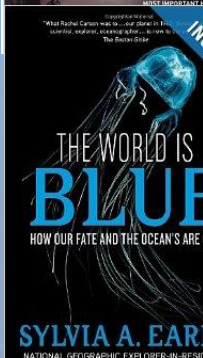
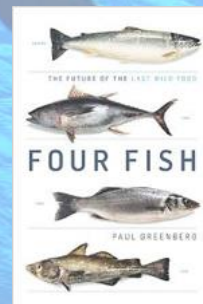


BIOLOGY 335 (20356) Jan 2020 ICHTHYOLOGY

Biology of Fishes

- **Lecturer: Dr. T. E. Reimchen, Office-Cunn 056, Phone 721-7101**
- **Lecture: 0830-0920, Tues, Wed, Fri; COR A125**
- **Laboratory Co-ordinator Dr. Rossi M. Marx (zoology@uvic.ca)**
- **Laboratory: Petch 110**
-
- **Outline of Lecture Topics**
- **General morphology and anatomy of fishes**
- **Diversity** - hagfish to tiger shark to manta ray
- - lungfish to moray to salmon to lanternfish
- - rockfish to seahorse to halibut to sunfish
- **Swimming hydrodynamics** - propulsion, drag, boundary layer, fin function
- **Physiology** - buoyancy, osmoregulation, thermoregulation, 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 and invasive species
- **The future??**

- **Course reading material:**
- **Text Books (Optional) :** **Fishes: An introduction to Ichthyology**
Authors: Moyle and Cech, 2004. Cost- 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**
- **Most powerpt images used in the lectures are available from the Biol 335 CourseSpaces website after the lectures.**
- **Thought-provoking: 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**
- **S. Earle 2010 -The World is Blue**
- **DVD: Suggested viewing: Blue Planet and Blue Planet2* by Attenborough; Planet Earth; Deep Blue; Oceans; Sharkwater**
- **Students are expected to browse ichthyological content relevant to lecture material of online biological periodicals : New Scientist, Science, Trends in Ecology and Evolution.**
- **Web of Science, Google Scholar, Wikipedia,**



Grades

Lectures (50%)

Mid-term Exam(multiple choice)	20% (Feb 18,
Pop lecture quiz	5%(date- TBA)
Final Exam (multiple choice and essay)	25% (date-TBA)

Laboratory (50%)

Biology 335- Tentative Lab Schedule- Spring 2020

Lab #	Date (week of)	Content
1	January 6	<ul style="list-style-type: none"> Exercise: Fish Anatomy and Measurements Identification 1: Agnathans, Placoderms, and Chondrichthyes Ecological Techniques 1
2	January 13	<ul style="list-style-type: none"> Exercise: Functional Morphology Identification 2: Sturgeons to Herrings Ecological Techniques 2
3	January 20	<ul style="list-style-type: none"> Exercise: Measurement Bias Part 1 Identification 3: Minnows, Salmon, and Trout-Perches Ecological Techniques 3
4	January 27	Lab Midterm Quiz: Ecological Techniques (1-3) <ul style="list-style-type: none"> Exercise: Measurement Bias Part 2 Identification 4: Flying fish, Sticklebacks Ecological Techniques 4
5	February 3	Lab Midterm Exercise/ Identification Exam
6	February 10	<ul style="list-style-type: none"> Exercise: Hydrodynamics Identification 5: Rockfish, Wolf-eels Ecological Techniques 5
	February 17	READING BREAK – NO LABS
7	February 24	<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 9	Lab Final Quiz: Ecological Techniques (4-7) <ul style="list-style-type: none"> Exercise: Emerging Techniques in Ichthyology Identification Review
10	March 16	Lab Final Exercise/ Identification Exam
	March 23	NO LABS – Hand back final quiz and exam

Lab Mark Breakdown

Your lab mark is 50% of your final course grade and is divided as follows:

Component	Mark
Field Trip Participation There will be a series of 4-6 scheduled field trips. You are expected to participate in each, but are required to participate in 2 of these trips	2%
Lab Participation You will participate in weekly lab exercises, and will receive a participate mark for doing so. Your TA will outline what is expected during each lab.	5%
Midterm: Ecological Techniques – written exam	8%
Midterm: Identification/Exercise	12%
Final: Ecological Techniques – written exam	8%
Final: Identification/Exercise	15%
Total	50%

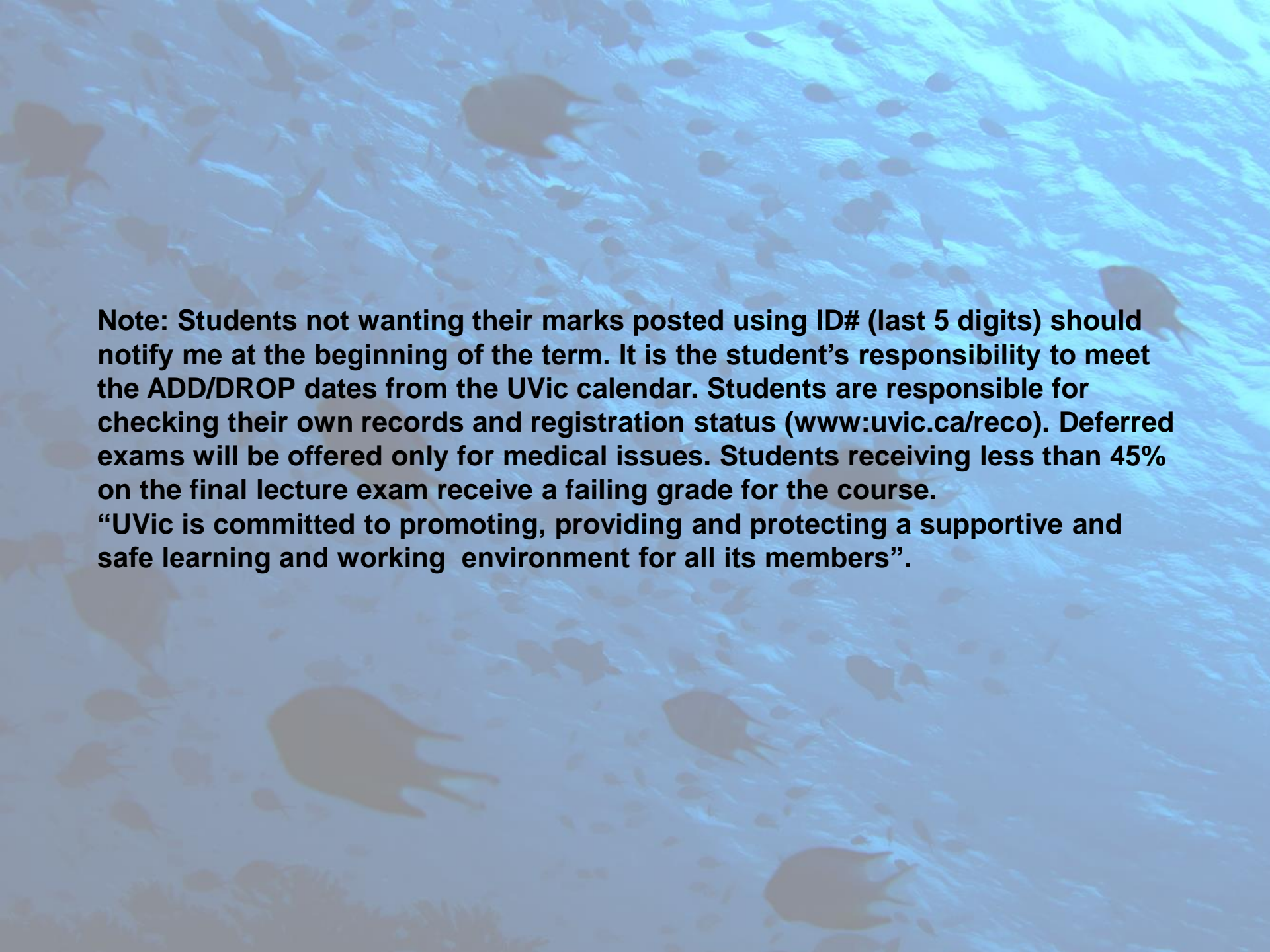
NOTE:

The ecological techniques midterm and final quiz are closed book.

The ecological techniques final exam is not cumulative.

The Identification/Exercise midterm and final exam are open book – Your lab TA will say more about this.

The Identification/Exercise final exam is cumulative; however, **the majority** of the exam will be based on material presented after the midterm.



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 ([www:uvic.ca/reco](http://www.uvic.ca/reco)). 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. "UVic is committed to promoting, providing and protecting a supportive and safe learning and working environment for all its members".