March 1st 2023. Early applications are encouraged.