

E416 & E516 - FISHERIES MANAGEMENT Monday 6:30 pm to 7:45 pm

Sandy Clark-Kolaks

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Office hours: 6:15 on class evenings, and after class (additional by appointment) in the classroom. On class days, I will arrive 15 minutes before the beginning of class and am willing to stay after class. If you wish to make an appointment outside of those times please email or text me.

Course objectives:

This course will provide students with an introduction and overview of the processes for managing fisheries in a variety of environments. The course will cover the basics of fish biology, ecology and management, with an emphasis on public involvement. Students will gain an understanding of quantitative fisheries methods, including population dynamics and management strategy evaluation, and presentation of scientific information in both written and spoken form. Students will be expected to think critically, apply scientific method, and recognize the limitations of techniques and explore solutions. Fisheries Management is a listed concentration elective for several SPEA graduate concentrations. Please consult the Master's Student Handbook or a graduate advisor if you have questions concerning concentration credit.

Required materials: There is no assigned textbook for this class but supplemental reading materials will be posted on Canvas and/or emailed. Please read these materials as they will be used in class as discussion topics and their content will be included in tests

What to expect: Lectures will consist of instructor lead presentations followed by group discussions.

- Class participation will be measured through attendance and participation in class discussion.
- Examinations will assess the material covered in all classes (including guest lectures) and assigned online readings.
- Quizzes will be given periodically over lecture materials or online readings to make sure students are keeping up with readings.
- A final project will be assigned to graduate students who will work independently to enter, analyze, and create a presentation for an assigned lake scenario at the end of the semester to demonstrate skills and understanding of material presented over the semester. Undergraduates will assist with grading presentations.
- A final cumulative exam will be given.

Grade breakdown:

Class participation 25 points

Exam 1 50 points

Exam 2 50 points

Final exam 50 points

Quizzes 70 points

Resumes (undergraduates) 10 points

Lake scenario report 25 points (graduate students) or 5 points (undergraduates)

There will be no make-up exams, it is too difficult to schedule and is generally not fair to the rest of the class! Do not miss the exams! The grading scale will be the standard in Canvas.

Tentative course calendar (subject to change):

Week	Date	Lecture Topic	Assignment
1	Aug 26	Introduction	Martin and Pope 2011 (Quiz)
1	Aug 28	Process of fisheries management	
2	Sept 2	No Class	
2	Sept 4	Ichthyology	
3	Sept 9	Ichthyology/Stream QHEI	(Quiz)
3	Sept 11	Sampling equipment	
4	Sept 16	Sampling (Lake Monroe)	

4	Sept 18	Back up sampling or No class	
5	Sept 23	Length, weight, and structural indices	Doss et al. 2019 (Quiz)
5	Sept 25	Stream QHEI (field)	
6	Sept 30	Exam 1	Canfield 2017
6	Oct 2	Age and growth	Tyszko and Pritt 2017(Quiz)
7	Oct 7	Filleting (Bloomington DNR Office)	
7	Oct 9	Mortality	
8	Oct 14	Yield-per-recruit	
8	Oct 16	Abundance	
9	Oct 21	Population growth	(Quiz)
9	Oct 23	Social Surveys	
10	Oct 28	Fish Kills and diseases (Guest Lecturer Alysa Raleigh)	
10	Oct 30	Rivers & Streams (Guest Lecturer Drew Holloway)	(Quiz)
11	Nov 4	(Guest Lecturer Hanna Joergens)	

11	Nov 6	Exam	
12	Nov 11	Vegetation/Small ponds	(Quiz)
12	Nov 13	Reservoirs (Guest lecturer Rebecca Munter)	
13	Nov 18	Glacial Lakes (Guest lecturer Jeremy Price)	
13	Nov 20	No Class Thanksgiving	
14	Nov 25	No Class Thanksgiving	
14	Nov 27	Lake Michigan (Guest Lecture Ben Dickenson)	Fahnenstiel et al. 2010
15	Dec 2	Invasive & Nuisance species	
15	Dec 4	Lake presentations	
16	Dec 9	Lake presentations	
16	Dec 11	Lake presentations	
17		Final exam	

Readings:

Canfield, D.E. Jr., 2017. Comment: Do something or do nothing-the fisheries management conundrum. North American Journal of Fisheries Management 37:809-815.

Doss, S. S., Murphy, B. R., Castello, L., Williams, J. A., Copeland, J. and DiCenzo, V. J. 2019. Field Evaluation and Simulation Modeling of Length Limits and their Effects on Fishery Quality

for Muskellunge in the New River, Virginia. *North American Journal of Fish Management* 39: 3-16.

Fahnenstiel, G.; Nalepa, T.; Pothoven, S.; Carrick, H.; and Scavia, D., 2010. Lake Michigan lower food web: Long-term observations and Dreissenaimpact. *Journal of Great Lakes Research* 36(2010), 1-4.

Junk, W. J., Bayley, P. B., & Sparks, R. E. 1989. The flood pulse concept in river-floodplain systems. *Canadian special publication of fisheries and aquatic sciences* 106(1), 110-127.

Martin, D.R. and K.L. Pope. 2011. Luring anglers to enhance fisheries. *Journal of Environmental Management* 92, 1409-1413.

Sedell, J. R., Richey, J. E., & Swanson, F. J. 1989. The river continuum concept: a basis for the expected ecosystem behavior of very large rivers. *In Proceedings of the international large river symposium* (Vol. 106, pp. 49-55). *Canadian Special Publication of Fisheries and Aquatic Sciences*.

Shiffman, D. S. 2018. Social Media for Fisheries Science and Management Professionals: How to Use It and Why You Should. *Fisheries* 43: 123-129.

Tyszko, S. M. and Pritt, J. J. 2017. Comparing Otoliths and Scales as Structures Used to Estimate Ages of Largemouth Bass: Consequences of Biased Age Estimates. *North American Journal of Fisheries Management* 37: 1075-1082.

O'Neill School expectations of civility and professional conduct[\[1\]](#)

The O'Neill School takes matters of honesty and integrity seriously because O'Neill is the training ground for future leaders in government, civic organizations, health organizations, and other institutions charged with providing resources for the public, and for members of society who are vulnerable and who are lacking in power and status. Precisely because O'Neill graduates tend to rise to positions of power and responsibility, it is critical that the lessons of honesty and integrity are learned early.

O'Neill requires that all members of its community – students, faculty, and staff – treat others with an attitude of mutual respect both in the classroom and during all academic and nonacademic activities outside the classroom. A student is expected to show respect through behavior that promotes conditions in which all students can learn without interruption or distraction. These behaviors foster an appropriate atmosphere inside and outside the classroom:

- Students are expected to attend class regularly and to be prepared for class.
- Students must be punctual in their arrival to class and be present and attentive for the duration of the class. Eating, sleeping, reading the newspaper, doing work for another class, wandering in and out of the classroom, and packing up or leaving class early are not civil or professional behaviors.

- Students must abide by the course policy regarding use of electronic devices in the classroom.
- Students must responsibly participate in class activities and during team meetings.
- Students must address faculty members, other students, and others appropriately and with respect, whether in person, in writing, or in electronic communications.
- Students must show tolerance and respect for diverse nationalities, religions, races, sexual orientations, and physical abilities.
- Students must not destroy or deface classroom property nor leave litter in the classroom.

[1] These expectations are excerpted from the O'Neill School Honor Code which can be found at: <https://oneill.indiana.edu/undergraduate/course-advising/advising/resources.html>

Academic Integrity

Use of AI (such as ChatGPT) in this class. Using AI (such as ChatGPT) to assist in completing assignments in this class is prohibited. If you do use AI, you will be committing plagiarism* and will be subject to penalties in this class and sanctions by Indiana University.

***Plagiarism:** Plagiarism is defined as presenting someone else's work, including the work of other students, as one's own. *Any ideas or materials taken from another source* for either written or oral use *must be fully acknowledged*, unless the information is common knowledge. What is considered "common knowledge" may differ from course to course. <https://studentcode.iu.edu/responsibilities/academic-misconduct.html>.

Note Selling: Several commercial services have approached students regarding selling class notes/study guides to their classmates. Selling the instructor's notes/study guides in this course is not permitted. Violations of this policy will be reported to the Dean of Students as academic misconduct (violation of course rules). Sanctions for academic misconduct may include a failing grade on the assignment for which the notes/study guides are being sold, a reduction in your final course grade, or a failing grade in the course, among other possibilities. Additionally, you should know that selling a faculty member's notes/study guides individually or on behalf of one of these services using IU email, or via Canvas may also constitute a violation of IU information technology and IU intellectual property policies; additional consequences may result.

Materials: The faculty member teaching this course holds the exclusive right to distribute, modify, post, and reproduce course materials, including all written materials, study guides, lectures, assignments, exercises, and exams. While you are permitted to take notes on the online materials and lectures posted for this course for your personal use, you are not permitted to re-post in another forum, distribute, or reproduce content from this course without the express written permission of the faculty member. Any violation of this course rule will be reported to the appropriate university offices and officials, including to the Dean of Students as academic misconduct.

Major disruptions in your life

It's easier to help if we know something is going on. Please try to be in touch as soon as you can - it makes it easier for all of us in the long run, even if it is difficult in the short run to bring yourself to talk about it. You don't owe us the details – just a message that life has become difficult or complex and some idea of what kind of timeframe you think might be involved will help us to help you best.

Incompletes. The grade of Incomplete used on the final grade reports indicates that the work is satisfactory as of the end of the semester but has not been completed. The grade of Incomplete may be given only when the completed portion of a student's work in the course is of passing quality. Instructors may award the grade of Incomplete upon a showing of such hardship to a student as would render it unjust to hold the student to the time limits previously fixed for the completion of his/her work. (<http://policies.iu.edu/policies/categories/academic-faculty-students/academic-student-affairs/incompletes.shtml>)

Late Withdrawal. The auto-W deadline is NO LONGER THE LAST DAY OF CLASS (as it was during and post-Covid). After the auto-W deadline, withdrawal will be significantly limited and you will need permission to withdraw and must meet requirements established by O'Neill.

General sources of student support

Disability Services for Students. Securing accommodations for a student with disabilities is a responsibility shared by the student, the instructor and the DSS Office. For information about support services or accommodations available to students with disabilities, and for the procedures to be followed by students and instructors: <http://studentaffairs.iub.edu/dss/>.

SPEA Honor Code. SPEA takes matter of honesty and integrity seriously because SPEA is the training ground for future leaders in government, civic organizations, health organizations, and other institutions charged with providing resources for the public, and for members of society who are vulnerable and who are lacking in power and status. Precisely because SPEA graduates tend to rise to positions of power and responsibility, it is critical that the lessons of honesty and integrity are learned early.

https://spea.indiana.edu/doc/undergraduate/ugrd_student_honorcode.pdf

Counseling and Psychological Services (CAPS).

For information about services offered to students by CAPS: <http://healthcenter.indiana.edu/counseling/index.shtml>

TimelyCare

Indiana students have free, 24/7 access to virtual mental health care services with TimelyCare. Students do not need insurance to access TimelyCare services. <https://www.iu.edu/mental-health/find-resources/timely-care.html#0>

Students in Financial Crisis. The Student Advocates Office can help students work through personal and academic problems as well as financial difficulties and concerns in order to help

students progress towards earning a degree. In addition to advising student on appeal and financial issues such as financial aid or tuition, they also have emergency funds for IU students experiencing emergency financial crisis. <https://studentaffairs.indiana.edu/student-advocates/>

Religious Observation

In accordance with the Office of the Dean of Faculties, any student who wishes to receive an excused absence from class must submit a request form available from the Dean of Faculties for each day to be absent. This form must be presented to the course instructor by the end of the second week of this semester. A separate form must be submitted for each day. The instructor will fill in the bottom section of the form and then return the original to the student. Information about the policy on religious observation can be found at the following website: <https://policies.iu.edu/policies/aca-59-accommodation-religious-observances/index.html>

Sexual Harassment

As your instructor, one of my responsibilities is to help create a safe learning environment on our campus. Title IX and our own Sexual Misconduct policy prohibit sexual misconduct. If you have experienced sexual misconduct, or know someone who has, the University can help.

If you are seeking help and would like to talk to someone confidentially, you can make an appointment with:

1. The Sexual Assault Crisis Service (SACS) at 812-855-8900
2. Counseling and Psychological Services (CAPS) at 812-855-5711
3. Confidential Victim Advocates (CVA) at 812-856-2469
4. IU Health Center at 812-855-4011

For more information about available resources: <http://stopsexualviolence.iu.edu/help/index.html>. It is also important to know that federal regulations and University policy require me to promptly convey any information about potential sexual misconduct known to me to our campus' Deputy Title IX Coordinator or IU's Title IX Coordinator. In that event, they will work with a small number of others on campus to ensure that appropriate measures are taken and resources are made available to the student who may have been harmed. Protecting a student's privacy is of utmost concern, and all involved will only share information with those that need to know to ensure the University can respond and assist. I encourage you to visit <http://stopsexualviolence.iu.edu/help/index.html> to learn more.

Commitment to Diversity: Find your home and community at IU

Asian Culture Center

Address: 807 East Tenth Street, Bloomington, IN 47408

Phone: 812-856-5361

Email: acc@indiana.edu

Website: <https://asianresource.indiana.edu/index.html>

First Nations Educational & Cultural Center

Address: 712 E 8th St., Bloomington, IN 47408

Phone: 812-855-4814

Email: fnecc@indiana.edu

Website: <https://firstnations.indiana.edu/contact/index.html>

Jewish Culture Center

Address: 730 E 3rd St., Bloomington, Indiana 47401

Phone: 812-336-3824

Website: <https://iuhillel.org/iu-jewish-culture-center>

LGBTQ+ Culture Center

Address: 705 E 7th St., Bloomington, Indiana 47408

Phone: 812-855-4252

Email: gbltserv@indiana.edu

Website: <https://lgbtq.indiana.edu/contact/index.html>

La Casa Latino Culture Center

Address: 715 E 7th St., Bloomington IN, 47408

Phone: 812-855-0174

Email: lacasa@indiana.edu

Website: <https://lacasa.indiana.edu/>

Neal-Marshall Black Culture Center

Address: 275 N Jordan Ave Bloomington, Indiana 47405

Phone: 812-855-9271

Email: nmgrad@indiana.edu

Website: <https://blackculture.indiana.edu/index.html>