

EEOB 5420: Aquatic Ecosystems- Ecology of Inland Waters Syllabus

SUMMER 2025- June 16-July 27

Course Information

- **Course time and location:** Tuesday, Thursday, Saturday, 8:00 am – 5:00 pm, Stone Laboratory, Put-in-Bay, Ohio
- **Credit hours:** 4
- **Mode of delivery:** This six-week course consists of lecture, fieldwork and laboratory time

Instructors

- **Name:** Dr. Darren Bade, Dr. William Edwards
- **Email:** dbade@kent.edu, wje@niagara.edu
- **Preferred means of communication:**
 - Preferred method of communication for questions is **email**.

Course Prerequisites/Co-Requisites

At least junior standing by the summer of enrollment, minimum GPA of 2.5, and completion of 15 hours of biology and a basic chemistry course that includes a lab, OR permission of instructor. Knowledge of basic ecological principles is also recommended.

Course Description

Limnology is the study of inland waters. It is an interdisciplinary science that integrates the study of geological, physical, chemical, and biological processes in these waters. During this course students will investigate the aquatic communities and ecosystem processes that occur in lakes, rivers, and ponds.



Much of the course will involve outdoor fieldwork in lake, river, and pond settings. During this course students will learn standard field and laboratory techniques in aquatic sciences. Time spent in a lecture hall will be minimized with content being interspersed during field and lab experiences. Students will complete a research paper based on their own limnological data and literature analysis. Presentations on timely limnological topics will also be expected (e.g. invasive species). Upon completion of the course students will be able to:

- Link the geological, physical, chemical, and biological processes of inland waters
- Hypothesize how the structure of aquatic communities and ecosystems function are related
- Evaluate how humans have impacted aquatic systems (i.e., invasive species, cultural eutrophication, toxins, etc.)
- Perform standard limnological techniques used in research and professional aquatic fields
- Analyze aquatic data using appropriate statistical techniques
- Conduct literature research on important aquatic science questions
- Work cooperatively in group settings
- Enjoy and appreciate Lake Erie's aquatic habitats and teach others of their beauty and value!!

How This Course Works

Mode of delivery: This course is taught in person. Students are expected to attend class each day during the scheduled meeting sessions. Exams will be administered in person.

Credit hours and work expectations: This semester long course is condensed into six weeks. Valiant efforts are made to make the assignments from lab doable within the allotted lab time.

Attendance and participation requirements: Students are expected to actively participate in all class sessions, including lectures, fieldwork and laboratory time.

Research beliefs and guest lectures: Stone Lab offers an excellent seminar series during the summer, with nationally and internationally known scientists, managers, and policy makers. Students in this course are required to attend these lectures. Lectures occur on Thursday evenings from approximately 7-9 PM. Material presented in these lectures may be included in course work or evaluations if appropriate.



Course Materials, Fees and Technologies

Required Materials and/or Technologies

- None; materials will be presented in class

Recommended/Optional Materials and/or Technologies

- Optional rain gear, appropriate clothing for getting wet/muddy, extra shoes, swimwear/light clothing.

Required Equipment

- **Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection.
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for [technology and internet access](https://go.osu.edu/student-tech-access) (go.osu.edu/student-tech-access).

Required Software

Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Visit the [installing Office 365](https://go.osu.edu/office365help) (go.osu.edu/office365help) help article for full instructions.

Technology Skills Needed for This Course

- Basic computer and web-browsing skills

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat:** go.osu.edu/it
- **Phone:** [614-688-4357 \(HELP\)](tel:614-688-4357)
- **Email:** servicedesk@osu.edu

Grading and Faculty Response

How Your Grade is Calculated

Assignment Category (assessments are tentative and subject to change)	Percentage
Field, lab, lecture exercises, homework	75%
Final Exam	25%

Descriptions of Major Course Assignments

Each Instructor will assign 50% of the grade using the breakdown in the table above:

Description: Field, lab, lecture exercises, homework

Students will complete field and lab notebooks. Reports and presentations will be made from experiments and observations during field trips. Other homework will consist of assignments preparing for field trips, assignments analyzing data collected, and assignments summarizing lecture content ...

Description: Final Exams

Each instructor will assign a summary exam. The exam will include short answer and long answer sections. Time to complete the exams will be given in and out of the regularly schedule course meetings.

Late Assignments

Please refer to the instructor for due dates, as items may change with changes in field and lab timing. Due dates are set to help you stay on pace and to allow timely feedback that will help you complete subsequent assignments.

Grading Scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-

77–79.9: C+
73–76.9: C
70–72.9: C-
67–69.9: D+
60–66.9: D
Below 60: E



Course Schedule

(Subject to change due to weather or other unforeseen circumstances)

Date	Morning	Reading/DUE	Afternoon	Reading/DUE
Jun 16 M	None		Course Introduction (Evening)	
17 T	Lecture: Limno Intro L – Physics Light		L- Lake Habitats and Morphometry L- Geology- Lake Origins (read)	
19 R	F-Science Cruise (8 am depart) (Ballast or Kelley's Island Deep) intro to limno sampling		F – Kelley's Island (Geology)	
21 S	L – Physics – thermal stratification L- Physics- Water Movements		L – Hydrology and watersheds	
24 T	F- All day: Sandusky Bay/Subbasin			
26 R	Hab forecast (time TBD) L - reservoirs		Data analysis/work on projects	
28 S	L-Other topics		Data analysis/work on projects	
July 1 T	F – All day: Portage River (Should get back in time to set up experiment)			
3 R	L- Overview of water chemistry		L - pH, inorganic carbon, alkalinity	
5 S	F- Light/ Dark Bottle Photosynthesis/Respiration		L- Oxygen, CO ₂	Eval 1
8 T	L - Nitrogen L - Phosphorus		Data analysis/work on projects/presentations	
12 S	L – Other elements L – pollutants and toxins		Data analysis/work on projects/presentations	
15 T	L-Overview of Aquatic Foodweb L-primary producers		L - zooplankton	



17 R	F – Lake Erie phyto/zooplankton sampling		Microscopy	
19 S	L - Fish		L – Macrophytes – shallow lakes	
22 T	F – Lake Erie fish/invert sampling		L-invertebrates	
24 R	F - Old Woman Creek/Huron River (7:30am depart)		F - Old Woman Creek/Huron River	
26 S	Data analysis/work on projects/presentations		Move out	Eval 2

Legend:

F- Field/ Laboratory Activity

L- Lecture



Other Course Policies

Academic Integrity Policy

See [Descriptions of Major Course Assignments](#) for specific guidelines about collaboration and academic integrity in the context of this online class.

Ohio State's Academic Integrity Policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct and this syllabus may constitute Academic Misconduct.

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: Any activity that tends to compromise the academic integrity of the University or subvert the educational process. Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's Code of Student Conduct is never considered an excuse for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact the instructor for this course.

For more information:

- [Committee on Academic Misconduct](http://go.osu.edu/coam) (go.osu.edu/coam)

Copyright for Instructional Materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Civil Rights Compliance Office:

Online reporting form at civlrights.osu.edu
Call 614-247-5838 or TTY 614-688-8605,
Or Email civilrights@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Civil Rights Compliance Office to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.



Diversity

The Ohio State University affirms the importance and value of diversity of people and ideas. We believe in creating equitable research opportunities for all students and to providing programs and curricula that allow our students to understand critical societal challenges from diverse perspectives and aspire to use research to promote sustainable solutions for all. We are committed to maintaining an inclusive community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among all members; and encourages each individual to strive to reach their own potential. The Ohio State University does not discriminate on the basis of age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, gender, sexual orientation, pregnancy, protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment.

In addition, this course adheres to **The Principles of Community** adopted by the College of Food, Agricultural, and Environmental Sciences. These principles can be found at <https://cfaes.osu.edu/about/cfaes-principles-community>. If you have been a victim of or a witness to harassment or discrimination or a bias incident, you can report it online and anonymously (if you choose) at <https://civilrights.osu.edu/>.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing.

If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th floor of the Younkin Success Center and 10th floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292-5766 and 24-hour emergency help is also available through the 24/7 by dialing 988 to reach the Suicide and Crisis Lifeline.

Religious Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the Civil Rights Compliance Office.

Policy: [Religious Holidays, Holy Days and Observances](#)

Weather or other short-term closing

Although Ohio State strives to remain open to ensure continuity of services to students and the public, extreme conditions can warrant the usage of the university's [Weather or Other Short-Term Closing Policy](#). Please [visit this webpage](#) to learn more about preparing for potential closings and planning ahead for winter weather.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Requesting Accommodations

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.

If you are ill and need to miss class, including if you are staying home and away from others while experiencing symptoms of a viral infection or fever, please let me know immediately. In cases where illness interacts with an underlying medical condition, please consult with Student Life Disability Services to request reasonable accommodations. You can connect with them at slds@osu.edu; 614-292-3307; or slds.osu.edu.

Disability Services Contact Information

- Phone: [614-292-3307](tel:614-292-3307)
- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: [Baker Hall 098, 113 W. 12th Avenue](#)

