

BIOLOGY 335 (20403) Jan 2021 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 (Zoom, synchronous)**
- **General morphology and anatomy of fishes**
- **Diversity**
 - hagfish to shark
 - lungfish to salmon
 - rockfish to sunfish
- **Swimming hydrodynamics - propulsion, drag, fin function**
- **Physiology - buoyancy, osmoregulation, O₂ uptake**
- **Sensory modes - chemoreception, mechanoreceptors, electroreception, vision, nociception, perception**
- **Behavioral ecology - reproduction, foraging, 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??**

- **Course reading material: Abstracts from primary literature**
- **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 Powerpt images and audiofiles will be available from BrightSpaces 335 course pages**

- **Thought-provoking reading: C. Roberts- 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 Planet, Blue Planet2 , Planet Earth, Deep Blue, Oceans, Sharkwater, etc**

- **MARKS**

- **Lecture exams (on BrightSpaces, open book):**
- **Midterm Quiz#1 (Jan 29) (short answer) 5%**
- **Midterm Quiz#2 (Feb 23) (short answer) 10%**
- **Midterm Quiz#3 (Mar 24) (short answer) 10%**
- **Final (TBA) (multi-choice, short essays) 30%**

- **Laboratory (on-line) 45%**

Note: 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. Deferred exams will be offered only for medical issues. Students receiving less than 45% on the final lecture exam receive a failing grade for the course.



Biology 335- Lab Schedule- Spring 2021

Lab #	Date	Content
1	January 14	<ul style="list-style-type: none">• Basic fish anatomy• Identification 1: Agnathans, Placoderms, and Chondrichthyes• Ecological Techniques 1
2	January 21	<ul style="list-style-type: none">• Exercise: Functional Morphology/ Morphometrics• Identification 2: Sturgeons to Herrings• Ecological Techniques 2
3	January 28	<ul style="list-style-type: none">• Identification 3: Minnows, Salmon, and Trout-Perches• Ecological Techniques 3
4	February 4	<p>Lab Midterm Quiz: Ecological Techniques (1-3)</p> <ul style="list-style-type: none">• Identification 4: Flying fish, Sticklebacks• Ecological Techniques 4
5	February 11	Lab Midterm Exercise/ Identification Exam
	February 18	READING BREAK – NO LABS
6	February 25	<ul style="list-style-type: none">• Exercise: Hydrodynamics• Identification 5: Rockfish, Wolf-eels• Ecological Techniques 5
7	March 4	<ul style="list-style-type: none">• Exercise: Freshwater Fishes and Open-source Fish Data• Identification 6: Sandlances, Surgeonfishes• Ecological Techniques 6
8	March 2	<ul style="list-style-type: none">• Exercise: Marine Fishes and Global Data Sets• Identification 7: Fighting fish, Flatfishes, Triggerfishes, Sunfish• Ecological Techniques 7
9	March 11	<p>Lab Final Quiz: Ecological Techniques (4-7)</p> <ul style="list-style-type: none">• Exercise: Emerging Techniques in Ichthyology• Identification Review
10	March 18	Lab Final Exercise/ Identification Exam
	March 25	NO LABS – view final quiz and exam



Lab Mark Breakdown

Your lab mark is 40% of your final course grade and is divided as follows:

Component	Mark
Lab Participation You will participate in lab exercises, and will receive marks for doing so. Your TA will outline what is expected during lab.	7%
Midterm: Ecological Techniques – written exam	5%
Midterm: Photos- identification + questions	10%
Final: Ecological Techniques – written exam	5%
Final: photos - identification + questions	13%
Total	40%

NOTE:

The ecological techniques midterm and final quiz are open book.

The ecological techniques final exam is not cumulative.

The Lab Exercises and Photos midterm and final exam are open book – Your lab TA will say more about this.

The Lab Exercises and Photos final exam is cumulative; however, the majority of the exam will be based on material presented after the midterm.