

University of Wisconsin-Madison

Zoology 511: Ecology of Fishes Lab - Spring 2018, 2 credits

521 Noland Hall T,W 1:20-5:00 pm

Supervising Faculty

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Instructors

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Instructor Office Hours: After class Tuesday and Wednesday or by appointment.

Class Introduction

Welcome to the 2018 Ecology of Fishes Laboratory course! In this course, the broad focus will be anatomy and taxonomy of Wisconsin fishes and projects in fish ecology. Zoo 511 will cover multiple aspects of fish biology, with a primary focus on the ecology of the fishes of Wisconsin. Instruction will encourage a thorough understanding of the elements that affect fish and fish populations including physical attributes, interactions among fishes, and interactions between fishes and their environment. We will encourage critical thinking with reading and summarizing primary literature, identifying species, field trips, and scientific writing. Lab activities will include dissections, direct observation, computer simulations and more. If you have any questions about the course, topics we don't cover, or careers in ecology and aquatic sciences please feel free to email us anytime. We're looking forward to a great semester!

Canvas links

Section 1: <https://canvas.wisc.edu/courses/89215>

Section 2: <https://canvas.wisc.edu/courses/89216>

Course designations

Breadth - Biological Sci. Counts toward the Natural Sci requirement

Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Requisites

ZOO 510 or concurrent registration

Instructional mode

All face-to-face. Zoo 511 is a hands-on lab course that will be based primarily on in-person instruction.

Credit Hours

Zoo 511 is a lab course. Students will meet the 2 credits of the course by spending a total of 90 hours (at least 45 hours per credit) on learning activities and working with the instructor. This includes scheduled lab time (T,W 1:20-5:00 pm), and any additional time outside lab.

Class goals and learning outcomes

- Improve your ability to think, observe, and problem solve like a fish ecologist
- Learn how to identify different fishes of Wisconsin based on anatomy
- Gain experience in several fisheries sampling, laboratory, and data analysis techniques
- Gain experience working through research projects from sampling design to scientific writing
- Improve your scientific writing skills

Course Content**Field Trips**

There are four field trips during the semester, each designed to expose you to a variety of fish collection methods and a diversity of fish species. Keep in mind that field trip dates may have to be changed last minute depending on weather conditions, in which case we will update you about schedule changes. You are expected to come to lab on time and dressed appropriately for outdoor conditions on the day of the field trip. If you have a commitment that leads up to or starts immediately after the scheduled class time (1:20-5:00 pm), let us know well in advance of the scheduled field trips. Your preparedness for and participation in the field trips will be a component of your participation grade.

Fish Identification and Sketchbook

You will learn how to identify 45 Wisconsin fish species in this course and you will use a sketchbook (a separate notebook or sketchbook that you can hand in at the end of the semester) to record your observations and help you differentiate between these species. A good sketchbook will include an entry for each one of these fish species. Entries may include common, scientific, and family names, drawings of the preserved fish studied (one of the best ways to learn how to make close observations is through sketching), notes on key characteristics,

notes on identification from field guides, the Becker key, and wiscfish.org, facts shared by the instructors, and anything else to help you to identify each species. We will not be grading you based on your drawing skills, but on your apparent dedication to close observation as evidenced by the sketches. You may also include any other notes from the class in your sketchbook.

Readings, quizzes, assignments

There will be seven quizzes on assigned articles throughout the semester. Readings will be assigned the week before their respective quizzes and posted on Learn@UW. The lowest quiz score will be dropped from your final grade. Major concepts from assigned readings may appear on the final exam so it is in your best interest to keep up with and understand them. Additionally, there will be a “box” assignment, where your main goal will be to write a short description of a scientific paper as if it were to be included in a text book (more description will follow in class, and you will understand why it is called the box assignment!

Badger Mill Creek Paper

This assignment will give you experience with scientific writing, searching through scientific literature, formulating hypotheses, recognizing patterns, and using statistical analyses to make inferences. You will complete an original research project from start to finish. You will collect data on our Badger Mill Creek field trip, analyze your data, and draft a scientific manuscript in three phases. Anticipate spending a significant amount of time on this project.

Individual Paper Presentation

At the end of the semester, you will have a choice between giving a short presentation to the class about your individual paper or writing a 1 page (double spaced text) press release or blog post about your individual paper for a general, non-scientific audience. That means that it must be written in a concise but personable tone without the use of unexplained scientific jargon (words like “biodiversity,” “habitat assessment,” and “niche” will not be acceptable).

Final Exam

There will be one in-class final exam which will be based on material covered in class. Exam questions will span a range of question types including multiple choice, fill in the blank, short answer (1 sentence), and long answer (3-5 sentences). The practical portion of the exam will include identification of a subset of Wisconsin fish species studied, fish internal and external anatomy, and demonstration of field techniques. You may need to report the common name, scientific name (genus, species) and the family name for each species. The written portion of the exam may include questions on key concepts presented in lab, from readings and figures from readings, statistics and scientific writing and other topics.

Attendance

You must not miss class without an excused absence, which will be determined by the instructors. Examples of excused absences may be that you've demonstrated in advance that a significant life-event have prevents you from attending class or if you have a documented medical emergency. Each unexcused absence will result in a 5% reduction to your final course grade, 7% reduction for unexcused absence from field trips. The best way to approach necessary absences is to communicate with the instructors in advance.

Late Work Policy

For every day that an assignment is late, we will deduct 20% off the maximum attainable score from your final grade for the assignment. Assignments will not be accepted more than 4 days after the due date. Legitimate requests for extensions made at least 2 days prior to an assignment's due date will be considered, but instructors have ultimate discretion regarding what is "legitimate." Make up exams will not be given.

Cheating and Plagiarism

Cheating and plagiarism will not be tolerated. If you need clarification on what constitutes plagiarism, see one of several campus resources on plagiarism (<http://journalism.library.wisc.edu/plagiarism-info.html>). Science is a collaborative effort and we encourage students to work together on assignments/projects. However if you do work collaboratively, you need to indicate the names of the people you worked with on that assignment, and your final product must be your own original work. Most in-class work and assignments are collaborative, but examinations are not. Students caught cheating or plagiarizing will be reported to the dean of students and will fail the course.

Grading scales

Quizzes	15% (2.5% each, lowest quiz score will be dropped)
Field Trips	5%
Box Assignment	10%
BMC Paper Methods and Results	5%
BMC Paper Peer-Reviewed Draft	5%
BMC Paper Final Draft	10%
BMC Presentation	5%
Sketchbook	15%
Final Exam	25%
Participation	5% (Classroom Engagement, Attitude)

Final grade ranges

Grade	A	AB	B	BC	C	D	Incomplete
%	100-93	92-88	87-83	82-78	77-70	69-60	<60

ACADEMIC INTEGRITY

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to studentconduct.wiscweb.wisc.edu/academic-integrity/.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

McBurney Disability Resource Center syllabus statement: "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA."

<http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

DIVERSITY & INCLUSION

Institutional statement on diversity: "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals."

2018 Ecology of Fishes Lab Schedule

Dates	Topic/Activity	Assignment	Due
Jan. 23, 24	Introduction, Fish Form and Function	Reading(s) on Learn@UW	
Jan. 30, 31	Anatomy and Physiology		Reading Quiz
Feb. 6, 7	Bioenergetics	Readings on Learn@UW	
Feb. 13, 14	Behavior and Population and Community Interactions	Reading(s) on Learn@UW	Reading quiz
Feb 20, 21	Statistics, Scientific Writing, and Science Communication	Reading(s) on Learn@UW Box Assignment	Reading Quiz
Feb. 27, 28	Diets and Food Webs		Reading Quiz
Mar. 6, 7	Badger Mill Creek (BMC) Field Trip	Begin writing BMC Methods and Results	Box assignment due
Mar. 13, 14	Hatchery Tour		
Mar. 20, 21	Peer Review and Ecological History of Lake Mendota	Reading(s) on learn@UW Begin writing BMC Full Draft	BMC Paper Methods and Results due
Mar. 27, 28	Spring Break!!	Reading(s) on Learn@UW	
Apr. 3, 4	Functional role of fish in ecosystems	BMC full draft due April 14	Reading Quiz
Apr. 10, 11	Willow Creek Field Trip	Reading(s) on Learn@UW Finish BMC Paper BMC Presentation	BMC Paper Full Draft Revised Draft due Apr. 14
Apr. 17, 18	Badger Mill Creek Presentations	Reading(s) on Learn@UW Study for Final Exam	Reading quiz
Apr. 24, 25	Final Exam Review	Study for Final Exam	Reading quiz BMC Paper Final Draft BMC Presentation
May 2, 3	Final Exam		Sketchbook