BIOLOGY 335 (20415) Jan 2022 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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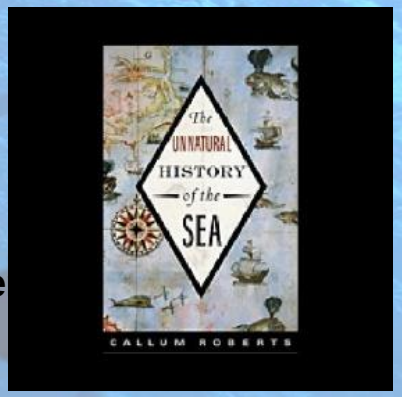
- **Outline of Lecture Topics** (online first two weeks, synchronous)
- General morphology and anatomy of fishes
- Diversity - hagfish to manta ray
- - lungfish to salmon
- - rockfish to halibut
- Swimming hydrodynamics - propulsion, drag, fin function
- Physiology - buoyancy, osmoregulation, O_2 uptake
- 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??

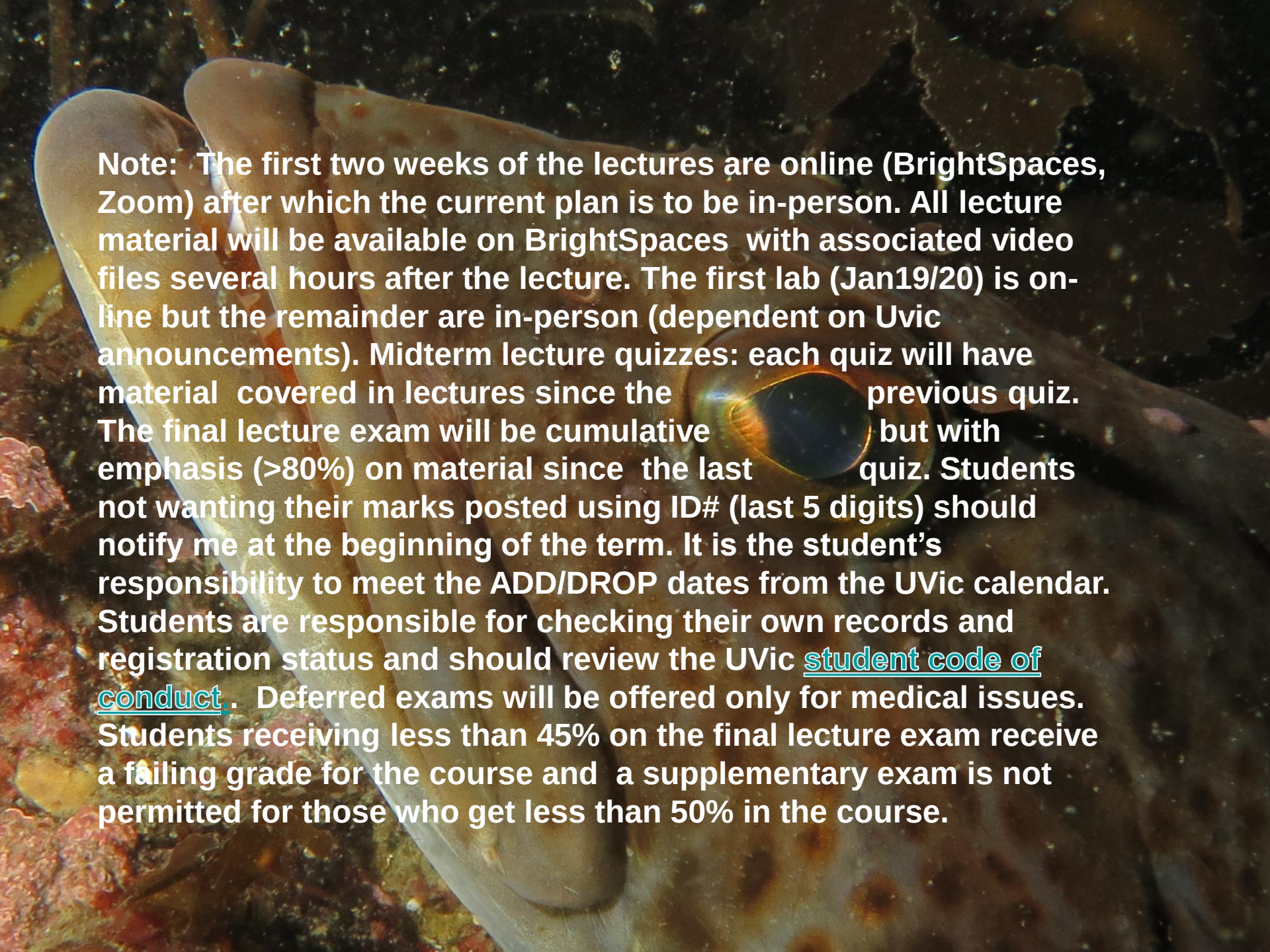
- **Course reading material: Abstracts from primary literature**
- **Text Books (Optional) : Fishes: An introduction to Ichthyology**
- **Authors: Moyle and Cech, 2004. - second hand copies will do**
- **Texts in Reserve Reading Room (McPherson Library):**
- **Helfman, Collette and Facey, 1997, The diversity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

- **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 Planet2 , Planet Earth, Seaspiracy, Sharkwate**



- **MARKS**
- **Lecture exams**
- **Midterm Quiz#1 (Fri, Feb 4) (multiple choice and/or short answers) 10%**
- **Midterm Quiz#2 (Fri, Mar 11) (multiple choice and/or short answers) 15%**
- **Final (TBA) (multi-choice, short essays) 30%**

- **Laboratory 45%**



Note: The first two weeks of the lectures are online (BrightSpaces, Zoom) after which the current plan is to be in-person. All lecture material will be available on BrightSpaces with associated video files several hours after the lecture. The first lab (Jan19/20) is on-line but the remainder are in-person (dependent on Uvic announcements). Midterm lecture quizzes: each quiz will have material covered in lectures since the previous quiz. The final lecture exam will be cumulative but with emphasis (>80%) on material since the last quiz. 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. Students receiving less than 45% on the final lecture exam receive a failing grade for the course and a supplementary exam is not permitted for those who get less than 50% in the course.

Biology 335- Lab Schedule- Spring 2022

Lab #	Date	Content
1	January 19/20	Introductory lab (online)
2	January 26/27	• Exercise: Fish anatomy and measurements • Identification 1: Agnathans, Placoderms, and Chondrichthyes • Ecological Techniques 1 •
3	February 2/3	• Exercise: Functional Morphology • Identification 2: Sturgeons to Herrings • Ecological Techniques 2
4	February 9/10	• Exercise: Exercise: Measurement bias Part 1 • Identification 3: Minnows, Salmon, and Trout-Perches • Ecological Techniques 3
5	February 16/17	**Lab Midterm Quiz: Ecological Techniques (1-3)** • Exercise: Measurement bias Part 2 • Identification 4: Flying fish, Sticklebacks • Ecological Techniques 4
	February 23/24	READING BREAK – NO LABS
6	March 02/03	**Lab Midterm Exercise/ Identification Exam**
7	March 09/10	• Exercise: Hydrodynamics • Identification 5: Rockfish, Wolf-eels • Ecological Techniques 5
8	March 16/17	• Exercise: Freshwater fishes and open-source fish data • Identification 6: Sandlances, Surgeonfishes • Ecological Techniques 6
9	March 23/24	• Exercise: Marine fishes and global data sets • Identification 7: Fighting fish, Flatfishes, Triggerfishes, Sunfish • Ecological Techniques 7
10	March 30/31	**Lab Final Quiz: Ecological Techniques (4-7)** • Exercise: Emerging Techniques in Ichthyology • Identification Review
11	April 6/7	**Lab Final Exercise/ Identification Exam**

Lab Mark Breakdown

Your lab mark is 45% 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 exam: Ecological Techniques – written exam	6%
Midterm Exercises / Identification Exam: Fish identification + questions	11%
Final exam: Ecological Techniques – written exam	8%
Final Exercises / Identification Exam: Fish identification + questions	13%
Total	45%

NOTE:

The ecological techniques final exam is not cumulative.

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