

Taxonomy & Behavior of Fishes Syllabus

ENR 5350.02 Autumn 2023

Course Information

- **Course times and location:**
 - Lecture: Wednesdays 9:10am to 10:05am, Heffner Building room 128
 - Labs: Wednesdays 10:20am to 1:20pm, Heffner Building room 128/TBA
Fridays 9:35am to 12:35pm, Heffner Building room 128/TBA
- **Credit hours:** 3
- **Mode of delivery:** In-person

Instructor

- **Name:** Dr. Zachary Steffensmeier (he/him)
- **Email:** steffensmeier.7@osu.edu
- **Phone Number:** 614-517-4568
- **Office location:** 414b Kottman Hall
- **Office hours:** By appointment

Graduate Teaching Assistant

- **Name:** Jai Tiarks (they/them)
- **Email:** tiarks.2@buckeyemail.osu.edu
- **Phone Number:** 614-572-3685
- **Office location:** 122 Kottman Hall
- **Office hours:** By appointment

Preferred means of communication:

- Our preferred method of communication for questions is **email, with “ENR5350.02” in the subject line**
- Class-wide communications will be sent through the Announcements tool in CarmenCanvas. Please check your [notification preferences](https://go.osu.edu/canvas-notifications) (go.osu.edu/canvas-notifications) to be sure you receive these messages.



Course Description

Freshwater fish comprise more than 30% of all vertebrate species, yet available freshwaters make up less than 1% of Earth's habitats. In this course we will explore this incredible diversity through the study of fish taxonomy and behavior, with an emphasis on understanding the evolutionary relationships between taxa and the ways that fish have adapted to a wide range of environmental conditions, including environmental variation caused by human activity.

Course Goals

1. Explore the diversity of fishes, with emphasis on the freshwater fishes of Ohio.
2. Explore fish behavior, especially as it pertains to the ways that fish respond to and interact with their social and ecological environment.
3. Promote critical thinking about how human-induced environmental change influences fish populations.

Learning Outcomes

By the end of this course, students should successfully be able to:

- identify the major groups of fishes and their evolutionary relationships.
- describe the basic biology of fishes, including morphology and anatomy, behavior, form and function.
- identify the major groups of Ohio fishes and to identify common fishes to species-level.
- identify morphological and behavioral adaptations to diverse environments.
- demonstrate basic fish collection and preservation skills.
- discuss the effects of human activities on the diversity of fishes.



How This Course Works

Mode of delivery: We will meet as one group once per week for a one-hour lecture that covers the biology, ecology, and behavior of fishes. The group will be split into two lab sections that also meets once per week for a three-hour field or lab session. The format of the labs will vary from week to week depending on planned field or lab activities. Classes and labs will be held at the Heffner Wetland Research Building; please meet in the classroom for all regular labs.

This course is 100% in-person. There are no required sessions when you must be logged in to Carmen at a scheduled time.

Laboratory and Field Activities: Labs will be used to gain hands-on experience collecting, identifying, and observing fishes, with an emphasis on Ohio fishes. While identification skills are being learned, students will also be asked to critically evaluate the morphological features we use to ID the fish, identify similarities/differences between distantly and closely related groups, and consider the linkages between these traits and the environments where the fish are found.

Field Sampling: Some labs will be devoted to collecting, preserving, and identifying fishes found in local streams, rivers, and ponds. The goal of field sampling will be to familiarize students with fish collection and handling methods, preservation techniques, and identifying live specimens. Appropriate clothing should be worn for field labs (you may get wet and dirty). Waders are available for use or you can bring your own. You will need to bring a notebook to make field notes.

Lab work: Regular labs will be devoted to learning the basic morphology of fishes through dissection, how to identify preserved fish to species, and how to quantify and analyze fish behaviors. When in the lab students should wear closed-toed shoes. Dissection materials and equipment will be provided but you can also bring your own dissection kit if you wish.

Credit hours and work expectations: This is a 3 credit-hour course. According to [Ohio State bylaws on instruction](https://go.osu.edu/credithours) (go.osu.edu/credithours), students should expect to spend around 3 hours per week per credit hour on direct instruction (e.g., instructor content, lab activities and preparation, research outside of lab time, etc.) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of [C] average.

Attendance and participation requirements: Research shows regular participation is one of the highest predictors of success. With that in mind, I have the following expectations for everyone's participation:

- Attendance for all components of this course is mandatory - missing class or lab will result in a lower participation grade.
- Unavoidable absences require prior permission of the instructor (email or phone call), or in emergency situations communicate with us when you are able (we understand that life happens).



Course Materials, Fees and Technologies

Required Materials and/or Technologies

- 1. Laboratory Manual:** We have compiled a Laboratory Manual that is available in electronic format on the class Carmen page (combined in one pdf and by lab in separate Carmen modules). You are required to access and read the section for each lab BEFORE arriving to the field site or to the lab. Note that we will periodically be updating the lab manual and will make sure to announce any changes to the class.
- 2. Text:** None – see below
- 3. Supplemental readings:** There will be **supplemental readings** assigned for discussion in some classes. These readings will be posted on Carmen. Readings are meant to augment material covered in lecture and solidify your understanding of the general concepts presented; therefore, these readings are required.
- 4. Web Resources:** The class website on CARMEN will be used to make announcements, promote peer-peer discussions, post additional readings and resources, etc. Please check it often. A class website, <https://u.osu.edu/enrfishtax/>, will be used for posting #scicomm extra credit assignments. Students must sign in to u.osu.edu and then be added to the class site in order to post their #scicomm assignments.
- 5. Field Notebook:** Each student will need a notebook to take notes during field labs. Any notebook will do, though many prefer a waterproof notebook (e.g. Rite in the Rain field books – many options).

Recommended/Optional Materials and/or Technologies

- **Highly recommend** that you consider purchasing the following texts:
 - Rice and Zimmerman. 2019. A naturalist's guide to the fishes of Ohio. Ohio Biological Survey
 - Trautman, M.B. 1981. The Fishes of Ohio (revised Ed.). Ohio State University Press, Columbus. Pp. 782.

Note: Limited copies of both texts will be available in lab for ID purposes and on reserve at the CFAES library.
- **Other Recommended Books**
 - Hubbs, C.L. and Lagler, K.F. (revised by Smith G.R.). 2004. Fishes of the Great Lakes Region. The University of Michigan Press, Ann Arbor. Pp 276.

Moyle, P.B. and Cech, J.J. 2004. *Fishes: An Introduction to Ichthyology* (5th Ed.). Prentice Hall, Upper Saddle River, NJ. Pp. 726.

Holm, E., Mandrak, N.E., and Burrige, M. 2008. *The ROM Field Guide to Freshwater Fishes of Ontario*. Royal Ontario Museum, Toronto, Ontario. Pp. 432.

Magnhagen, C., Braithwaite, V.A., and Forsgren, E. 2008. *Fish Behaviour*. CRC Press. Pp. 662.

- **Other potentially useful on-line tools:**

<http://www.fishbase.org/search.php>

<http://currents.plos.org/treeoflife/article/the-tree-of-life-and-a-new-classification-of-bony-fishes/>

<http://research.calacademy.org/redirect?url=http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>

http://swordtail.tamu.edu/anyfish/Main_Page

http://evolution.berkeley.edu/evolibrary/article/fishtree_01
[Baitfish Primer](#)

Required Equipment

- **Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection.
- **Webcam:** built-in or external webcam, fully installed and tested
- **Microphone:** built-in laptop or tablet mic or external microphone
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for [technology and internet access](http://go.osu.edu/student-tech-access) (go.osu.edu/student-tech-access).

Required Software

Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Visit the [installing Office 365](http://go.osu.edu/office365help) (go.osu.edu/office365help) help article for full instructions.

CarmenCanvas Access

You will need to use [BuckeyePass](http://buckeyepass.osu.edu) (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you do each of the following:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](http://go.osu.edu/add-device) (go.osu.edu/add-device) help article for step-by-step instructions.



- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes, good for 365 days, that can each be used once.
- [Install the Duo Mobile application](https://go.osu.edu/install-duo) (go.osu.edu/install-duo) on all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at [614-688-4357 \(HELP\)](tel:614-688-4357) and IT support staff will work out a solution with you.

Technology Skills Needed for This Course

- Basic computer and web-browsing skills
- [Navigating CarmenCanvas](https://go.osu.edu/canvasstudent) (go.osu.edu/canvasstudent)
- [CarmenZoom virtual meetings](https://go.osu.edu/zoom-meetings) (go.osu.edu/zoom-meetings)
- [Recording a slide presentation with audio narration and recording, editing and uploading video](https://go.osu.edu/video-assignment-guide) (go.osu.edu/video-assignment-guide)

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat:** go.osu.edu/it
- **Phone:** [614-688-4357 \(HELP\)](tel:614-688-4357)
- **Email:** servicedesk@osu.edu

Grading and Faculty Response

How Your Grade is Calculated

Assignment Category	Percentage
Lab Quizzes (4 total, 5% each)	20
Lecture Midterms (2 total, 10% each)	20
Fish ID Collection (4 sites, 5% each)	20
Field Notes	10
Behavior Project Paper	20
Participation	10
#scicomm (Extra Credit, optional)	3
Total	100%

See Course Schedule on Camren for due dates.

Descriptions of Major Course Assignments

Lab Quizzes (20%)

Description: There will be **four** in-lab quizzes worth 5% each. There will be **NO** final practical examination. Lab Quizzes are aimed at helping you master your identification skills, including morphology and anatomy of fishes, learned in the field and lab (e.g. fish identification) and as such are practical in nature. Quizzes are not cumulative (i.e. you will be tested on material from the previous 1-3 labs). All quizzes are mandatory and make-up quizzes will only be administered for those students with documented excuses (e.g., health or family emergency).

Midterms (20%)

Description: There will be two midterms worth 10% each. There will be **NO** final examination. Midterms will cover material presented in lecture (e.g. theory), videos, and assigned readings (i.e., the answer to the question, “Will this be on the Midterm?” is “YES”). Midterms are not cumulative but having a good grasp of the major themes and terminology presented

throughout the semester (e.g., reproductive behavior, habitat preference, etc.) will help you do well on the midterms. Both Midterms are mandatory and make-up exams will only be administered for those students with documented excuses (e.g., health or family emergency).

Field Notes (10%)

Description: Learning how to collect, preserve, and identify fishes is an essential skill-set for many careers in aquatic and environmental sciences. During several lab sessions we will collect fish from waterbodies around Columbus using a variety of methods, with the goal of learning to catch and ID fish in the field and to humanely preserve voucher samples. Each student is responsible for keeping a set of field notes for each site we visit. At the end of the semester students will compile their notes in a report form that describes the sites and the fish communities sampled (see “Field Notes Instructions” on Carmen for details).

Fish ID Collection (20%)

Description: The goal of this assignment is for students to develop expertise in identifying preserved fish specimens. For each of the four field sites that the class will visit, we have created a collection of representative species from the site (collected in previous years). For each site there are 10 jars each containing 10 fish. Students will work **outside of class/lab time** to identify each specimen in each jar (see “Fish ID Collection Instructions” on Carmen). Jars must be signed out and signed back in by one individual, one at a time. Mixing up jars or the fish in different jars will result in a penalty on your grade. The instructors and TA’s will help guide you through the identification keys but will NOT verify your identifications. An Excel template for recording your identifications will be provided on Carmen. **Note that there are four due dates associated with this assignment.** On each date students will submit their ID sheet for one site (sites can be completed in any order) and will receive feedback on that site. This process is meant to help students manage the project throughout the semester.

Graduate Student Supplement: In addition to independently identifying the species in all jars, graduate students will be required to incorporate the diversity information gathered by examining preserved specimens in their field notes report.

Behavior Project & Paper (20%)

Description: A major objective of this course is for students to learn about the behavior of fishes. Behaviors are typically easy to observe and are often the first response of an animal to environmental change. Thus, observing and quantifying fish behavior helps to increase our understanding of how fishes interact with their social and ecological environment. For this assignment students will form teams of 3-4 (graduate students must work individually, see below) and develop a hypothesis-driven observation project based on behavioral data collected from videos and/or live streams of fish freely available on the internet. Time during labs will be made available for students to work as a group on these projects. Each group will generate their own hypothesis, predictions and observational design, analyze their results and submit a short scientific report (see “Behavior Project and Paper Instructions” on Carmen). The hypothesis and observational design **must be approved by your TA.**

Graduate student supplement: Working independently, graduate students have the option of a behavioral project using a live fish set-up provided or alternatively developing a project of their own based on other media (e.g. videos, manipulative computer programs, etc.). Their project **must still be approved by the Instructor.**

Participation (10%):

Description: Attendance for all components of this course is mandatory - missing class or lab will result in a lower participation grade. Unavoidable absences require prior permission of the instructor (email or phone call). Points for participation will come from a variety of in-class assignments, discussions, and lab-based activities. Participation in on-line discussions on Carmen (e.g. posting about new fish-related discoveries from the media or scientific papers of interest, i.e. "Catch of the Day") will be monitored and considered for additional participation points.

#scicomm Assignment (*Extra Credit = 3% max*):

Description: Scientific communication, providing outreach and engagement with the public, is essential to the conservation of fish biodiversity. Increasingly, scientific communication (#scicomm) is facilitated through social media outlets such as Twitter, TikTok, Facebook, personal or lab blogs, etc. The goal of this optional assignment is for students to use multimedia formats to present a fish story that is accessible to the public. These can take the form of written blogs, sound clips, videos, animations, etc. to be posted on the class website (<https://u.osu.edu/enrfishtax/>). Students are encouraged to post on multiple topics and to direct the public to their posts via social media. Posts will be assessed for accuracy of content and accessibility to a diverse audience and deemed satisfactory or not, with an opportunity for revising the post if deemed unsatisfactory. Each satisfactory post, to a maximum of three posts, will be worth 1% on the final grade (Details on "#SciComm Instructions" sheet on Carmen).

For all written assignments:

Format and Submission: All written assignments are to be submitted electronically using Carmen by 11:59 pm on the date that they are due unless stated otherwise. Written assignments should have 1" margins, 12 pt Times New Roman font, double line spacing, and all pages should be consecutively numbered, including the cover page. All written assignments should include a cover page that provides your name, name.#, title of the assignment, and the date. In-text citations and reference lists should follow the instructions found in the [Author Guidelines for the Journal of Fish Biology](#). A single file saved as a Word document with your name and assignment title as the file name (e.g., "Doe_Research Paper") should be submitted.

Artificial intelligence usage: The use of ChatGPT or other AI services is not permitted on any written assignment or examination. If you have any questions on the use of these technologies, please ask the instructor.

Late Assignments

Please refer to Carmen for due dates. Due dates are set to help you stay on pace and to allow timely feedback that will help you complete subsequent assignments. Reports and papers are due by the times stated in the Instructions. Late assignments will not be accepted without prior permission. If you have an emergency or life situation that impacts your ability to turn in an assignment on time, please reach out directly and as soon as possible so we can discuss alternate arrangements.

Lab Attendance Policy

Missing labs will result in a 0 on the quiz and participation grade for that week. However, to get credit for the missing lab, you must email me at steffensmeier.7@osu.edu ahead of time. You must also write a 1-page paper critiquing a peer reviewed journal article based on the lab topic missed for that week (e.g. discharge in urban streams). This paper must be completed and submitted to me and the teaching assistant no later than 1 week from the initial laboratory date. The paper must be single spaced, 12-pt font, times new roman with 1-inch margins.

Instructor Feedback and Response Time

I am providing the following list to give you an idea of my intended availability throughout the course. Remember that you can call [614-688-4357 \(HELP\)](tel:614-688-4357) at any time if you have a technical problem.

- **Preferred contact method:** If you have a question, please contact me first through my Ohio State email address. I will try to reply to emails within **24 hours during normal business hours**.
- **Class announcements:** I will send all important class-wide messages through the Announcements tool in CarmenCanvas. Please check [your notification preferences](https://go.osu.edu/canvas-notifications) (go.osu.edu/canvas-notifications) to ensure you receive these messages.
- **Discussion board:** The TA will check and reply to messages in the discussion boards once mid-week and once at the end of the week.
- **Grading and feedback:** For assignments submitted by the due date, we will try to provide feedback and grades within **seven days**. Assignments submitted after the due date (with permission) may have reduced feedback and grades may take longer to be posted.



Grading Scale

93–100: A

90–92.9: A-

87–89.9: B+

83–86.9: B

80–82.9: B-

77–79.9: C+

73–76.9: C

70–72.9: C-

67–69.9: D+

60–66.9: D

Below 60: E



Other Course & OSU Policies

Covid-19 Guidelines

Health and safety requirements: All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (<https://safeandhealthy.osu.edu>). Non-compliance will result in a warning first, and disciplinary actions will be taken for repeated offenses.

Flexibility and Respect: As your instructors we understand the stress that the Covid-19 pandemic has caused in all of our lives. As we move into a new semester with all the uncertainties of the past two and a half years, we will aim to work with all students to be flexible in our class policies in order to promote a safe learning space for all.

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:**
 - **Emails:** Please write in a professional manner (i.e. use an appropriate salutation (e.g. Hi Dr. Steffensmeier,) and write in full sentences).
 - **For online discussions:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.

Academic Integrity Policy

See [Descriptions of Major Course Assignments](#) for specific guidelines about collaboration and academic integrity in the context of this online class.



Ohio State's Academic Integrity Policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's [Code of Student Conduct](http://studentconduct.osu.edu) (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- [Committee on Academic Misconduct](http://go.osu.edu/coam) (go.osu.edu/coam)
- [Ten Suggestions for Preserving Academic Integrity](http://go.osu.edu/ten-suggestions) (go.osu.edu/ten-suggestions)
- [Eight Cardinal Rules of Academic Integrity](http://go.osu.edu/cardinal-rules) (go.osu.edu/cardinal-rules)

Copyright for Instructional Materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or Email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member."

This course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles are located on the Carmen site for this course; and can also be found at <https://go.osu.edu/principlesofcommunity>. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://equityandinclusion.cfaes.ohio-state.edu/>). If you have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at <https://studentlife.osu.edu/bias/report-a-bias-incident.aspx>.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life Counseling and Consultation Services (CCS) by visiting ccs.osu.edu or calling (614) 292- 5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org

David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor. He is available for new consultations and to establish routine care. To schedule with David, please call 614-292-5766. Students should mention their affiliation with CFAES when setting up a phone screening. Accessibility Accommodations for Students with Disabilities

Requesting Accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with [Student Life Disability Services \(SLDS\)](#). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's [request process](#), managed by Student Life Disability Services.

Disability Services Contact Information

- Phone: [614-292-3307](tel:614-292-3307)
- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: [Baker Hall 098, 113 W. 12th Avenue](#)



Accessibility of Course Technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- [CarmenCanvas accessibility](https://go.osu.edu/canvas-accessibility) (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- [CarmenZoom accessibility](https://go.osu.edu/zoom-accessibility) (go.osu.edu/zoom-accessibility)

Religious Accommodations

It is Ohio State's policy to reasonably accommodate the sincerely held religious beliefs and practices of all students. The policy permits a student to be absent for up to three days each academic semester for reasons of faith or religious or spiritual belief.

Students planning to use religious beliefs or practices accommodations for course requirements must inform the instructor in writing no later than 14 days after the course begins. The instructor is then responsible for scheduling an alternative time and date for the course requirement, which may be before or after the original time and date of the course requirement. These alternative accommodations will remain confidential. It is the student's responsibility to ensure that all course assignments are completed.



ENR 5350.02 Course Schedule AU23

*Note: this schedule is subject to change as the course progresses; refer to the Carmen Canvas for updates

Wk	Dates	Lecture	Lab	Assignments Due
1	08/23	<ul style="list-style-type: none"> Course overview Intro to the origins of fishes 	NO LAB	
	08/25		NO LAB	
2	08/30	<ul style="list-style-type: none"> Morphology, anatomy, use of key Terminology, taxonomy, phylogeny 	Lab 1: Safety and Equipment; Dissections; Key to families	
	09/01			
3	09/06	<ul style="list-style-type: none"> Field collection and preservation methods 	Field trip 1 – Olentangy River (ORWRP)	
	09/08			
4	09/13	<ul style="list-style-type: none"> Jaws, fins, and bones Agnatha vs. Gnathostomata 	Lab 2: Petromyzontiformes, Acipenseriformes, Lepisosteiformes, Amiiformes, Clupeiformes, Cypriniformes, Siluriformes, Esociformes	Lab Quiz #1 (W)
	09/15			Lab Quiz #1 (F)
5	09/20	<ul style="list-style-type: none"> Diversity, form and function 1 Gnathostomata & Teleostei 	Field trip 2 - Scioto River (Ford Mackey Wildlife Area)	
	09/22			
6	09/27	<ul style="list-style-type: none"> Diversity, form and function 2 Teleostei (cont'd) 	Lab 3: Cypriniformes, Salmoniformes, Atheriniformes	Lab Quiz #2 (W)
	09/29			Lab Quiz #2 (F)
7	10/04	<ul style="list-style-type: none"> The weird and the wonderful 	Field trip 3 – Big Walnut Creek (Big Walnut Creek Park)	
	10/06			
8	10/11	Midterm #1 (online)	Open Lab (both sections) - Collection ID	Midterm #1
	10/13		Fall Break: NO LAB	
9	10/18	<ul style="list-style-type: none"> Fish behavior 	Lab 4: Perciformes, Cyprinodontiformes, Scorpaeniformes	Lab Quiz #3 (W)
	10/20			- Lab Quiz #3 (F) - ID Collection Site 1 DUE
10	10/25	<ul style="list-style-type: none"> Reproductive behavior and diversity 	Field trip 4 – Scioto River (Riverside Dr. & Lane Ave)	
	10/27			

11	11/01	• Applied Fish behavior	Lab 5: Video observations, In-lab activity	- Lab Quiz #4 (W)
	11/03		Reading: Example behavior paper	- Lab Quiz #4 (F) - ID Collection Site 2 DUE
12	11/08	• Human impacts on fishes: Part 1 • Reading 1: Fishing impacts	Open Lab (both sections): Behavior project	
	11/10		Veteran's Day - NO LAB	
13	11/15	• Human impacts on fishes: Part 2 • Reading 2: Fishing impacts	Open Lab: Behavior project	
	11/17			- ID Collection Site 3 DUE
14	11/22	Thanksgiving – NO CLASS or LABS		
	11/24			
15	11/29	Midterm #2 (online)	Open Lab: Behavior project analysis	- Midterm #2
	12/01			- ID Collection Site 4 DUE - Field Notes DUE
16	12/06	Last week - NO CLASS or LABS		- Behavior Paper DUE - Last day to submit #scicomm (optional)

