

EB 702A: Fish Ecology and Lab
Fall 2023
Course Credit Hours: 4.000

- Instructor: Dr. Rachel Bowes
- School of Science and Math
- Day/Time: TR 13:00-15:20; Breukelman Science Hall 050

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- Preferred Method of Contact:
- Office Hours: R 08:00-12:00 or by appointment

How to use this syllabus

This syllabus provides students with information specific to this course, and it also provides information about respective University policies. This document should be viewed as a course overview; it is not a contract and is subject to change as the semester evolves.

Disclaimer

This syllabus is subject to change in part at the discretion of the instructor in accordance with the University policies and guidelines.

Course Description

Fish Ecology will take a comprehensive overview of fish as individuals, populations, and members of the lotic and lentic environment. As such, students will gain a better understanding of life-history strategies, population dynamics, intraspecific interactions, interspecific interactions, and the role of habitat on the ecology of fishes. The class will encompass lecture, laboratory experimentation, and extensive field work. Fish Ecology is designed for upper-level undergraduate and graduate students.

Program Learning Outcomes

This course will give you the opportunity to learn basic methods for studying fish ecology, both in the field and the laboratory. In the process, you will be exposed to basic facts and concepts about numerous ecosystems and their inhabitants, surrounding ESU and beyond. Key objectives of the course are to expand critical thinking skills, learn to analyze multiple data sets quantitatively, apply the scientific method to address important ecological questions, and report results in the appropriate manner. After taking this course, you will be well equipped to think critically about many ecological issues and examine data sets in a statistically rigorous manner.

Student Learning Outcomes

Biology BS Program Learning Outcomes: IH, IIA, IIB, IIC, IID, and IIE.

Required Texts/Readings Textbook

How to Do Ecology: A Concise Handbook - Second Edition. Karban, R., Huntzinger, M., & Pearse, I. (2014). Princeton; Oxford: Princeton University Press.

Additional readings for this course will be available on Canvas and handed out during class this semester as needed.

Class Protocol

Be on time, pay attention, and work hard. All students will be expected to attend class and are responsible for all material presented whether you are present or absent. Students should email the instructor prior to the start of class to inform them of any absences. There tends to be a strong correlation between class attendance and grade earned (Randy Moore, et. al. 2003., American Biology Teacher 65: 325-329.); students who skip classes generally do poorer than students with regular attendance and participation. Examinations will be based primarily on material presented in class.

All exams & quizzes will take place in person on the date and at the time outlined in the class schedule. If you are unable to take an exam for a valid reason, please let me know through an email, I expect that I should know about such a conflict with reasonable prior notice (typically 1-2 weeks prior).

*Ecology is a science, and the language of science is mathematics. Students should have basic mathematical skills; understanding and applying basic statistics depends on this. If you are struggling, seek my help.

*Please come to class having read the required material, which includes lab handouts describing our planned activities, and/or supplemental material. Such material either will be handed out at least one week prior to the relevant lab, or posted on Canvas.

*Be prepared for outdoor labs! We will be in the field from hot August to cold November.

Make sure you know what's on the schedule for the day and dress accordingly, both for the ecosystem and weather: jacket, hat, gloves, sunscreen, insect repellent, appropriate shoes. Always bring water.

Course Changes

The instructor reserves the right to make modifications/changes in the course as necessary for the purposes of instruction.

Grading

Your grade will be based primarily on the results of two examinations given during the semester. Each exam will be worth 100 points and will concentrate on the new material presented. In addition, you will be required to critique one outside readings, complete a series of assignments based on course material, and prepare and participate regularly in class. Grades will be based on the following criteria:

Weekly Assignments (9)	180 pts
Book Review	75 pts
Independent Project Report	100 pts
Independent Project Presentation	25 pts
Final Exam	100 pts
total	480 pts

Instructors have the option to determine the course grading scale. Students should recognize that grading scales may differ depending on the course and instructor. For this class, grades are assigned according to the following chart.

Points/ Percentage	Letter Grade	Grade Points	Interpretation
≥93%	A	4.00	A range denotes excellent performance
90-92.9%	A-	3.70	
87-89.9%	B+	3.30	
83-86.9%	B	3.00	B range denotes good performance
80-82.9%	B-	2.70	
77-79.9%	C+	2.30	
70-76.9%	C	2.00	C range denotes satisfactory performance
60-69.9%	D	1.00	D range denotes unsatisfactory performance
≤59.9%	F	0.00	

Evaluations

•**Weekly Assignments (180 pts. Total):** You are expected to attend and be an active participant in every class. In the absence of legitimate documentation for missing class (illness, family emergency, etc.), your participation grade will be docked accordingly. If you do have a justifiable reason for missing a class period, I will require appropriate documentation prior to the class, save for exceptional circumstances. All assignments are due prior to the start of lecture (no later than 12:59pm) on the due date. I am trying to teach you about ecology, not take points away from your final grade; if you have trouble with the homework, send me an email or come into office hours so I can help! Late homework will incur a 50% penalty each day it is not turned in.

•**Independent Project Report (100 pts.):** There will be one major lab report due. This will require substantial work, including more intensive data collection, some background reading, legitimate data analysis, figure-making, and most importantly practice with formal scientific writing. These will not only require more work from you, but will be graded more rigorously than homework. It is a good idea, then, to contact us with any questions you have as you are writing. You can even send me a rough draft to look over prior to the official deadline (and you should!). Another important note: lab reports are ***due by 11:59pm on the date specified***. One minute later and they will be counted one day late. It is just too difficult for me to deem some papers “reasonably late” and others “unreasonably late” to count as handed-in on-time or not, so I must draw a firm line on this. Lab reports will be docked a letter grade for every day late.

•**Independent Project Presentations (25 pts.):** You will present the findings of your Independent Research Projects. It should consist of a short power point presentation (5-10 slides), that includes each section of the scientific paper (Title, intro, materials and methods, results, discussion). A specific rubric, with exactly what is expected of you, will be handed out later in the course.

•**Book Summary and Review (75 pts.):** You will read a short non-fiction book (How to Do Ecology: A Concise Handbook - Second Edition) and write a complete summary and review of it. Book summary and review is ***due by 11:59pm on the date specified***.

•**Exam (100 pts. each):** One exam will be administered over the course of the semester. The final exam will evaluate student’s knowledge of material covered in class and will consist of multiple choice, true false questions, fill in the blank, and short answer questions. The exam will also cover skills gained throughout the semester, so they can also be in the form of a practical examination with demonstration of competency in a particular skill.

Late Assignments, missed Assignments, Exams, and/or Class Absences

You are expected to attend and be an active participant in every class. In the absence of legitimate documentation for missing class (illness, family emergency, etc.), your participation grade will be docked accordingly. If you do have a justifiable reason for missing a class period, I will require appropriate documentation prior to the class, save for exceptional circumstances. All assignments are due on no later than 11:59pm on the due date. I am trying to teach you about fisheries, not take points away from your final grade; if you have trouble

with the homework, send me an email or come into office hours so I can help! Late homework will incur a 50% penalty each day it is not turned in.

One midterm exam will be administered over the course of the semester. The exam will evaluate student's knowledge of material covered in class and will consist of multiple choice, true false questions, fill in the blank, and short answer questions. All exams will take place in person on the date and at the time outlined in the class schedule. If you are unable to take an exam for a valid reason, please let me know through an email, I expect that I should know about such a conflict with reasonable prior notice (typically 1-2 weeks prior).

My guiding principle for illness is this: If you are sick or feel sick, you should not go to class or come to work. Stay home and take care of yourself. This applies to all illnesses including COVID. Students who are sick (with anything, not just COVID) and need to miss class should contact both the instructor before class (rbowes@emporia.edu) as well as the Office of Student Affairs, (VPSA@emporia.edu). This needs to occur every time a class must be missed due to illness. Communication is vitally important in these new circumstances, and it is my expectation that you will keep me informed of pertinent developments or changes in your circumstances.

Syllabus Policies and Student Resources

Academic Dishonesty Policy

Academic Dishonesty, a basis for disciplinary action, includes but is not limited to activities such as cheating and plagiarism (presenting as one's own the intellectual or creative accomplishments of another without giving credit to the source or sources). *In this course any acts of academic dishonesty will result in a failing grade for the assignment. Multiple infractions, or more egregious types of academic dishonesty may result in failure of the course and the assignment of an "XF" grade. Furthermore, any infraction will be reported to the Office of the Provost who may impose additional penalties.* The University policy is presented on the Academic Affairs website as the [Academic Affairs Academic Dishonesty Policy](#)

Student Accommodations

Student Accessibility and Support Services (SASS) at Emporia State University (ESU) ensures that students with disabilities have full and equal access to the programs and services of ESU without discrimination. Any student who feels they may need academic accommodations or access to accommodations based on the impact of a documented disability should contact and register with SASS during the first week of class or as soon as possible after the diagnosis of a disability. SASS is the official office to assist students through the process of disability verification and coordination of appropriate and reasonable accommodations. Students currently registered with SASS must obtain a new accommodation memo each semester. The SASS office is located in William Allen White Library, 2nd Floor (Office 209K) or phone 620-341-6637/Email SASS@emporia.edu. The SASS office website URL is <http://www.emporia.edu/sass>.

Diversity, Equity, and Inclusion

Emporia State University supports an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. We expect that students and faculty at Emporia State will respect differences and demonstrate diligence in understanding how identities, perspectives, behaviors, and worldviews may be different from their own.

If there are aspects of this course that result in barriers to your inclusion or the inclusion of those around you, contact the individual with whom you are most comfortable: your academic advisor, the Department Chair, your School or College Dean, the Dean of Students, the Senior Director of Diversity, or your course instructor.

Acceptable Use Policy

It is University policy to provide computing and information technology resources to faculty, staff, students, official university affiliates, and others in support of the education, research, and public service missions of the university. Users of university information technology resources are responsible for using these resources only as allowed by law and in connection with the university's core teaching, research, service, and other identified missions.

(resources:	Usage	Policy	URL
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Confidentiality of Student Information (FERPA)

ESU affords students their full rights in conformity with the Family Educational Rights and Privacy Act of 1974, its amendments and implementing regulations. Eligible students have the right to inspect their educational records request amendment of their records they believe to be incorrect or misleading and restrict disclosure of their information in specific situations. Students may waive their rights to inspect and review confidential statements and confidential letters of recommendation by providing a signed voluntary statement if, in conformity with applicable law; 1) the student is notified, upon request, of the names of those providing statements and letters, 2) the letters and statements are only released for the original purposes stated, and 3) the waiver is not a condition of admission or other benefit. (resources: Information on FERPA URL <https://www.emporia.edu/academics-majors/academic-affairs/office-registrar/enrollment-registration/student-and-family-educational-rights-and-privacy-act-1974-ferpa/>)

Withdrawal

If a student elects to withdraw from one or more classes after the official drop period and through the tenth week of a regular semester, the grade of "W" will be recorded on the transcript regardless of the student's academic standing in that class. Students must have their advisor sign the withdrawal form.

After the tenth week of the regular semester the student may not withdraw from class nor may the instructor assign the grade of "W". In extreme cases, the student may appeal to the Office of the Associate Vice President for Academic Affairs to receive a grade of "W" after the tenth week.

Classes taught in less than the regular semester will follow a similar pattern. If a student elects to withdraw from one of these shorter classes after the official drop period and before 5/8 of the class periods have been completed, the grade of "W" will be recorded on the transcript. After 5/8 of the class periods have been completed, the student may not withdraw, nor may the instructor assign the grade of "W." In extreme cases, the student may appeal to the Office of the Associate Vice President of Academic Affairs to withdraw with the grade of "W" after 5/8 of the class periods have been completed.

Course Incompletes

If a student takes an Incomplete in the course, for a grade of I, the student's grade will be reduced by a grade level when the work is completed during the next semester. For example, an A grade will be reduced to a B grade. Incomplete work that is not finished by the end of the next semester automatically turns to an F (by the Registrar's Office). According to ESU policy, Incompletes can be assigned only in the direst of circumstances. The Teachers College may require a signed contract between the student and the professor to obtain an Incomplete grade.

Basic Needs

Basic needs insecurities can be barriers to students' success, which is why we need your help. As you complete your syllabi for the fall semester and prepare for the first day of class, we encourage you to share information about available campus and community resources with your students. Encourage students to visit emporia.edu/basicneeds to find resources for affordable housing, financial support, and food assistance.

We have identified strategies and resources instructors might find helpful in supporting students' basic needs and put together a faculty toolkit. Example strategies include posting about resources on Canvas, talking about them with students at various turning points throughout the semester, and adding a basic needs statement to syllabi, among many others. For a sample syllabus statement, see <https://bit.ly/ESUbasicneedssyllabus>. The *Basic Needs Coalition* is a group of students, faculty, staff, and community members who work together to ensure all Hornets have access to the resources they need to succeed inside and outside the classroom. If you have questions or concerns for the coalition, please email basicneeds@emporia.edu.

Campus Emergencies

In the event of a major course or campus emergency (such as a significant COVID-19 outbreak), the mode of instruction, course requirements, deadlines, and/or grading procedures are subject to changes that may be necessitated by a revised academic calendar or other circumstances beyond my control. In the event of such a circumstance, communication will occur through Canvas and by email from your instructor. You may also request information about changes in this course by emailing the instructor.

Hardships

If something happens during this course that makes it difficult or impossible for you to complete course work or attend class for an extended period of time, please inform the instructor immediately. Consideration for extenuating circumstances, may be granted by the instructor. There are campus resources dedicated to addressing student hardships and referrals to these resources may be obtained by contacting the Office of Student Affairs.

Student Health and Safety

To keep yourself and fellow members of the campus community safe, please screen yourself for symptoms of COVID-19 before attending class. Symptoms include headache, cough, shortness of breath or difficulty breathing, sore throat, new loss of smell or taste, chills, repeated shaking with chills, muscle aches and pains, among others. Please review posted signage for further instructions on how to self-screen. If you are experiencing any of these symptoms, please do not attend class. If you begin experiencing these symptoms during class, please exit the classroom. You should then return to your residence and notify the instructor of your absence. Contact the Student Wellness Center by calling 620-341-5222, if you believe you need testing or medical consultation.

Undergraduate vs. Graduate Credit

Undergraduate students enrolled in 700 level courses will receive undergraduate credit (not graduate credit) unless they have a previously approved senior rule application or dual/accelerated enrollment form on file in the Graduate School. Undergraduate credit earned in 700 level courses cannot later be counted toward a graduate degree.

Fall 2023 Class Schedule

Date	Day	Activity*	Assignment Due	Meeting place*
August 22	Tuesday	Course Introduction, Fish Morphology and Adaptations		BSH 050
August 24	Thursday	KS Fish ID: Methods		PAROC
August 29	Tuesday	Behavior		BSH 050
August 31	Thursday	Behavior: Methods		BSH 050
September 5	Tuesday	Reproduction in Fish	Behavior	BSH 050
September 7	Thursday	Reproduction: Methods		BSH 050
September 12	Tuesday	Populations	Reproduction	BSH 050
September 14	Thursday	Population: Methods		PAROC
September 19	Tuesday	Life History and Migrations	Population	BSH 050
September 21	Thursday	Migration: Methods		BSH 050
September 26	Tuesday	Competition/Predation	Migration	BSH 050
September 28	Thursday	Species Interactions: Methods		PAROC
October 3	Tuesday	Fish-Habitat Relationships	Species Interactions	BSH 050
October 5	Thursday	Habitat: Methods		PAROC
October 10	Tuesday	Independent Projects: Intro	Habitat	BSH 050
October 12	Thursday	Fall Break – No Class		
October 17	Tuesday	Communities	Book Summary and Review	BSH 050
October 19	Thursday	Community: Methods		PAROC
October 24	Tuesday	Threats and Conservation	Community	BSH 050
October 26	Thursday	Conservation: Methods		PAROC
October 31	Tuesday	Zoogeography of Fish	Conservation	BSH 050
November 2	Thursday	Independent Projects	Independent Project Proposal	BSH 050

November 7	Tuesday	Independent Projects		
November 9	Thursday	Independent Projects		
November 14	Tuesday	Independent Projects		
November 16	Thursday	Independent Projects		
November 21	Tuesday	Independent Projects		
November 23	Thursday	Thanksgiving - No Class		
November 28	Tuesday	Independent Projects	Independent Project Rough Draft	
November 30	Thursday	Independent Projects: Presentations		PAROC
December 5	Tuesday	Independent Projects		
December 7	Thursday	Independent Projects		
December 13	Wednesday	Final Exam (Canvas)	Independent Project Report Due	