



NRES 409 – Fisheries Ecology and Conservation

- August 2021
- Hours: 4 ug/g
- Lecture: Monday, Wednesday & Friday from 11:00 am to 11:50 am W109 Turner Hall (in person)
- Discussion period: Wednesday from 12:00 pm (noon) to 12:50 pm W109 Turner Hall (in person)

Instructor Information

- Instructor: Dr. Cory Suski, Professor, NRES
- Office: W401C Turner Hall
- Phone: 217-244-2237
- Email: suski@illinois.edu
- *Questions about course content:* If you have a question about course content, lectures or discussions, I would ask that you post it to the class discussion board on the Canvas site. Posting the question to the discussion board will allow other students in the class to answer, and will also let everyone share each question and the response. This board will be monitored by both the instructor and the TA. If your question cannot be answered via the discussion board, please email the instructor or the TA.
- *Student hours:* At the moment, I am not planning on holding formal, regular student hours. However, I am happy to set up a time to meet and discuss course content, although I would ask that you post your question to the discussion board to see if that help provide an answer. If you would like to meet, please email me to set a time.
- *Response time:* I should respond to your email in less than 24 hours – often sooner. Please note that (a) my schedule sometimes can get busy and I may bump up against the 24 hour mark, and (b) emails sent to me in the evenings or on weekends might not be returned until the following working day.

Teaching Assistant

- John Bieber
- johnfb2@illinois.edu

Textbooks

Required Textbook

- [*Ecology and Conservation of Fishes*](#) (Tyus)
 - Call Number: 597 T994e
 - On [2 hour reserve in the ACES Library](#)

Additional, suggested textbooks on [2 hour reserve in the ACES library](#):

- [*Fish conservation: a guide to understanding and restoring global aquatic biodiversity and fishery resources*](#) (Helfman)
 - Call number 333.95611 H367f
- [*Inland Fisheries Management in North America, 2nd Edition*](#) (Kohler & Hubert)
 - Call number 639.21097 In5 1999
 - Also available electronically through [Hathi Trust](#)
- [*Inland Fisheries Management in North America, 3rd Edition*](#) (Hubert & Quist)
 - Call number 639.21097 In5 2010



- [*Methods for Fish Biology*](#) (Schreck and Moyle)
 - Call number 597.0072 M566
 - Also available electronically through [Hathi Trust](#)
- [*Fisheries Techniques, 2nd Edition \(1996\)*](#) (Murphy and Willis)
 - Call Number 639.2028F5391996
 - Available electronically through [Hathi Trust](#)
- [*Fisheries Techniques, 3rd Edition \(2012\)*](#) (Zale, Parrish and Sutton)
 - Call Number 639.20202 F5392012
 - Available Electronically through [Hathi Trust](#)

Learning Management System

The online learning management system for this course will be [Canvas](#). Login information can be found [here](#).

Course Description & Overview

Fish are the most diverse group of vertebrates on the planet, provide countless ecosystem services, but are also among the most threatened and imperiled. Fortunately, a number of tools and strategies exist to help global fisheries and reverse their decline. This course will required to successfully manage fish populations. In addition, this course will expose students to a number of challenges facing aquatic ecosystems, and will provide an opportunity to discuss activities, approaches and strategies that can be used to solve these challenges. While many examples and scenarios discussed will be based on local/regional issues, the course will emphasize a global perspective to aquatic conservation issues and how regional differences in problems and solutions exist. Emphasis will be placed on the importance of using sound science to generate successful management strategies.



Learning Objectives

At the conclusion of the course, students will be able to describe the primary biological and environmental forces responsible for the health and functioning of fisheries populations, and be able to outline the ways in which human activities can both help and harm fish. Students will also be able to apply common tools and techniques used to manage fish populations. When combined, this will allow students to create management plans capable of solving fisheries problems.

Evaluation Methods & Weighting

Component	Points
iClicker Questions in Discussions (9 Discussions × 3 points)	Max of 24
Knowledge checks for discussion readings (8 quizzes × 3 points, drop lowest)	21
Knowledge checks for lectures (5 online quizzes × 4 points each)	20
All about Me assignment	10
Letter for funding	10
Team Exercise	20
Exam # 1	50
Exam # 2	50



Comprehensive Final Exam (during exam period)	60
Total points	265

We will be using a plus/minus grading scale, and grades will be based generally on the following number of points:

Grade	Points
A ⁺	≥ 260
A	249-259
A ⁻	239-248
B ⁺	228-238
B	217-227
B ⁻	207-216
C ⁺	196-206
And so on	

Teaching and Learning Strategies

- Accomplishing the learning objectives for this course will occur through the following means:
 - *Lectures*: the primary way that students will be exposed to new concepts and ideas is through lectures by the instructor. Lectures will be based on the required course text book, as well as additional supplementary literature. Where possible, effort will be made to share the source of any primary literature incorporated into lectures.
 - *Case studies*: During the semester, there will be a total of 4 classes dedicated to an in-depth examination of data and problem solving using specific case studies. These classes are not graded, and will involve group discussions, peer learning, knowledge sharing and application of lecture content to solve fisheries problems. Case studies do not involve any preparations prior to class. All case study materials are available under the Case Study module in Canvas.
 - *Discussions*: This class has a 1 hour discussion period each week. These discussion periods will be dedicated to learning various fisheries techniques, and applying these techniques in conservation scenarios. These Discussions will involve completing readings prior to class, answering graded online knowledge check questions related to the readings, as well as graded iClicker questions in class. There will be 3 iClicker questions every discussion period, and students will be able to gain a total of 3 clicker points per discussion period. You will receive 0.5 for participation and an additional 0.5 points for correct responses (performance). The lowest iClicker score for a discussion session will be dropped. All Discussion readings and quizzes are available in Canvas. Note that it is a violation of academic integrity to use a clicker that is not your own.
 - *Knowledge checks for lectures*: During the semester there will be 5 checks of your lecture and reading knowledge using online quizzes. The first 4 of these 5 quizzes will consist of 5 multiple choice/matching questions; these first 4 quizzes are NOT cumulative, and will be based on the assigned readings and lecture content that was covered since the preceding quiz. The final quiz will require answers that are a few sentences, and is based on a management scenario. These quizzes are intended to ensure that students are engaged with material, and will provide feedback



to the instructor on learning. Quizzes are due at 10:59 am – immediately prior to the start of class.

- *All about Me Assignment*: In an effort to create community within the class, there will be one video assignment asking you to share a bit of information about your self. This video will be uploaded to Canvas, and then shared with other students in an attempt to help you feel more connected to your classmates. Due September 1st.
- *Letter for funding*: Students will be required to complete 1 essay assignment that involves submitting a request for funding to a (fictitious) funding agency to solve a fisheries problem of their choice. The purpose of this writing assignment is to synthesize a broad range of concepts and ideas (fish biology, environmental constraints, activities of humans etc.), and improve written communications skills in working to address a current topic in fisheries science. The rubric for this essay is available on the class Canvas site.
- *Team exercise*: Towards the end of the semester there will be 2 separate, 1.5-hour role-playing exercises on a current topic or case study in fisheries science, with **students participating in one of these exercises**. Students will be divided into different stakeholder Teams, and the different Teams will discuss the topic at hand from different perspectives. This activity will allow students to both apply course content, and experience a ‘real world’ problem from a stakeholder point of view. Additional details will be provided in class, and the rubric for this exercise is available on the class Canvas site in the Team Exercise module.
- *Exams*: There will be three exams for this course – two mid-semester exams and a final exam. All exams will be cumulative, so students will be required to know all earlier material for each exam. Exams will serve to provide students with a means to identify topics and skills they have not yet mastered, and to motivate students to engage course material. Exams will be designed in a way to be approximately 75 % objective questions (multiple choice, matching, select correct response, or similar) 25 % subjective questions (e.g., short answer). The final exam will occur during finals week.

How to be successful in this class

- *Attend class regularly*. Attending class is expected, and at many points in the class there will be informal discussions of material, and opportunities to engage in class material with your classmates. Classes are also opportunities to add to your grade by completing iClicker questions.
- *Take advantage of the lecture notes provided in Canvas*. Bring electronic or paper copies of lecture handouts to class, and take notes directly on these handouts. Lectures are the primary way that material is presented to you, and copies of the lectures will be available in Canvas as PDFs. Bringing these handouts to class and adding your own notes directly to them will be helpful in studying and comprehending materials. Note that copies of individual PowerPoint slides, or handouts consisting of individual PowerPoint slides of lecture material, will not be made available.
- *Invest in discussion readings*. Discussion periods serve to integrate a number of concepts and provide exposure to management activities. Take advantage of discussion classes to apply your knowledge and skills
- *Complete readings prior to lectures*. The pre-class readings listed in the table at the end of this syllabus were often used in developing lecture materials. Reading through these chapters prior to class will help familiarize you with the content, aiding in retention and comprehension.
- *Prepare for case studies*. Case studies integrate concepts from a number of different classes, serving as an outstanding knowledge check. Come to each of the case study classes with all of your class notes, and be prepared to engage in material from the previous series of lectures.



- *Take advantage of iClicker points.* Please either acquire an iClicker, or download the app, prior to the first discussion session. Please make sure that your clicker is registered prior to the first discussion so that you can obtain iClicker points for your grade.
- *Ask questions.* If there are concepts that you do not understand, post your question to the discussion board in Canvas, or else reach out to the instructor for help.

Course Policies

- *Absences* – Should students need to miss a class, they are encouraged to (1) complete readings of supplementary materials provided in the syllabus or within the lecture notes, and/or (2) borrow class notes from a classmate to become familiar with material discussed in class. Following the completion of these two steps, students are encouraged to discuss materials with the instructor (particularly during office hours) if uncertainty exists regarding content. Notes provided by the instructor on Canvas are meant to *supplement* classroom activities, and not replace learning and discussion during lectures.
- *Late assignments and extensions* – It is the responsibility of the student to ensure that assignments are handed in at or before the due dates listed above. Assignments received after the due date will be considered late unless they are accompanied by a letter from the [Office of the Dean of Students \(Student Assistance Center\)](#), generated no later than 10 days after due date of assignment and are in agreement with conditions listed in the [Student Code](#) (e.g., illness of 3 days or longer, illness of family member etc.). Following the timely receipt of an absence letter from the Office of the Dean of Students in support of the missed deadline (within 10 days of the student's return to class), discussions can begin related to grades and grading for the late assignment. Decisions on how to accommodate the late assignment will be handled on a case-by-case basis, and may include an extension of the due date, providing an alternate assignment, adjusting the weighting of other components of the class or a grade penalty. Excuses for a late assignment that are within the student's control (ran out of toner in printer, hard drive crashed and lost file(s), computer was stolen, couldn't find parking, semester has been busy, several other things due at the same time, memory stick/thumb drive/flash drive broke, need a bit more time, bus was late, not feeling well, it was windy outside) will not be accepted and it is the student's responsibility to avoid these potential issues. **Late assignments will be charged a penalty of 5 % per day.**
- *Computer failures* – Please take advantage of online (cloud) storage space to prevent loss of files due to human or technical errors. The University provides online (cloud) storage through Box (<https://uofi.account.box.com/login>), but other options such as Google Drive, iCloud, Drop Box exist and should be explored.
- *File uploads* – Please confirm that any assignments uploaded to Canvas are complete, and that the intended version/file has been uploaded. Grades will be provided based exclusively on the file(s) that are uploaded, and it is the student's responsibility to make sure that the proper file is uploaded and that the file contains the proper information. If there is an error made with uploading (i.e., incorrect file has been uploaded by mistake), changes can only be made prior to the deadline for the assignment, ideally by email with the instructor.

Exams

- *Missed exams* – The policy for missed exams will follow guidelines provided by the [Student Code](#) and the [Office of the Dean of Students \(Student Assistance Center\)](#). Briefly, excused absences from exams will be granted **only** for reasons outlined in the [Student Code](#) (e.g., illness of 3 days or longer, illness of family member etc.), **and** only upon timely receipt of an absence letter from the [Office of the Dean of Students \(Student Assistance Center\)](#) (received less than 10 days following



the student's return to class). Following receipt of a letter from the Office of the Dean of Students in support of the absence, discussions can begin related to grades and grading for the excused exam. Decisions on how to accommodate excused exams will vary on a case-by-case basis and may include writing the exam at a different time, providing an alternate assignment, or adjusting the weighting of other components of the class.

- Exams that are missed for reasons other than those listed in the [Student Code](#) (i.e., personal business, travel, employment, weddings, sporting event, forgot about exam, car wouldn't start, bus was late, semester has been busy, lack of preparation, not feeling well, concert, hoping for extra time to study, etc.) will be handled on a case-by-case basis with the instructor. Missing an exam without an absence letter from the Office of the Dean of Students will most likely result in a grade of zero (0) for that exam.
- *Anticipated exam absence* – Should you notice early in the semester that you have a conflict with an exam (i.e., field trip, other), please inform the instructor as early as possible. In situations of known (anticipated) exam conflicts, options related to grades will be handled on a case-by-case basis. Options may include changing the timing of the exam (i.e., write the exam early), or altering the weighting of other assignments in the class. It is expected that known conflicts be supported with a note from another professor (or similar) to verify the conflict.
- Plan to arrive early for all exams in this course. It is the student's responsibility to be sure that the day of the exam will not conflict with other activities. If you arrive to an exam more than 30 minutes late, or after the first person completes the exam (whichever comes first), you will not be allowed to take the exam and will receive a score of 0 (zero). Excuses that are within a student's control (e.g., not enough time to study, semester has been busy, car wouldn't start, job interview, alarm clock did not work, did not wake up early, traffic was terrible, bus was late, etc.) will not be accepted. It is the student's responsibility to anticipate and avoid these potential issues.
- If you have question about an exam grade, you can submit a request for a re-grade by email to the instructor, accompanied by a rationale. The rationale should explain why you feel that the grade you received should be re-examined, and why you feel that the answer(s) you gave was/were improperly graded. After receiving this request for re-grading, your entire exam will be re-graded, not just the area of dispute, and the results of this re-grade will be final (no additional re-grading will be allowed). Class time will be devoted to discussing and reviewing assignments/exams, and so students are asked to refrain from disputing grades until after the exam/assignment has been reviewed in class. A request to re-grade must be submitted within 1 week of having the exam discussed in class.
- As of July 27, 2020, the final exam is [scheduled](#) to be held on **Friday December 10th from 1:30-4:30 pm**. The course-specific exam schedule will be posted in early-October and will include the exam location. Students are asked to regularly check the [scheduling guidelines](#) to ensure this exam date has not been changed by the University.

Expectations of Students

During this course, it is expected that students will come to class on time, having completed assigned readings and relevant quizzes in advance, and be prepared to engage in course content for the full class time. Students are expected to participate in class activities in ways that support course learning objectives, demonstrate respect and civility toward all other students and instructors, and take an active role in obtaining information and resources for completion of tasks and assignments in the course, ultimately promoting their own learning. Wherever possible, students should contribute feedback to support the instructor in achieving course goals and inform the instructor if they are having a problem understanding presented material. Students are also expected to complete assigned tasks by



the announced deadlines and adhere to the content of this syllabus. Finally, students should refrain from using cell phones in class.

Students' Expectations of Instructor

During this course, the instructor is expected to begin and end class on time, make the best possible use of class time to support student learning, answer questions promptly and sufficiently, and be available to provide additional assistance when needed. The instructor will always provide clear and consistent criteria that can be used fairly in evaluating student learning, will welcome input on ways to improve the course and will support the achievement of course learning objectives. Feedback (in the form of grading of papers and exams) should be provided to students in a prompt, timely fashion and lecture notes will be made available on the class website prior to class.

Campus Policies

COVID19

Please be aware of and follow all campus guidelines related to COVID, outlined at <https://covid19.illinois.edu/>. Please check this site regularly as this site may be updated during the semester.

Academic Integrity

The University of Illinois at Urbana-Champaign Student Code should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: <http://studentcode.illinois.edu/>.

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: <http://studentcode.illinois.edu/>. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Request for accommodations

To obtain academic accommodations and/or auxiliary aids, students must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES, you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TDD), or e-mail a message to <mailto:disability@uiuc.edu>. <http://www.disability.illinois.edu/>. Note that accommodations will not be retroactive, and will only apply starting on the date that correspondence from DRES is received.

Emergency Response Recommendations

Emergency response recommendations can be found at the following website: <http://police.illinois.edu/emergency-preparedness/>. I encourage you to review this website and the campus building floor plans website within the first 10 days of class. <http://police.illinois.edu/emergency-preparedness/building-emergency-action-plans/>.

Family Educational Rights and Privacy Act (FERPA)

Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See <https://registrar.illinois.edu/academic-records/ferpa/> for more information on FERPA.



Sexual Misconduct Policy and Reporting

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX and Disability Office. In turn, an individual with the Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: <https://wecare.illinois.edu/resources/students/#confidential>.

Other information about resources and reporting is available here: <https://wecare.illinois.edu/>.



Run > Hide > Fight

Emergencies can happen anywhere and at any time. It is important that we take a minute to prepare for a situation in which our safety or even our lives could depend on our ability to react quickly. When we're faced with almost any kind of emergency – like severe weather or if someone is trying to hurt you – we have three options: Run, hide or fight.



Run

Leaving the area quickly is the best option if it is safe to do so.

- ▶ Take time now to learn the different ways to leave your building.
- ▶ Leave personal items behind.
- ▶ Assist those who need help, but consider whether doing so puts yourself at risk.
- ▶ Alert authorities of the emergency when it is safe to do so.



Hide

When you can't or don't want to run, take shelter indoors.

- ▶ Take time now to learn different ways to seek shelter in your building.
- ▶ If severe weather is imminent, go to the nearest indoor storm refuge area.
- ▶ If someone is trying to hurt you and you can't evacuate, get to a place where you can't be seen, lock or barricade your area if possible, silence your phone, don't make any noise and don't come out until you receive an Illini-Alert indicating it is safe to do so.



Fight

As a last resort, you may need to fight to increase your chances of survival.

- ▶ Think about what kind of common items are in your area which you can use to defend yourself.
- ▶ Team up with others to fight if the situation allows.
- ▶ Mentally prepare yourself – you may be in a fight for your life.

Please be aware of people with disabilities who may need additional assistance in emergency situations.

Other resources

- ▶ police.illinois.edu/safe for more information on how to prepare for emergencies, including how to run, hide or fight and building floor plans that can show you safe areas.
- ▶ emergency.illinois.edu to sign up for Illini-Alert text messages.
- ▶ Follow the University of Illinois Police Department on Twitter and Facebook to get regular updates about campus safety.



Tentative Lecture Topics and Schedule

Note that the dates for lecture topics are subject to change, but the dates of exams, due dates for papers and other 'important dates' will not vary.

Date	Day	Lecture or Discussion	Title	Pre-class Readings	Due dates
Aug 23	M	Lecture	Introduction		
Aug 25	W	Lecture	Fisheries & management	Tyus, Ch. 1	
Aug 25	W	Discussion	Discuss assignments & other aspects of class		
Aug 27	F	Lecture	Fish	Tyus, Ch. 2,20	
Aug 30	M	Lecture	Water & living in water	Tyus, Ch. 3	
Sept 1	W	Lecture	Prepare for Team Exercise		All About Me Assignment Due
Sept 1	W	Discussion	Discussion #1 – Planning for sampling		
Sept 3	F	Lecture	Aquatic ecosystem components	Tyus, Ch. 9	Lecture Knowledge Check 1
Sept 6	M	Labor Day – No Class			
Sept 8	W	Lecture	Aquatic ecosystem structure	Tyus, Ch. 22	
Sept 8	W	Discussion	Discussion #2 – Netting & passive capture		
Sept 10	F	Lecture	Bioenergetics	Tyus, Ch. 21	
Sept 13	M	Lecture	Foraging and Feeding	Tyus, Ch. 25	
Sept 15	W	Lecture	Growth & ageing 1 of 2	Tyus, Ch. 23	
Sept 15	W	Discussion	Discussion #3a – Electrofishing 1 of 2 - Theory		
Sept 17	F	Lecture	Growth & ageing 2 of 2	Tyus, Ch. 23	
Sept 20	M	Lecture	Competition and Patch Use	Tyus, Ch. 25	Lecture Knowledge Check 2
Sept 22	W	Lecture	Discussion #3b – Electrofishing 2 of 2 - Application		
Sept 22	W	Discussion	Case study	Case Study 8 - Pike	
Sept 24	F	Lecture	Time to meet with Team		Citations and planning document for Team exercise due
Sept 27	M	Lecture	Life history strategies and reproduction	Tyus, Ch. 26	
Sept 29	W	Exam # 1			Letter for Funding Due
Oct 1	F	Lecture	Recruitment & population dynamics 1 of 2	Tyus, Ch. 26,28	
Oct 4	M	Lecture	Recruitment & population dynamics 2 of 2	Tyus, Ch. 26, 28	
Oct 6	W	Lecture	Ecosystem Management	Hubert & Quist 13	
Oct 6	W	Discussion	Discussion #4 – Tagging and marking		
Oct 8	F	Lecture	Angler Motivations		
Oct 11	M	Lecture	Management & regulations 1 of 2	Kohler&Hubert Ch.2&5	
Oct 13	W	Lecture	Case study	Case Study Structural Indices	
Oct 13	W	Discussion	Discussion #5 – Ageing		
Oct 15	F	Lecture	Management & regulations 2 of 2	Kohler&Hubert Ch.2&5	
Oct 18	M	Lecture	Stunting	Links 1 and 2	Lecture Knowledge Check 3
Oct 20	W	Lecture	Management of rivers & streams 1 of 2	Hubert & Quist 18-21	
Oct 20	W	Discussion	Discussion #6 – Angler surveys		



Oct 22	F	Lecture	Management of rivers & streams 2 of 2	Hubert & Quist 18-21		
Oct 25	M	Lecture	Habitat & manipulations 1 of 2	Kohler&HubertCh.9-12		
Oct 27	W	Lecture	Habitat & manipulations 2 of 2	Kohler&HubertCh.9-12		
Oct 27	W	Discussion	Discussion #7 – Habitat and water quality assessments			
Oct 29	F	Lecture	Time to meet with Team			
Nov 1	M		Case study	Case Study_22 – Slot Length		
Nov 3	W	Exam # 2				
Nov 5	F	Lecture	Mgmt of reservoirs, lakes & impoundments	Hubert&Quist 15, 16, 17		
Nov 8	M	Lecture	Time to meet with Team			
Nov 10	W	Lecture	Team Exercise #1 – Invasive Carp			
Nov 10	W	Discussion				
Nov 12	F	Lecture	Stocking & hatcheries	Kohler & Hubert Ch.14		
Nov 15	M	Lecture	Marine Fisheries			
Nov 17	W	Lecture	Team Exercise #2 – Snake River Dams			
Nov 17	W	Discussion				
Nov 19	F	Lecture	Invasive and threatened species	Helfman Chapter 4	Lecture Knowledge Check 4	
Nov 22	M	Thanksgiving Break				
Nov 24	W					
Nov 24	W					
Nov 26	F					
Nov 29	M	Lecture	Dams and barriers	Helfman Chapter 6		
Dec 1	W	Lecture	Aquaculture	Helfman Chapter 14		
Dec 1	W	Discussion	Discussion #8 – Habitat restoration			
Dec 3	F	Lecture	Protected areas		Lecture Knowledge Check 5	
Dec 6	M		Discussion #9 – Management scenario discussion			
Dec 8	W	Lecture	Climate change	Case study – 4 Tables		
Dec 8	W	Discussion	Case study & review session		Peer and self evaluation for team members	
Final Exam: Friday December 10, 1:30 – 4:30 pm						