

# **EB 701A: Fisheries Management and Lab**

## **Fall 2022**

**Course Credit Hours: 4.000**

- Instructor: Dr. Rachel Bowes
- Department: Biological Sciences
- Day/Time: TR 13:00-15:30; Breukelman Science Hall 050
  
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- Office Hours: 11:00-11:50 MWF 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**

Fisheries management is the practice of managing people, fishes, and habitat to conserve aquatic resources into perpetuity. As such, we will take a holistic view of the principles and practices associated with managing humans and aquatic resources.

## **Program Learning Outcomes**

Fisheries Management is a quantitative, ecological discipline that interfaces with human dimensions. The course requires students to draw on knowledge gained throughout the Biology curriculum (math, statistics, and fishery and wildlife biology, ecology, conservation biology, economics and human dimensions) to tackle complex concepts and apply that understanding to real world datasets and contemporary fisheries management issues.

## **Student Learning Outcomes**

This course is an introduction to the principles of fisheries science and management, focusing on the process and tools for managing fish populations and their habitat as well as emphasizing quantitative methods for fisheries assessment. The course objectives are that students will be able to following at the end of this course:

- Identify and conduct quantitative analyses associated with fisheries assessments (Biology BS Program Learning Outcomes IIB & IIC);
- Have a firm grasp on the fundamentals of fish population dynamics, including basic concepts and stock assessment methods (Biology BS Program Learning Outcome IH);
- Know how to apply demographic and ecological concepts to the management of sport and non-game fish populations and communities (Biology BS Program Learning Outcome IH);
- Identify challenges to and recommend actions for the sustainable management of fish populations;
- Summarize and critically evaluate published scientific papers related to fisheries management;
- Identify the literature required to stay current in the field of fisheries science at any time in the future.

## **Required Texts/Readings Textbook**

The 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

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

•**Attendance and Assignments (200 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.

•**King Lake Management Plan and Report (75 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 me 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.

•**King Lake Management Plan and Report Presentations (25 pts.):** You will present the findings of your King Lake Management Plan. It should consist of a short power point presentation (5-10 slides). A specific rubric, with exactly what is expected of you, will be handed out later in the course.

•**Exams (100 pts. each):** Two exams will be administered over the course of the semester. Exams 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. Exams 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.

Two exams will be administered over the course of the semester. Exams 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](mailto:rbowes@emporia.edu)) as well as the Office of Student Affairs, ([VPSA@emporia.edu](mailto: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, plagiarism, or any other academically unethical activity as defined in the course syllabus by the faculty member and based on standards of the academic discipline.

The faculty member in whose course or under whose tutelage an act of academic dishonesty occurs has the option of failing the student for the academic hours in question, or for any components or requirements for that course. If the student fails the course as a result of academic dishonesty, a course grade of XF may be assigned by the instructor of record to the student's transcript to indicate the failure in the course was due to academic dishonesty, provided the Academic Dishonesty Committee authorized the "X" part of the grade as outlined below.

Departments, schools, and colleges, or the university may have provisions for more severe penalties. Emporia State University may impose penalties for academic dishonesty up to and including expulsion from the student's major or from the University. In addition, acts of academic dishonesty shall be grounds to deny admission to a department or program. In addition to the penalties above, the faculty member shall notify in writing the department chair and the registrar of the infraction. The notification to the department chair should include documentation of the academic dishonesty infraction and the course of action the faculty member takes. All documentation must be provided within 10 business days after the discovery of academic dishonesty. The department chair shall forward the report of the infraction to the Provost and Vice President for Academic Affairs. The registrar shall block the student from withdrawing from the course to avoid the penalties that result from the infraction. The Provost and Vice President for Academic Affairs shall act as the record keeper for student academic infractions. The Provost and Vice President for Academic Affairs will notify the student in writing that an infraction has been reported and inform the student and the faculty member of their rights to be heard by the Academic Dishonesty Committee; furthermore, such communication will indicate the right to appeal and of the appropriate appeal procedures.

To access the policy in its entirety, refer to Section 3D.0801 Academic Dishonesty Policy in the Emporia State University Policy Manual. The 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 <https://sites.google.com/g.emporia.edu/emporiastateuniversity/usage-policy>)

## **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](https://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](mailto: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 2022 Class Schedule

Date	Topic	Location	Activity
August 23	Introduction	BSH 050	Lecture
August 25	Sampling Strategies	BSH 050	Lecture
August 30	Introduction to Equipment	PAROC	Lecture & Gear Test
September 1	Safety in Fisheries	BSH 050	Lecture
September 6	Fish ID and Measurement	PAROC	ID Practice
September 8	Fish Age, Growth, Physiology	BSH 050	Lecture, Fish aging
September 13	Lakes & Reservoirs	BSH 050	Lecture
September 15	Lakes & Reservoirs	BSH 050	Lecture
September 20	King Lake: Sampling Gear	PAROC	Lecture & Gear Prep
September 21	King Lake: Sampling	PAROC	Meet at 5pm
September 22	King Lake: Sampling	PAROC	CLASS WILL END AT 5PM THIS DAY
September 27	Introduction to Management Plans	BSH 050	Lecture
September 29	Data Entry and Discussion	BSH 050	Data entry, discussion
October 4	King Lake Management Plan	BSH 050	Discussion
October 6	King Lake Management Plan	BSH 050	Create King Lake management plans
October 11	Midterm Exam	BSH 050	
October 13	Fall Break: No Class		
October 18	Tools of the Trade: Tags/Marking, Population Estimation	PAROC	Lecture, tagging, mark-recapture activity
October 20	Tools of the Trade: Environmental Data	PAROC	Lecture, Lake bathymetry of King Lake
October 25	Tools of the Trade: Statistics	BSH 050	Lecture, data activity
October 27	Tools of the Trade: Statistics	BSH 050	Lecture, data activity
November 1	Tools of the Trade: Fish Culture, Stocking, & Hatcheries	BSH 050	Milford Hatchery Visit – WE WILL NOT RETURN TO ESU UNTIL 6PM

November 3	Tools of the Trade: Fish Handling & Transport	PAROC	Possibly stocking King Lake
November 8	Tools of the Trade: Creel Census & Talking to the Public	BSH 050	Susan Steffen KDWP
November 10	Tools of the Trade: Regulations & Legislation	BSH 050	Lecture
November 15	Rivers & Stream Fisheries	BSH 050	Lecture
November 17	Marine Fisheries	BSH 050	Lecture
November 22	King Lake Management Plans: Report	PAROC	King Lake Management Plan Report
<b>November 24</b>	<b>Thanksgiving Break: No Class</b>		
November 29	Invasive Species: Growing Threat to Fisheries	BSH 050	Chris Steffen KDWP
December 1	Restoration & Climate Change	BSH 050	Lecture, model activity
December 6	Job Opportunities	BSH 050	Fisheries career panel – this will likely meet in the evening instead of normal class time
December 8	Wrap Up and Review	BSH 050	
<b>December 12</b>	<b>Final Exam: 1:00-2:50 pm</b>	BSH 050	