

# BIOLOGY 335 (20409) Jan 2023 ICHTHYOLOGY

## Biology of Fishes

- Lecturer: Dr. T. E. Reimchen(reimchen@uvic.ca)
- Lecture: 0830-0920, Tues, Wed, Fri
- Laboratory Co-ordinator Dr. Rossi M. Marx (zoology@uvic.ca)
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- **Outline of Lecture Topics**
- **General morphology and anatomy of fishes**
- **Diversity** - hagfish to manta ray
- - lungfish to salmon
- - rockfish to halibut
- **Swimming hydrodynamics** - propulsion, drag, fin function
- **Physiology** - buoyancy, osmoregulation, O<sub>2</sub> uptake
- **Sensory modes** - chemoreception, mechanoreceptors, electroreception, vision, nociception, perception
- **Behavioral ecology** - reproduction, foraging, soundscape, parasitism
- **Natural selection and adaptation**
- **Fisheries science** - principles, applications, limitations
- **Global fishery crisis** - major causes
- **Conservation : marine-** Law of the Sea, FAO Code of Conduct, no-take zones, marine protected areas, coral reefs
- **Conservation : freshwater** - habitat degradation, invasive species
- **The future??**

## Biology 335- Lab Schedule- Spring 2023

Lab #	Date	Content
1	January 12	<ul style="list-style-type: none"><li>• Exercise: Fish anatomy and measurements</li><li>• Identification 1: Agnathans, Placoderms, and Chondrichthyes</li><li>• Ecological Techniques 1</li></ul>
2	January 19	<ul style="list-style-type: none"><li>• Exercise: Functional Morphology</li><li>• Identification 2: Sturgeons to Herrings</li></ul>
3	January 26	<ul style="list-style-type: none"><li>• Exercise: Measurement bias Part 1</li><li>• Identification 3: Ostariophysi: Minnows to Catfishes</li><li>• Ecological Techniques 2</li></ul>
4	February 2	<ul style="list-style-type: none"><li>• Exercise: Measurement bias Part 2</li><li>• Identification 4: Salmon to Trout-Perches</li></ul>
5	February 09	<b>Lab Midterm Exercise/ Identification Exam</b>
6	February 16	<ul style="list-style-type: none"><li>• Exercise: Hydrodynamics</li><li>• Identification 5: Flying fish, Sticklebacks, Rockfish, Sculpins</li><li>• Ecological Techniques 3</li></ul>
	February 23	READING BREAK – NO LABS
7	March 02	<ul style="list-style-type: none"><li>• Identification 6: Wolf-eels, Gunnels, Sandlances to Surgeonfishes</li><li>• Ecological Techniques 4</li></ul>
8	March 09	<ul style="list-style-type: none"><li>• Identification 7: Fighting fish, Flatfishes, Triggerfishes, Sunfish</li></ul>
9	March 16	<ul style="list-style-type: none"><li>• Exercise: Emerging Techniques in Ichthyology (Soundscape)</li><li>• Identification Review</li></ul>
9	March 23	<b>Lab Final Exercise/ Identification Exam</b>
10	March 30	Exam viewing



- **Course reading material:**

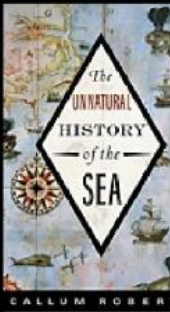
- **Text Books (Optional) :** Fishes: An introduction to Ichthyology
- **Authors:** Moyle and Cech, 2004. - second hand copies will do
- **Texts in Reserve Reading Room (McPherson Library):**
- Helfman, Collette and Facey, 1997, The diversity of fishes
- Moyle and Cech; Fishes: An Introduction to Ichthyology
- **Lecture Abstracts from primary literature**

- **Thought-provoking reading:**

- \*C. Roberts- 2007. The Unnatural History of the Sea
- R. Ellis 2003 -The Empty Ocean:
- C. Safina 1998 -Song for the Blue Ocean
- M. Harris 1998- Lament for an Ocean
- A. Mitchell 2009 - Sea Sick
- **Suggested viewing:** Blue Planet2 , Planet Earth, Seaspiracy, Sharkwater, etc

- **MARKS**

- **Lecture exams**
- **Midterm Quiz (Fri, Feb 17) (short answers) 25%**
- **Final Exam (TBA) (multi-choice, short essays) 30%**
- **Laboratory (schedule available soon) 45%**



The midterm exam is composed off short answers on lecture content (17%) in addition to questions on two pre-assigned readings (4% each).

The final lecture exam (multiple choice, short written answers and short essay) will be cumulative but with emphasis (>80%) on material since the midterm.

Students not wanting their marks posted using ID# (last 5 digits) should notify me at the beginning of the term. It is the student's responsibility to meet the ADD/DROP dates from the UVic calendar. Students are responsible for checking their own records and registration status and should review the UVic student code of conduct. Deferred exams will be offered only for medical issues. A supplementary exam is not permitted for those who get less than 50% in the course. Students receiving less than 45% on the final lecture exam receive a failing grade for the course.

All lectures are in-person (unless medical issues deem otherwise). Lecture material will be posted on Bright Spaces by 1600hrs the same day. Lectures are also video-taped but audio is not of consistent quality. Lecture attendance is encouraged.