

# Biology 3241: Fishes and Fisheries

Dr. Dennis Higgs

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Online (Teams) drop-in office hours are  
Mondays from 10-11 am  
or by appointment

**Your GAs are Roselia Ayala-Osorio and Riley Beach  
they are your central resource for all things lab related**

emails: ayalaos@uwindsor.ca and beachr@uwindsor.ca

## COURSE DESIGN

Lectures will be posted as videos on Mondays and Wednesdays at 8:30 am, and there will be 4 short quizzes on Fridays (Sept 24, Oct 8, Nov 5, & Nov 12). Notes, as Powerpoint files, will also be posted to Blackboard ahead of time. Lectures will be officially asynchronous so you can watch whenever you choose. Labs will be hosted through Microsoft Teams on either Tuesdays or Thursdays at 2:30-5:20 pm (as per your schedules) starting September 14/16, 2021. Most lab sections will begin with a paper discussion on a paper given the week before and will be followed by an online lab exercise with “in-lab” assignments due to your GAs by the end of your lab section (5:20 pm). **On September 21/23 there will be an in-class field trip, not virtual. If you are uncomfortable attending this trip due to COVID concerns please let your GA know ahead of time so an alternate lab assignment can be arranged for you. You do not need a medical note to miss the field trip, just notify your GA that you will not be attending.** Your GAs and I will strive to keep this course engaging and interactive and would appreciate your patience as we all navigate these unprecedented times together.

## LEARNING OBJECTIVES

At the completion of the course, each student should be able to:

- Demonstrate familiarity with the evolution, ecology, and biology of fishes
- Define and correctly use terminology related to the anatomy of fishes and fish identification
- Distinguish numerous local species from each other, and be able to identify their key characteristics
- Identify the central importance of fish to the global ecosystem
- Read and discuss scientific papers in an intelligent fashion and understand the basics of scientific paper writing

**TEXT/READINGS:** There won't be a required textbook for this course but if you want a text, I recommend either *The Diversity of Fishes* by Helfman, Collette and Facey or *Fishes: An Introduction to Ichthyology* by Moyle & Cech. [If you don't want to buy them, check this website <https://openlibrary.org/subjects/ichthyology>]. I will assign supplemental readings throughout the semester. These may be scientific papers for discussion, or review papers for your information. You are responsible for the content in all additional readings identified as required. This is to help teach you how scientists get their information and how the information in textbooks comes into existence. I may also give you some optional information for those that are interested; I will be sure to clearly differentiate the required readings and the optional ones.

**LAB READINGS:** You are responsible for checking the website and downloading the lab exercises and papers for each week. This is to assure that you are prepared before lab starts. A few times during the semester you will have a pre-lab quiz that should be easy IF you have read the handout. Your GAs will be in charge of the quizzes.

**Approximate lecture schedule**

Date	Subject
Sept 13	Introduction to Ichthyology
Sept 15	Fish Ecology/Habitat
Sept 20 & 22	Fisheries and Conservation
Sept 27 & 29	Evolution of Fishes
Oct 4 & 6	Homeostasis
Oct 11 + 15	Reading Week
Oct 18	Finish Homeostasis & Review
Oct 20	<b>Exam I</b>
Oct 25 & 27	Biomechanics & Swimming
Nov 1 & 3	Circulation & Respiration
Nov 8 & 10	Hormones and Reproduction
Nov 15 & 17	Growth and Development
Nov 22 & 24	Fish Communication
Nov 29 & Dec 1	Evolution of Feeding Modes
Dec 6 & 8	Overflow & Review

**Grade breakdown**

Exam I	20 %
Lecture Quizzes	10%
Participation + Professionalism	5 %
Lab Assignments and Quizzes	5 %
Paper Introduction	5 %
Paper Methods	5 %
Methods Peer Review	5 %
Results and Discussion	5 %
Final Paper	5 %
Lab Exam	15 %
Final Exam	20 %

**Lab schedule**

Date	Lab topic	Due by end of YOUR lab time Submit online, unless otherwise stated
Sept 14/16	Fish Anatomy & ID	
Sept 21/23	Field trip	
Sept 28/30	Visual signalling/writing	
Oct 5/7	Rheotaxis	Methods section due
Oct 12/14	Reading week	
Oct 19/21	Coral reef eDNA	Peer review of methods due
Oct 26/28	Ecological Diversity	Introduction due
Nov 3/5	Respiration	
Nov 9/11	Age and Growth	Results and discussion sections due
Nov 16/18	Study Fish/Consult with GAs	Assemble and make changes to final paper
Nov 23/25	Lab Exam	Final paper due ( <b>NO</b> penalty if submitted by Dec 10 @ 5 pm)

**PARTICIPATION:** You will note above that some of your grade is for participation. All paper discussions and lab exercises require active participation and this will be considered when calculating your participation grade. As the class is online this year, participation will be largely judged by your **verbal** contributions to the lab based paper discussions.

**LECTURE EXAMS AND MAKEUPS:** The two lecture exams (one midterm exam and one final) will consist of multiple choice and short answer questions. Students missing exams for a legitimate reason will be offered a make-up exam but you must let Dr. Higgs know you will miss and use the "Report Illness" tab on UWinSite Student. Make-up exams will be given **within one week** of the scheduled exam date at a mutually convenient time. Students caught cheating on the exams will be referred to the Dean's office for disciplinary action.

**REGRADES:** Every attempt will be made to grade exams and assignments completely and fairly, however mistakes do occur. If you feel a mistake has occurred or you were graded unfairly you are encouraged to notify your professors. However, to avoid abusing the system some rules are needed. You have **one week after we return your exam or assignment** to apply for a regrade. No appeals will be considered after the one-week time limit. All requests for a regrade **must be in writing**. If you find a math error this also must be brought to our attention within the one-week time limit but does not require a written request.

**ACADEMIC MISCONDUCT:** Academic misconduct is not allowed in any form. This includes, but is not limited to, copying from another source (your friend, the internet, a text, etc.), allowing someone else to copy your work, communication of any kind during an exam, and using notes during an exam. The short version for your papers: if we find more than 5 words in your own work that are identical to another source and are without citation and quotation, you are plagiarising. Any incidences will be referred to the Dean's office through the formal process as outlined in University Senate Bylaw 31. <http://www.uwindsor.ca/aio/plagiarism-policies-and-definitions>.

Because academic misconduct is an extremely serious offence, I have included some examples of an excerpt of what entails academic misconduct from Bylaw 31 below. These are simply common problems but YOU ARE RESPONSIBLE FOR KNOWING WHAT CONSTITUTES ACADEMIC MISCONDUCT. If you are unsure, please consult me, your GAs and/or Bylaw 31.

"Plagiarism: the act of copying, reproducing or paraphrasing portions of someone else's published or unpublished material (from any source, including the internet), without proper acknowledgement. (Students have the responsibility to learn and use the conventions of documentation as accepted in their area of study.)"

"Submitting the same course work, research or assignment, or portions of the same course work, research or assignment, for credit on more than one occasion without the prior written permission of the instructor(s) in the course(s) involved. Taking part in unauthorized collaboration with another student which may include working in a group and submitting the same course work as one or more students, unless expressly permitted by the instructor."

"Copying or using unauthorized aids, or, without permission, working or receiving assistance from another, when writing tests or examinations (including take-home tests or examinations)."

“Allowing another student to copy one’s academic work when one knows or has reason to believe the other student will be submitting the work for evaluation.”