

Limnology
PCB 5307C (Section 1212) and GLY 4930 (Section 9999)
Fall 2024
11:45-1:40 PM (Monday/Wednesday)
Williamson 210

This course examines physical, chemical, and biological aspects of inland waters, with a focus on tropical and subtropical lakes, rivers, and springs. Field excursions will be scheduled for class times and/or several Saturdays

Instructor: Dr. Mark Brenner (Geological Sciences)
Williamson Hall 203
352-392-7226
brenner@ufl.edu
Office Hours: Tuesday 10:00 AM-12:00 PM (but also by arrangement)

*Text: Gerald A. Cole "Textbook of Limnology" (4th or 5th ed.)
Reprints of additional readings: Made available for specific topics
*At least one classroom copy will be available

Course Schedule (Weekly topics)

Course Introduction (Chapters 1, 2, 3).

- Schedule (lectures, fieldtrips)
- Objectives of class and background of students
- Defining limnology
- History of limnology and major contributors
- Sources of information (books, journals, websites, professional organizations)

Lake origins and ages (Chapter 6)

- Solution, playa, tectonic, glacial, biogenic, fluvial, volcanic, impact craters, artificial

Lake morphometry (Chapter 7)

- Bathymetry, morphometric measures
- Shoreline development and other watershed/lake relations

Hydrology (hydrologic types)

- Inputs/outputs, seepage/drainage
- Lake levels

Light (Chapter 9)

- Light penetration
- Dissolved color
- Absorption (pigments)
- Suspended inorganic particles
- Euphotic/aphotic zones

Thermal stratification (Chapter 10)

Density, temperature, salinity, stability
Annual circulation patterns

Heat Energy/Water movements (Chapter 11)

Heat budgets, waves, seiches

Dissolved gases (Chapter 12)

Oxygen and carbon dioxide
Methods of measurement
Gases and circulation patterns

Lake water chemistry and the carbonate system (Chapter 13)

pH, alkalinity, the CO₂ system
Lake acidification and alkalization

Major ions in lakes (Chapter 14)

Specific conductance, TDS, individual ions

Nutrients, and minor chemical constituents (Chapter 15)

Carbon, nitrogen, phosphorus

Primary producers (Chapters 4, 5)

Phytoplankton and macrophytes
Zooplankton
Benthic organisms
Larger consumers

Lotic systems (Chapter 8)

Springs, rivers
Estuaries, coastal lagoons

Human impacts on aquatic systems

Hydrology, eutrophication, contamination, exotic introductions

Paleolimnology (Review Chapter 2)

Paleoclimate
Human impacts
Florida paleo case studies
Tropical paleolimnology

Expectations and Grading

(Take-home exam) – This is an open-book, take-home exercise and students can use any resources to complete the problems and answer questions. It will be given in late October and students will have ample time (10-14 days) to complete the exam.

Each student in PCB 5307c/GLY4930 will complete a research report or “proposal.” Results of this exercise will be presented by PCB 5307c students to the class orally during the last week of the course or finals week. A written version (~10 pages) is also due the last week of class or finals week. The semester grade is based on the mid-term exam (40%), class participation (10%), class presentation (20%), and the final written report (30%). Students enrolled in GLY 4930 will write a paper but will not be required to give a presentation. They are, however, expected to attend the graduate student presentations.

For further information on UF's Grading Policy, consult:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

COURSE AND UNIVERSITY POLICIES

Academic accommodations for students with disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. Students can copy and paste the following link to obtain information about accommodations (<https://disability.ufl.edu/get-started/>). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course evaluation process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.

Academic Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Go here to read the Conduct Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>). If you have any questions or concerns, please consult with the instructor or TAs in this class.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Campus Resources

Health and Wellness

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit the We Care website (<https://umatter.ufl.edu>) to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website (<https://counseling.ufl.edu>) or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website (<https://shcc.ufl.edu>).

University Police Department: Visit UF Police Department website (<https://police.ufl.edu>) or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website (<https://ufhealth.org/emergency-room-trauma-center>).

Academic Resources

E-learning technical support: Contact the UF Computing Help Desk at <https://helpdesk.ufl.edu>, 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services, <https://career.ufl.edu>.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources (<https://uflib.ufl.edu/find/ask/>).

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring (<https://teachingcenter.ufl.edu>).

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers (<https://writing.ufl.edu/writing-studio/>).

Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information (<https://sccr.dso.ufl.edu/policies/student-honor-%20code-student-conduct-code/>).

On-Line Students Complaints: View the Distance Learning Student Complaint Process (<https://distance.ufl.edu/getting-help/student-complaint-process/>).